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# **Indonesia's Trade Access to the European Union: Opportunities and Challenges**

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European Union

1 November 2010

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MPRA Paper No. 41144, posted 09 Sep 2012 18:27 UTC

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# **INDONESIA'S TRADE ACCESS TO THE EUROPEAN UNION: OPPORTUNITIES AND CHALLENGES**

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**November 2010**

This report was commissioned and financed by the European Communities.  
The views expressed herein are those of the Consultants,  
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## List of Acronyms

ACP	African, Caribbean and Pacific (countries or states)	DGFPPM	Directorate General of Fishery Products Processing and Marketing
ABE	Asosiasi Perusahaan Jasa dan Barang Teknik Elektronika	DGFPS	Direccion General de Farmacia y Productos Sanitarios
ACA	Asian Cosmetic Association	EBA	Everything But Arms
ACD	ASEAN cosmetic directive	EC	European Commission
ACP	African, Caribbean and Pacific (States)	ECHA	European Chemicals Agency
AP5I	Association for Fish Processing and Marketing Companies in Indonesia	ECVAM	European Centre for Validation of Alternative Methods
APKJ	Small-Scale Furniture Producers Association	EEE	Electrical and electronic equipment
APUI	Asosiasi Pembenuh Udang Indonesia	EEZ	Exclusive Economic Zones
ASEAN	Association of Southeast Asian Nations	EFSA	European Food Safety Authority
ASI	Accreditation Services International	EMC	Electro Magnetic Compatibility
ASMINDO	Furniture and Handicraft Association	EMS	Equipment Manufacturing Services
ASTUIN	Association for Tuna Fish Companies	EPZ	Export Processing Zone
ATP	Autonomous trade preferences	EQI	Export Quality Infrastructure
B4T	Balai Besar Bahan dan Barang Teknik	ERP	Effective rate of protection
BBIA	Balai Besar Industri Agro	ESO	European Standards Organizations
BBKK	Balai Besar Kimia dan Keramik	ETPIK	Registered Exporters of Products of Forestry Industry
BIP	Border Inspection Post	ETS	Emission Trading Scheme
BPMBEI	Laboratory for Quality Testing of Export and Import Goods	ETSI	Emission Trading Scheme
BPOM	Indonesia the National Agency for Food and Drugs	EU	European Union
BSN	National Standardization Agency	FAO	Food and Agriculture Organization
CA	Competent Authority	FIFG	Financial Instrument of Fisheries Guidance
CAB	Conformity assessment body	FLEGT	Forest Law Enforcement Governance and Trade
CAP	Common Agricultural Policy	FOB	Free on Board
CB	Certification bodies	FSC	Forest Stewardship Council
CCP	Common Commercial Policy	FTA	Free trade agreements
CEN	European Committee for Standardization	FVO	Food and Veterinary Office
GENELEC	European Committee for Electrotechnical Standardization	GABEL	Gabungan Industri Elektronika dan Alat-Alat Listrik Rumah Tangga
CFP	Common Fisheries Policy	GAP	Good Aquaculture Practice
CMO	Common Market Organisation	GAPMMI	Gabungan Pengusaha Makanan dan Minuman Seluruh Indonesia
COM	Common Organization of the Markets	GDP	Gross Domestic Product
CPKB	Good Cosmetic Production Method	GHdP	Good Handling Practice
CRM	Certified Reference Materials	GHG	Greenhouse gas
CSR	Corporate Social Responsibility	GM	Genetically modified
DG SANCO	European Commission's Health and Consumer Protection Directorate General	GMOs	Genetically modified organisms
		GMP	Good Manufacturing Practices
		GP JAMU	Gabungan Pengusaha Jamu dan Obat Tradisional Indonesia
		GPSD	General Product Safety Directive

GSP	Generalized System of Preferences	PIF	Product Information File
HACCP	Hazard Analysis Critical Control Points	PPMB	Pusat Pengujian Mutu Barang
HS	Harmonized System	PT	Proficiency Tests
ICS	Internal Control System	PTB	Physikalische Technische Bundesanstalt
IDR	Iskandar Development Region	PTCI	PT Cosmetics Indonesia
IEC	International Electrotechnical Commission	PTFI	PT Furniture Indonesia
IIT	Intra-industry trade	PTFJ	PT Furniture Jerman
IIU	Illegal, unreported and unregulated	R&D	Research & development
IPPC	Integrated Pollution Prevention and Control	RAPEX	Rapid Alert System for non-food consumer products
IPPC-FAO	International Plant Protection Convention of Food and Agriculture Organization	RASFF	Rapid Alert System for Food and Feed
ISIC	International Standard Industrial Classification	RCChem	Research Centre for Chemistry
IT	Information Technology	REACH	Registration, evaluation, authorization and restriction of chemicals
ITC	Information and Communications Technologies	RoHS	Restriction of Hazardous Substances
KAN	Komite Akreditasi Nasional	SAD	Single admissions document
LDCs	Least Developed Countries	SCI	Shrimp Club Indonesia
LIPI	Lembaga Ilmu Pengetahuan Indonesia	SEI	PT Supplier Electronic Indonesia
MFN	Most-favored-nation	SGF	Schutzgemeinschaft der Fruchtsaft- Industrie e.V.
MMAF	Ministry of Fisheries and Marine Affairs	SME	Small and medium size enterprises
MOI	Ministry of Industry	SOP	Standard Operation Procedures
MRAs	Mutual recognition agreements	SPF	Specific Pathogen Free
MSDS	Material Safety Data Sheets	SPS	Sanitary and Phytosanitary (measures)
MSE	Micro and small enterprises	SWOT	Strengths, opportunities, weaknesses and threats
MUI	Majelis Ulama Indonesia	TBT	Technical Barriers to Trade
NADFC	National Agency of Drug and Food Control	TCI	Trade compatibility index
NCQC	National Center for Fish Quality Control	TFT	The Forest Trust
NPPOS	National Plant Protection Organizations	TLAS	Timber Legality Assurance System
NRCP	National Residue Control Plan	TSP	Trade Support Programme
NTBs	Non-Tariff Barriers	TÜV	Technischer Überwachungsverein
ODM	Original Design Services	U.A.R.	United Arab Republic
OEM	Original Equipment Manufacturers	VAT	Value added tax
PBB	Polybrominated biphenyls	VLO	Verification of Legal Origin
PBDE	Polybrominated diphenyl ethers	VPA	Voluntary Partnerships Agreement
PC	Personal computer	WEEE	Waste electrical and electronic equipment
PERKOSMI	Persatuan Perusahaan Kosmetik Indonesia	WTO	World Trade Organization



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# Executive Summary

## 1. The EU as an Important Market

There are extensive market opportunities for countries like Indonesia in the European Union. As a single entity, the European Union is the world's largest economic power, accounting for nearly 30 percent of total world output and outranking the total gross domestic product (GDP) of the United States, and of Japan and China combined. With the value of total trade equal to more than 40 percent of GDP, the European Union's openness to trade is more than three times greater than that of either the United States or Japan. The total value of its imports last year was US\$1.7 trillion, representing over 18 percent of total world trade. The ASEAN countries supply 5 percent of those EU imports and Indonesia contributes 18 percent of that share.

From Indonesia's perspective, there are two important differences among the 27 member countries of the European Union. The first is the large variations in the size of member countries in terms of their domestic markets and importance of external trade to their economies; the second is the considerable variation that occurs in consumer purchasing power across the countries. Under these conditions, Indonesian exporters have a wide range of market opportunities when looking for markets of different sizes, openness to foreign trade, and with consumer preferences for either high-end products or products that are more directed towards mass markets.

The European Union is also home for almost half of the world's largest transnational corporations. These companies depend on linkages with foreign-based producers in sectors that are of particular interest to Indonesia, for example, in chemicals, electrical equipment, food and beverage, motor vehicles, and pharmaceuticals. By integrating their supplies into global value chains of these transnationals, local Indonesian producers are increasingly becoming part of networks of cooperating firms that are involved in the full cycle of activities that add value to the products that they supply to consumers, both in Europe and elsewhere.

## 2. Indonesia's Trade Flows with the European Union and Other Important Markets

Notwithstanding the size and importance of the European Union, the share of Indonesia's exports destined for that market has declined substantially, from 18 percent to 14 percent over the last decade. This contraction parallels similar reductions in the share of Indonesia's exports directed

at the United States and Japan. As a whole, the absorption of Indonesia's exports by these three markets has fallen from 55 percent in 2000 to 40 percent in 2009.

Most of the decline in Indonesia's exports to these developed markets has been redirected to the ASEAN regional market. This shift has increasingly allowed other ASEAN countries to use Indonesia's natural resources in their unprocessed forms to move up their value chains and produce greater quantities of processed and high-tech products. As a result, the fast-growing East Asian economies have been able to concentrate a growing proportion of their exports in manufactures and high value-added products, while Indonesia has remained entrenched in the production of raw materials and products having relatively small value-adding activities.

Indonesia could reverse this pattern by focusing its production activities on processing activities and other activities that add value to products. It has a relatively high degree of trade compatibility with EU imports. There are also a large number of products in which Indonesia has already succeeded in increasing its market shares in rapidly expanding markets in the European Union. Examples include electronic components, processed and prepared foods, and chemicals. In other products, however, Indonesia has not yet taken advantage of the fast growing EU markets for products like soaps and cosmetics, television parts, furniture, crustaceans, footwear and jewellery. Recognising these opportunities could stimulate the Indonesian private sector, with Government support, to find ways to overcome existing obstacles and develop products with export potential to fast-growing EU markets.

### 3. Selection of Focal Industries for the Study

In order to provide lessons and guidelines for developing high-value added exports with dynamic growth markets in the European Union, the present study focuses on five industries or sub-sectors of importance to Indonesia. The selection process has invoked a number of criteria that can be grouped into three categories: (i) factors related to national development objective; (ii) factors related to foreign market determinants; and (iii) factors related to international competitiveness and internal factors. The results of this procedure have led to the selection of the following focal industries:

- **Fisheries and Agri-Foods:** There are large opportunities for exporters to move into high value-adding downstream activities. Small and medium size enterprises (SMEs) tend to predominate in food industry clusters, and networking activities along the value chain provide large opportunities for knowledge and technology transfers to local producers. There are also important gains to be made in poverty alleviation by generating employment.
- **Consumer Electronics:** The industry has considerable potential for value adding activities in the economy. There are extensive opportunities for Export Quality Infrastructure (EQI) support directed at moving Indonesia from low to medium-tech products with favourable market prospects in the new EU member states of Eastern Europe to high-tech components in the high-income Western European economies. Trade compatibility between Indonesia's existing exports of these products and EU imports in this industry is the highest of any of the industries considered.
- **Furniture:** Development of this industry would offer large possibilities for SMEs and micro and small scale enterprises (MSEs), and could lead to substantial employment generation and poverty alleviation throughout Indonesia. The benefits from EQI activities could have a favourable environmental impact through improved quality management and control, standardisation, inspections and certification. Domestic business and trade associations are strong and could provide support to exporters intending to enter the EU market.
- **Natural Cosmetics:** The industry has the highest import demand responsiveness to changes in economic activity in the European Union. It therefore has the best EU market prospects among all sectors. Downstream activities involving the location of facilities for further processing are rapidly emerging in new manufacturing areas, where large research and development (R&D) inputs are also needed. Requirements for EQI improvements are therefore large in the Indonesian industry's chain of activities.

#### 4. Focal Industries have a Huge Potential in the EU Market

Demand for imports of the focal products is projected to grow by nearly 7 percent a year over the medium term. This forecast is based on our econometric models that generated market estimates based on key assumptions about GDP growth, relative price changes for each of the traded products, and the exchange rate between the Euro and the US dollar. EU market outlook highlights are as follows:

- **Fisheries:** The European Union is, by far, the world's largest importer of fishery products, and its strong demand for fishery imports largely reflects its high responsiveness to changes in consumer incomes. Based on our estimates, and expectations about the medium-term prospects for economic growth, European fishery imports are projected to grow by a robust annual average of 8 percent. Above-average rates are expected to continue in processed fishery imports, which have in the past grown at rates that were twice those of all other types of fishery imports. The fastest growing product-level imports are likely to be fish and shellfish in their frozen form, including coalfish, eels, albacore, scallops, trout, mackerel, sardines and crabmeat. Imports of fresh and chilled yellow-fin tuna are also expected to show strong growth. Indonesia is in a particularly favourable position in that it has the world's largest catch of this species.
- **Agri-foods:** The EU demand for agri-food imports has been strong, particularly in its response to changes in consumer incomes. Demand for agri-food imports is projected to grow by 3.5 percent a year in the medium-term. Among individual product categories, fruit and vegetable juices are expected to continue as one of the largest processed agri-food imported into the European Union. It alone accounts for nearly one-fifth of all agri-food imports and it is expected to continue its robust growth, especially in tropical and exotic fruits that are abundant throughout Indonesia. Other major imports showing strong demand prospects are prepared vegetables and fruits, and condiments and seasonings, where Indonesia has large varieties.
- **Consumer Electronics:** The size of the consumer electronics markets far exceeds that of any other focal industry covered by this study. Demand is highly responsive to income changes, but year-to-year variations in EU imports are high. The medium-term forecast is for a 2 percent average annual growth of imports, but yearly variations from the trend are likely to be high. The top EU electronic product imports are fairly evenly distributed among the mass market applications in home appliances, data processing uses, audio and video.
- **Furniture:** The European Union is the world's largest market for furniture. The medium-term outlook is for a 2 percent annual growth in imports, as foreign supplies become an increasingly larger proportion of the total furniture market in Europe. The top importing countries in the European Union are the United Kingdom, Germany, France and the Netherlands, which together account for two-thirds of all EU furniture imports.
- **Natural Cosmetics:** The cosmetic market of the European Union is nearly as large as the combined markets of the United States and Japan. Common growth patterns are occurring throughout the European Union in sun-care products. In addition, the aging population of Europe is generating growing demand for creams and skin care products. There is also a rapidly expanding demand for natural and organic products across all age groups. Because of strong and rising consumption of cosmetic products in the European Union, cosmetic imports is projected to grow by 5-6 percent annually in 2010-2012, and thereafter accelerate to 7 percent a year.

#### 5. Market Potential of Focal Sectors Needs to be Counter-Balanced with Compliance of Quality Requirements

While the EU market offers enormous growth opportunities for Indonesian exporters, its regulatory environment has strict controls that are largely aimed at protecting consumers and the environment. Requirements covering security, technical, sanitary, phytosanitary, environmental and other regulations are generally harmonized among EU member countries. General regulations cover food and feed safety, environmental protection, marketing standards, product safety, technical standardisation,

packaging and labeling. Industry and product-specific requirements are also detailed in this study. This information is readily available and transparent to Indonesian exporters interested in selling their products in the EU market.

## **6. Indonesia is Well Positioned to Tackle Enormous Trade Potential with European Union**

Indonesia has numerous advantages in the EU market that could help to reverse the under-representation of the EU market in its export portfolio. It has low labor costs and ready access to an abundance of resources. Its export prices to the EU market are generally competitive in local currency units, notwithstanding the undervalued currencies of other major suppliers that have undermined Indonesia's price competitiveness in some products. With the likely re-alignment of currencies in the coming year, Indonesia's stable currency will undoubtedly attract investors.

In the EU market, Indonesia is a beneficiary of trade preferences under the Generalized System of Preferences (GSP), which grants product imports into the European Union either duty-free access or tariff reductions. At present, almost 40 percent of Indonesia's 13 billion Euros exports to the EU market are eligible for preferential treatment. Yet only about 3 billion Euros of those products are actually covered under the scheme, and they are mainly concentrated in the areas of telecommunications instruments, television and audio equipment, garments and footwear. There is therefore considerable scope for increased and broader use of the GSP facility by Indonesian exporters.

Government and business associations are facilitating private sector export growth to the European Union and elsewhere. The Government's trade policy goals and priorities are to (i) improve the country's business climate and regional competitiveness; (ii) attract greater foreign and domestic investment, especially in infrastructure and export sectors; and (iii) generate high-quality job growth needed for sustained economic development. To this end, the Government has been promoting bilateral, regional, and multilateral trade, with the aim of expanding international markets in the European Union and other markets.

Business associations have also provided extensive support to the private sector. However, for many small and medium size enterprises (SMEs) there remains a lack of awareness of EU market access requirements, product design needed for European customers, and available government support programs. Information dissemination by both Government and business associations is therefore an important means of ensuring that SMEs are able to successfully participate in value chains supplying the EU market.

## **7. Most Challenges for Indonesia are in Supply-Side Aspects, Especially the EQI System**

Indonesia has suffered important losses in EU market shares in the last decade. Our estimates of the export relationships in the focal industries suggest that those losses were largely due to non-price factors, including supply impediments from limitations in Export Quality Infrastructure (EQI). Export quality infrastructure is relevant for all products where importers require certain quality standards. For Indonesia's exports to the EU market, EQI issues centre on the system used to meet EU import standards and requirements, certification of products and management systems, competence of laboratories related to export, accreditation of laboratories, metrology and inspection. Testing and accreditation difficulties are common issues for Indonesian industries, as are the inability of laboratories to perform all testing and analysis required by the European Union. As a result, accreditation by the large number of certification bodies in Indonesia is not always recognised internationally. While these issues are common to most Indonesian industries, EQI impediments generally tend to be industry-specific.

Apart from EQI limitations, major cross-sectoral obstacles remain in area like poor infrastructure, particularly road, electricity and logistics, as well as lack of marketing expertise and networking in extra-regional markets. SMEs confront great challenges in meeting EU standards since they often lack information and face excessively high costs in gaining those standards.

Notwithstanding challenges in overcoming these obstacles, the results of this study point to the enormous export revenue gains that Indonesia could achieve if industries were to overcome EQI and other supply-related constraints and place their products in the EU market. For the five focal industries covered by this study, our estimates indicate that in the last decade the average revenue gain from exports to the EU market would have been 28 percent higher if those supply-constraints had been overcome. Industry-specific findings are striking:

#### ■ Fisheries

- *Non-Price Factors:* Negative non-price effects on Indonesia's export competitiveness in the EU market more than offset improvements in the relative price of the products themselves, thereby producing an overall reduction in Indonesia's share of EU imports from third countries.
- *EQI Issues:* Quality and food safety improvements are needed in fish vessels, fishing ports and at landing sites, while in fish farming the presence of antibiotics in fishery products remains a major issue for Indonesia's exports to the European Union.
- *Potential for Increasing Exports:* To the extent that Indonesia could have overcome its supply impediments on exports and maintained the same share of the EU fishery market that it reached in 2000, foreign exchange revenue from the industry during the last decade would have been nearly 20 percent higher in 2009 than was actually achieved.

#### ■ Agri-Foods

- *Non-Price Factors:* Our estimates show that non-price factors in the last decade have reduced Indonesia's share of the EU agri-foods market by 15 percent, while improvements in the industry's competitive export prices helped to increase market shares by an average of 6 percent. The net relative price gains were therefore not sufficient to offset the negative effects from EQI and other supply-related factors affecting the industry's performance.
- *EQI Issues:* The major impediments to bringing processing operations to the country are associated with SPS requirements in the EU market.
- *Potential for Increasing Exports:* If Indonesia had overcome its supply impediments on exports and maintained its agri-foods market share at the beginning of the last decade, the industry's foreign exchange revenue would have been two-thirds higher than actual levels in the last ten years.

#### ■ Consumer Electronics

- *Non-Price Factors:* Our estimates suggest that there has been a large reduction in the earlier negative effects from non-price factors associated with supply impediments. The improvement in supply conditions is likely to be associated with the growing influence of multinational enterprises in the country, and improved EQI conditions in the components industry.
- *EQI Issues:* EQI issues range from product design to components purchases, assembly and packaging.
- *Potential for Increasing Exports:* Had Indonesia overcome its supply impediments on exports and maintained its share of the EU consumer electronics market that it reached at the beginning of the last decade, foreign exchange revenue from the industry would have been nearly 10 percent higher in 2009 than was actually achieved.

#### ■ Furniture

- *Non-Price Factors:* Indonesia's market share losses in the European Union have been largely due to non-price factors associated with supply-side impediments, although price movements and exchange rate pass-through effects have also contributed to the decline. Our estimates suggest these non-price factors were responsible for about one-third of Indonesia's losses of shares in the EU furniture market during the past decade.

- o *EQI Issues:* EQI issues relate to the moisture content of woods to prevent cracking, standardisation of products, quality of the finished products, and safety testing.
- o *Potential for Increasing Exports:* Had the industry overcome supply-side impediments and maintained its share of the EU furniture market in the middle of the last decade, the industry would have generated an additional 20 percent of foreign exchange revenue in 2005-2009.

#### ■ **Natural Cosmetics**

- o *Non-Price Factors:* The industry experienced market share losses from non-price factors associated with supply impediments like EQI limitations. On average, the negative effect from non-price factors outweighed positive gains from price factors, causing a large net reduction in Indonesia's export market share of natural cosmetics and their ingredients in the EU market.
- o *EQI Issues:* The most important EQI issue is the ingredients used in products, where EU rules apply maximum concentration rates of allowable ingredients.
- o *Potential for Increasing Exports:* To the extent that Indonesia could have overcome its supply impediments on exports and maintained its cosmetics market share at the beginning of the decade, foreign exchange revenue from the industry would have been 40 percent higher in the first half of the decade, and more than 10 percent larger in the second half.

### **8. Compliance with EU Quality Requirements also Helps Indonesian Exports to Other Developed Markets**

Overcoming EQI and other supply-side obstacles will require considerable effort on the part of the industry. However, compliance with EU quality requirements would help Indonesian exporters not only gain greater access to the EU market, but also expand exports to other developed markets.

The benefits to the industry are considerable, as are the economy-wide effects that would be produced from additional employment and expenditures on downstream and supporting industries. These effects are particularly important for SMEs, which tend to predominate in upstream activities and have the greatest difficulties in getting their products to foreign markets.

# 1 Introduction

## 1.1 Background

**Study Context:** The Government of Indonesia under its National Long-Term Development Plan 2005–2025 envisions a high and inclusive economic growth as a means of achieving sustained prosperity for its people and the protection of its natural resources and environment. To achieve that object, Indonesia will need to achieve high export growth rates to drive its economic development. Yet the country's exports since the 1997 Financial Crisis have not been as strong as many of the other countries in the region. In terms of overall export growth during the present decade, the country ranks 9th out of 12 developing Asian economies (Table 1.1). Indonesia's exports to the European Union (EU) have fared about the same as other countries in the region. A number of internal and external constraints hinder the country's export performance, some associated with trade-related policies and others with the country's hard and soft infrastructure. Continued reliance on non-fuel primary commodity exports also reduces linkages in the economy. As a result, Indonesia has yet to reach its full potential in terms of producing and exporting higher value-added activities in key sectors, which could otherwise significantly enhance the development of its economy.

**Purpose of the Study:** The present Study examines the EU market potential and constraints to export development for priority sectors, with particular emphasis on Export Quality Infrastructure (EQI) issues. It has three specific aims. First, it seeks to identify export opportunities in the EU market in light of the country's competitiveness in priority sectors and trade compatibility with that market. Second, it aims to identify challenges to the realization of the country's export potential in terms of EU market entry requirements, EQI constraints, the conduciveness of its trade policy, and the support provided by business associations. Third, it intends to provide recommendations to relevant parties like the Government of Indonesia, the European Commission, and the business community on actions that would help the country to fully realize its export potential.

## 1.2 Challenges

**Constraints:** Indonesia has numerous potential export opportunities but it is also burdened by a range of difficulties that undermine the country's human and resource-based comparative advantage in some industries and therefore its intrinsic international competitiveness. Some of the notable

*Table 1.1:*  
**Developing Asian Countries' Average Annual Growth of Exports to World and EU, 2000-2009\***

	World	EU
China	20.21%	16%
Cambodia	19.60%	12%
Myanmar	10.02%	10%
India	17.41%	10%
Brunei	8.93%	9%
Viet Nam	7.03%	9%
Lao PDR	7.18%	7%
Thailand	10.66%	4%
<b>Indonesia</b>	<b>9.95%</b>	<b>3%</b>
Singapore	10.02%	1%
Malaysia	7.18%	1%
Philippines	1.59%	-4%

\* Ranked by EU growth rates.  
Source: United Nations, COMTRADE database, and EU Eurostat databases.

*Table 1.2:*  
**Exposure of Asian Countries to EU Market, 2009**  
*(million US\$ and percent)*

Country	Total Ex-ports	Exports to EU	% Exposure
Cambodia	4,358	1,068	24.50%
India	176,765	35,408	20.00%
China	1,201,647	299,648	24.90%
Viet Nam	62,685	10,844	17.30%
Philippines	38,436	5,330	13.90%
Brunei	7,636	36	0.50%
<b>Indonesia</b>	<b>116,510</b>	<b>16,239</b>	<b>13.90%</b>
Thailand	152,497	19,914	13.10%
Malaysia	157,195	20,460	13.00%
Lao PDR	1,768	193	10.90%
Myanmar	2,045	219	10.70%
Singapore	269,832	20,356	7.50%

Note: Trade exposure is measured as the country's exports to the European Union relative to total exports to all destinations.  
Source: United Nations, COMTRADE database, and EU Eurostat databases.

internal problems are (1) insufficient organizational resources for export marketing, especially for small and medium-size enterprises (SMEs); (2) lack of export financing; (3) problems in meeting importer quality standards; (4) insufficient information about overseas markets to help producers identify appropriate overseas distributors and communication networks with overseas customers; (5) product problems related to quality and technical requirements of the targeted export market segment, such as export product design, style, quality, packaging and labeling requirements and product adaptation or modification; and (6) lack of knowledge of foreign markets.<sup>1</sup> Poor infrastructure is also commonly cited as a major obstacle to exports.<sup>2</sup> Moreover, difficulties encountered in meeting product requirements in export markets like that of the European Union puts Indonesian exporters in a competitive disadvantage relative to more efficient competitors located in other countries.<sup>3</sup>

**Challenges:** The wide range of challenges facing the country's exports naturally places high expectations on the ability of the present Study to cover all these issues for the focal industries. In this respect, it is important to emphasize that the Study focuses on the potential and constraints of that market from the EU market side, and on EQI constraints impeding exports from Indonesia to the EU market. By itself, the identification and ranking of these constraints can make a valuable contribution and complement parallel work being carried out by other organizations in areas related to trade and transport logistics.

Another notable challenge for present Study has been the need to address the interests of both Government and the business community. While both stakeholders share similar overall objectives related to exports, their focus differs significantly from one another. As a facilitator, the Government's interest centers on economic and trade policies, the regulatory environment, hard and soft infrastructure, and standards and conformance needed to ensure compliance with rules established by international organizations and acceptance of conformity assessment results by trade partners on a global basis. In contrast, business interests tend to focus on a cost-based assessment of the steps needed to move their exports from the production site to the final destination abroad. The type of information needed by businesses therefore tends to be more practical and involves both a strategic component for competing in the market and a knowledge-based approach to complying with export procedures within the country and import requirements in the foreign market.

### 1.3 Coverage of Export Quality Infrastructure

**EQI Issues:** Export quality infrastructure is relevant for all export products that are required certain quality standards by the importers. For Indonesia's exports to the EU market, EQI issues center on the system used to meet EU import standards and requirements, certification of products and management systems, competence of laboratories related to export, accreditation of laboratories, metrology and inspection. Most of the laboratories operating in export-related activities are presently accredited. However, parameters related to testing procedures and sample matrices for proficiency testing requirements in the accreditation agencies are often not relevant for export products. For this reason, the Study Team has gathered information about laboratory competences and analyzed the information for the focal industries. Information has also been gathered about laboratory accreditation, proficiency tests and certified reference material. For products with an inspection system, especially foods, an assessment have been carried out.

**Progress under TSP-I:** Considerable progress was made under the EC's Trade Support Programme (TSP-I) in supporting the identification, adaptation and dissemination of EU technical standards to the local industries. The Programme also helped to improve quality control processes and SPS

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1. For a recent survey of problems facing SMEs in Indonesia, see H. Siringoringo et al. "Problems Faced by Small and Medium Business in Exporting Products". *Delhi Business Review*, 10(2), July-December 2009. See also Sefnedi, "Exploring the Export Marketing Competency of Indonesian Manufacturing Exporting Firms". Available: <http://www.docstoc.com/docs/29262839/Exploring-the-Export-Marketing-Competency-of-Indonesian-Manufacturing-Exporting-Firms/> . For the case of shrimp exports, see R. Oktaviani and Erwidodo, "Indonesia's Shrimp Exports: Meeting the Challenge of Quality Standards". WTO Secretariat, *Managing The Challenges Of Wto Participation: Case Study 18*. Available: [http://www.wto.org/english/res\\_e/booksp\\_e/casestudies\\_e/case18\\_e.htm](http://www.wto.org/english/res_e/booksp_e/casestudies_e/case18_e.htm). For fruits and vegetables, see H.K. Purwadaria, "Issues and Solutions of Fresh Fruit Exports in Indonesia". Available at [http://www.unpaem.org/Activities%20Files/A22/p32\\_IssuesIndonesia.pdf](http://www.unpaem.org/Activities%20Files/A22/p32_IssuesIndonesia.pdf)
  2. See, for example, "Indonesia's shoddy infrastructure threatens exports of produce". Available: [http://www.freshplaza.com/news\\_detail.asp?id=62622](http://www.freshplaza.com/news_detail.asp?id=62622)
  3. See, for example, T. Tambunan, "The Growth and Competitiveness of Indonesia's Wood Furniture Export". *Kadin Indonesia-Jetro*, August 2006.

compliance by Indonesian exporters. Despite progress observed in the capacity of competent authorities, much still remains to be done. Large impediments remain because of the fragmentation of responsibilities in public institutions charged with export quality issues, the absence of a well-integrated roadmap to improve the system, and insufficient interaction between public sector institutions and representatives of private sector interests in the export sector.

**EQIs in Focal Industries:** For the focal industries, the Study Team has identified the relevant technical, safety, sanitary and phytosanitary standards for export to the European Union. In carrying out this activity, we have mapped out the requirements involved in each step of the for each industry's value chain, from raw material supplier to distributors. Particular attention has been given to the following EQI components:

- **Standards:** Access to standards is critical to their use and implementation. SMEs, but also larger companies, often have difficulty accessing this information because the distribution channels are opaque and the information itself obscure or unintelligible to enterprises having limited knowledge capability. We have therefore investigated distribution channels and the extent to which information contained therein is readily available and the contents able to be understood by smaller, resource limited enterprises.
- **Quality Testing:** We have examined and identified existing constraints in the use of laboratories engaged in quality testing, including those operated by producers, independent laboratories and government agencies. The specific obstacles identified were the availability of export quality testing procedures, quality assurance, accreditation, and metrology aspects.
- **Conformity Assessment:** Certification bodies normally conduct conformity assessments based on the aforementioned laboratory results and standards. We have examined and identified constraints on the certification process for export-related products and management systems.
- **Inspection Agencies:** We investigated product-specific inspection institutes where such institutes exist in order to identify possible constraints in their inspection and accreditation process.
- **Cross-sectoral accreditation issues:** We examined the extent to which there exist constraints in cross-sectoral laboratory accreditation and certification bodies.

#### 1.4 How EQI Relates to WTO's TBT-SPS Agreements

Export Quality Infrastructure comprises export quality management and control, standardization, inspections and certification, rapid alert systems and market surveillance.<sup>4</sup> The term is used extensively by the European Commission for Indonesia's Trade Support Programme in assisting with the identification, adaptation and dissemination of EU technical standards to local industries and, in the case of Indonesia's food exports, with the improvement of quality control processes and sanitary and phytosanitary (SPS) compliance.

**TBT-SPS Agreements:** Under the World Trade Organization (WTO), these EQI issues relate to market access conditions covered within two WTO Agreements. The first is the Agreement on Technical Barriers to Trade (TBT) and the second is the Agreement on Sanitary and Phytosanitary (SPS) Measures. Both TBT and SPS measures and regulations address standards and safety. The SPS Agreement deals with food safety and animal and plant health and safety, while the TBT Agreement generally addresses product standards. The SPS Agreement in particular covers (a) sanitary measures for human and animal health, and (b) phytosanitary measures for plant health that apply to domestically produced food or local animal and plant diseases, as well as to products coming from other countries. The TBT Agreement covers technical requirements like regulations on packaging and labeling, and it includes procedures to assess compliance with those requirements (known as conformity assessment procedures). The most-favored-nation (MFN) and national treatment provisions apply to conformity assessment procedures. Both agreements have provisions on control, inspection and approval procedures. If an exporting country like Indonesia can demonstrate that the measures it applies to its exports achieve the same level of standards and safety as in the importing country, then the importing country is expected to accept the exporting country's standards and methods.

4. European Commission, "Commission Decision on the Annual Action Programme 2008 in favour of Indonesia to be financed under Article 19.100101 of the general budget of the European Communities". Brussels, 2008.

**EU Obligations:** Under the TBT and SPS Agreements, the European Union is obliged to notify other WTO members of its technical regulations and conformity assessment procedures. The European Commission has established an enquiry point, known as the EC-TBT Enquiry Point, which is responsible for the TBT notification procedure in each Member State. Member States are responsible for notification, with the Commission not being involved at this stage.<sup>5</sup> However, the European Communities do intervene when one Member State receives a comment from a third country.<sup>6</sup> For SPS measures, the EC notification authority is the Health and Consumers Directorate-General, Directorate D - Animal Health and Welfare, D3 - International questions (multilateral).<sup>7</sup>

## 1.5 Study Outline

The Study is organized into four broad parts:

- Overview of the European Union as a trading partner and Indonesia's export performance in that market, and the selection process for the Study's focal industries (Chapters 2-4).
- Analysis of the export potential in the EU market for Indonesia's focal industries, including the outlook for EU imports of products originating from those industries, and market access conditions that are essential to Indonesia's exporters (Chapters 4-7).
- Review and assessment of Indonesia's competitiveness in the EU market, obstacles confronted by exporters in accessing the market, including constraints hampering their exports and foreign exchange losses resulting from those difficulties, the facilitation of those exports through the Government's policies and regulatory environment, and the availability of business support services for exporters (Chapters 8-12).
- Detailed analysis on focal industries (Annexes A to E)

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5. The database is available at the following site: <http://ec.europa.eu/enterprise/tbt/index.cfm?fuseaction=Search.viewMenu&dspLang=EN>

6. The European Commission responsible body is Enterprise and Industry Directorate-General, Rue de la Loi 200, Brussels 1049, Belgium. Tel: (+32 2) 295 18 60. Email: [ec-tbt@ec.europa.eu](mailto:ec-tbt@ec.europa.eu). Web site: <http://ec.europa.eu/comm/enterprise/tbt/>.

7. The contact information is Commission européenne, B-1049 Bruxelles / Europese Commissie, B-1049 Brussel - Belgium. Telephone: (32-2) 299 11 11. Office: F101, 2/52. Telephone: direct line (32-2) 2968185.

PART I:  
TRADE PATTERNS



## 2 The EU Market

### 2.1 Overview of the European Union

The European Union is an economic and political entity made up of 27 member states and having a combined population of 500 million people.<sup>8</sup> One of its greatest accomplishments has been the creation of a single market with free movement of labor, capital, goods and services. In achieving this level of integration, the European Union has formed a common market in which a common external tariff is applied by all member states. As such, it is recognized as a single entity by the World Trade Organization (WTO). Other forms of unification of economic policies have occurred in the adoption by all member countries of common legal and regulatory systems governing such areas as agriculture and fisheries. In some cases, however, only a subset of members have adopted common economic and monetary policies like those of the Euro-zone, where 16 of the 27 members have adopted the euro as their common currency.

As a single entity, the European Union is the largest economic power in the world, outranking that of the United States or Japan and China combined (Figure 2.1). Its gross domestic product (GDP) of US\$16.5 trillion represents 29 percent of total world output.<sup>9</sup> The European

Union's services sector contributes by far the most value added (74%) to the economy. Industrial and construction activity adds another 24 percent to total value added, and agriculture contributes the remaining 2 percent.<sup>10</sup> The importance of services is similar to other advanced economies, whereas in developing and transition economies the agricultural and industrial sectors are normally more important (Figure 2.2).<sup>11</sup>

With a total trade value relative to GDP of over 40 percent, the European Union's openness to trade is greater than that of the United States (15%), Japan (17%) and Australia (25%).<sup>12</sup> As a result, its importance as a global market is large. Total EU imported goods are about US\$1.7 trillion, accounting for over 18 percent of total world trade (Figures 2.3 and 2.4).<sup>13</sup> The main import partners are China, the United States, Russia, Switzerland and Norway. Together these five countries account for 52 percent of EU extra-regional imports.<sup>14</sup> The ASEAN countries contribute 5 percent of all EU imports, with Indonesia accounting for 18 percent of that share. There are therefore large market opportunities for countries like Indonesia.

#### Highlights of the European Union

- The European Union (EU) is the largest economic power in the world. Its GDP represents 29% of total world output.
- The 27 member states have a population of 500 million.
- Supranational institutions harmonize key policy areas governing free movements of labor, capital, goods and services among members.
- Imports of the single market represent 18% of world trade.
- Five western European countries account for 70% of total EU income and have high consumption levels.
- The European Union is home for 45 of the world's 100 largest transnationals.
- Economic differences among member states provide a range of opportunities for foreign suppliers.
- Foreign companies networking with transnationals are providing higher value products that target the high-income consumers in those EU member states.
- Other foreign companies are directly supplying basic electronics, foodstuffs and consumer durables through-out Europe.

8. When first established under the Treaty of Rome in 1957, the European Economic Community (EEC) consisted of six member states. The Maastricht Treaty of 1993 defined the European Union (EU) and since then membership has grown to 27 countries. For details, see European Commission, "About the European Union". Available: [http://europa.eu/about-eu/index\\_en.htm](http://europa.eu/about-eu/index_en.htm).

9. Based on data for 2009 from International Monetary Fund, World Economic Outlook database (April 2010). Available: <http://www.imf.org/external/pubs/ft/weo/2010/01/weodata/index.aspx>.

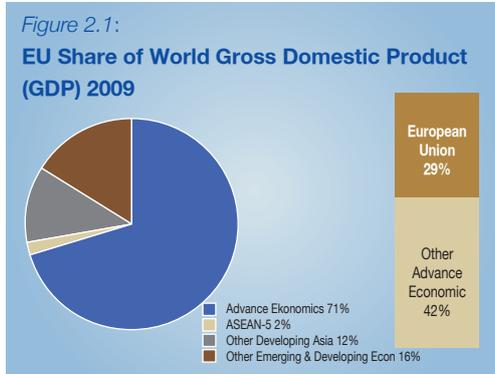
10. Based on data for 2009 from Eurostat and Available: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database).

11. Based on data for 2008 from UNCTAD, Handbook of Statistics Online. Available: [www.unctad.org/templates/Page.asp?intItemID=1890&lang=1](http://www.unctad.org/templates/Page.asp?intItemID=1890&lang=1)

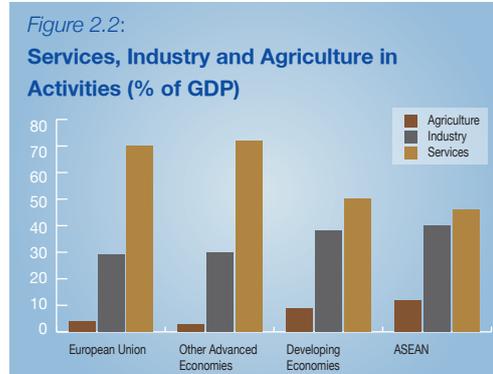
12. Trade to GDP ratio is estimated as an economy's total trade of goods and commercial services (exports + imports, balance of payments basis) divided by GDP, on the basis of data for the three latest years available. GDP is measured in nominal terms and with market exchange rates. The measure of openness is calculated using 2008 data, based on information from the OECD, "Country Statistical Profiles 2010". Available: <http://stats.oecd.org/Index.aspx?DataSetCode=CSP2010>.

13. Based on data from WTO Secretariat, Statistical Database. Available: <http://stat.wto.org/Home/WSDHome.aspx?Language=E>.

14. Based on data for 2009 from United Nations, COMTRADE database.



Source: Based on data from International Monetary Fund (IMF), *World Economic Outlook Datanbased*, April 2010



Source: Based on data from UNCTAD, *Handbook of statistics online*.

## 2.2 Structure of the EU Economies

The European Union expanded from its original six member states to nine members in 1995, and then to 27 members in 2004-2007. Convergence of purchasing power was achieved among those nine members in the early part of this decade, making differentiation among countries fairly negligible.<sup>15</sup> Today, however, there are fairly large differences among the original member countries and some of the new member states.

From Indonesia's perspective, there are two important differences across EU countries. The first is the size of the country in terms of economic output and openness to foreign trade relative to the corresponding measures for the entire EU market. These two measures do not necessarily correlate with one another (Figure 2.5). More than 70 percent of total EU economic output is accounted for by only five countries (Germany, France, the United Kingdom, Italy and Spain). Yet these same countries account for less than 20 percent of total extra-EU imports of goods. Instead over one-half of total extra-EU merchandise imports are absorbed by four relatively different countries (Denmark, Greece, Belgium and the United Kingdom). For Indonesia, this pattern of imports suggests the need to diversify and target the relatively larger importing countries than those having large economies.

The second difference among countries is the purchasing power of consumers. This distinction is important for exporters in Indonesia when targeting individual country markets within the European Union. Consumers in countries with high per capita incomes like Luxemburg, Netherlands and the United Kingdom tend to buy high-end products, while relatively low per capita income countries like Bulgaria and Romania tend to buy necessary goods and low-end products. China, for example, is producing and exporting electronic products to European countries with relatively low purchasing power in an effort to expand their sales of basic consumer electronics.

## 2.3 EU Internal Markets

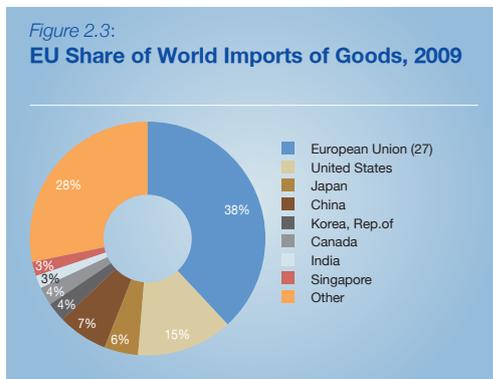
The European Union operates as a single market with free movement of production factors (labor and capital) and goods. Enterprises also operate across borders in the same way that they do within member countries. Liberalization of trade between member countries has been a major catalyst for the expansion of intra-EU trade, with the result that trade among EU member countries now represents 64 percent of their combined intra and extra-EU trade.

Common economic policies exist to eliminate physical (border), technical (standards) and

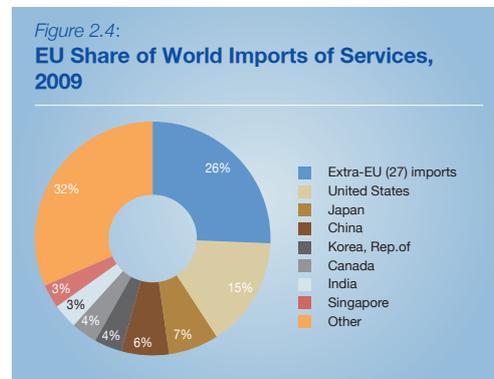
### Box 2.1: EU Member States

Austria	Germany	Netherlands
Belgium	Greece	Poland
Bulgaria	Hungary	Portugal
Cyprus	Ireland	Romania
Czech Rep	Italy	Slovakia
Denmark	Latvia	Slovenia
Estoria	Lithuania	Spain
Finland	Luxembourg	Sweden
France	Malta	United Kingdom

15. See V. Kaitila, "Convergence of Real GDP per Capita in the EU15: How Do the Accession Countries Fit In?"; European Network of Economic Policy Research Institutes. Working Paper No. 25, January 2004. Available: [http://aei.pitt.edu/1843/01/ENEPR1\\_WP25.pdf](http://aei.pitt.edu/1843/01/ENEPR1_WP25.pdf).



Source: Based on data from WTO Secretariat, International Trade Statistics.

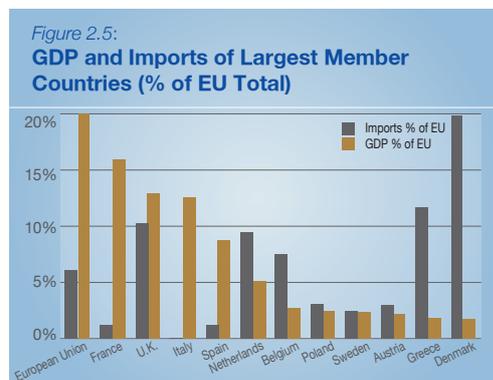


Source: Based on data from WTO Secretariat, International Trade Statistics 2009.

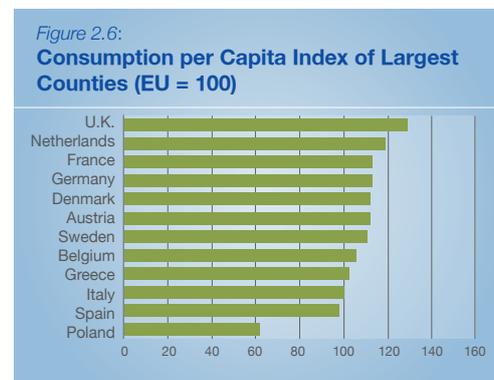
fiscal (taxes) barriers. The European Union has competence over commercial policy, agriculture and fisheries, consumer protection, transport, common public health concerns, and monetary policy for the Euro-zone countries. It also operates a competition policy, or antitrust law, intended to ensure undistorted competition in the single market. That competitive policy aims to prevent cartels, monopolies and other anti-competitive practices that could render competition ineffectual both within the European Union and from actual or potential foreign suppliers to the market.<sup>16</sup>

Individual member countries cannot exercise control in the areas where the European Union has competence. Nonetheless individual countries can exercise control in areas such as policies related to industry, tourism, and social issues like health and education. Differences within the European Union can therefore arise because of the existence of remaining economic sovereignty, especially for those countries outside the Euro-zone. The resulting variations among EU countries are important for Indonesia's suppliers to those markets in two ways. The first is in the differential demand for both inputs and consumer products across EU countries, and the second is in the supply sourcing of parts and components in value chains of multinational firms (MNFs) having distribution channels in Europe.

On the demand side, total consumption per inhabitant varies across EU member countries. Among the largest countries, however, there is considerable similarity in consumption levels (Figure 2.6).<sup>17</sup> The index of consumption per capita averages 102 relative to the European Union as a whole, although some countries like the United Kingdom and Netherlands have high consumption levels. On the lower end, inhabitants of countries like Bulgaria and Romania consume half the amount as the European Union as a whole. For Indonesian suppliers to the EU market, these differences provide an indication of the overall strength of demand within the internal markets, which can be used in combination with information about the demand for specific products of interest to the supplier.



Source: Based on data from European Commission, Eurostat database online.

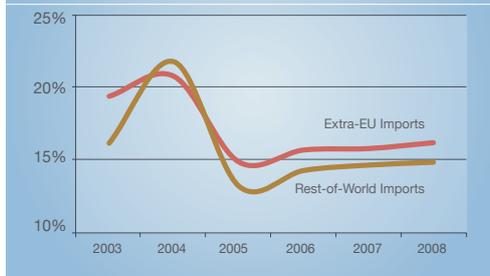


Source: Based on data from European Commission, Eurostat database online.

16. For details, see the European Commissions web site on competition laws and regulations in the European Union. Available: [http://ec.europa.eu/competition/index\\_en.html](http://ec.europa.eu/competition/index_en.html).

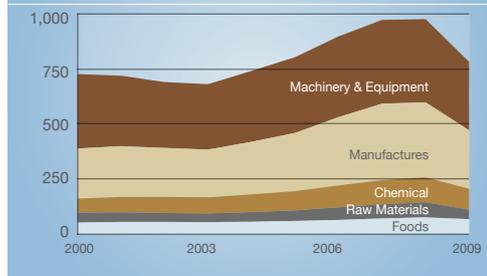
17. Measured by Actual Individual Consumption (AIC) per inhabitant. For details, see „Lars Svenneby, "Large differences in GDP and consumption per inhabitant across Europe". Eurostat Statistics in Focus, 95/2009. Available: [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-SF-09-095/EN/KS-SF-09-095-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-09-095/EN/KS-SF-09-095-EN.PDF).

Figure 2.7:

**EU and Rest-of-World Imports  
(Percent change of US dollars)**

Source: Based on data from WTO Secretariat.

Figure 2.8:

**EU Imports by Type (billions of Euros)**

Source: European Commission, Eurostat database online.

On the supply side, the European Union is home to 45 of the top 100 transnational corporations in the world.<sup>18</sup> The development of the EU single market and the rapid growth of South-East Asian economies have stimulated many of these transnational corporations to establish linkages with local producers in sectors that are of particular interest to Indonesia, for example, in chemicals, electrical equipment, food and beverage, motor vehicles, and pharmaceuticals. By integrating their supplies into global value chains, local Indonesian suppliers are increasingly becoming part of networks of cooperating firms that are involved in the full cycle of bringing a product to the final consumer. Arrangements between EU transnationals and local enterprises take the form of long-term contractual relationships, an equity arrangement, or outsourcing to local firms.<sup>19</sup>

## 2.4 EU Market Performances

The recent global financial crisis has given rise to concerns about Asia's strong trade and financial linkages with the EU and US markets.<sup>20</sup> Real GDP growth in the last ten years before the 2008 downturn averaged a modest 2.6 percent a year. Moreover, in 2008-2009 the 1.6 average annual contractions in the European Union were more severe than in most other areas of the world.<sup>21</sup> Despite its poor domestic economic performance, the EU market has remained robust from the point of view of foreign suppliers, as overall merchandise imports have grown faster than those of the rest of the world (Figure 2.7). Indeed, between 2003 and 2008 the growth in the value of imports of the European Union averaged 12.8 percent.<sup>22</sup> At this rate, EU imports outpaced those of the United States, Canada and Japan, and its import growth following the 2008 global financial crisis still continued to substantially exceed that of the other industrialized countries.

The European Union's leading import sectors have been machinery and equipment, manufactures and, to a lesser extent, chemicals (Figure 2.8). Although raw material and foods represent a relatively small proportion of total imports, both of these sectors have experienced strong growth in the last decade. For every one percent increase in household incomes of the European Union, the overall demand for imports of goods and services has increased by 1.5 percent.<sup>23</sup> But there has been considerable variation among the different types of goods imported. Chemical imports have experienced the highest response to income changes (1.8% expansion for every one percent increase in income), followed by manufactures and raw materials (both 1.6%), while foods have a relatively small responsiveness of 1.2 percent for every one percent change in EU income.

18. UNCTAD, Foreign Investment Report 2009. Geneva, 2010. Annex A: Table A.I.11. Available: [http://www.unctad.org/sections/dite\\_dir/docs/wir2009top100\\_dev\\_en.pdf](http://www.unctad.org/sections/dite_dir/docs/wir2009top100_dev_en.pdf)

19. For details of the EU international sourcing, including a survey according to generic business functions, see European Union, International Sourcing. Available: [http://epp.eurostat.ec.europa.eu/portal/page/portal/european\\_business/special\\_topics/international\\_sourcing](http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/special_topics/international_sourcing).

20. For a recent review from the Asian perspective, see M. Lord, "Is Asian Integration Sheltering the Region from the Crisis?". Background Discussion Paper for DG ECFIN 6th Annual Research Conference: Crisis and Reform. December 2009.

21. Based on data for 2009 from International Monetary Fund, World Economic Outlook database (April 2010). Available: <http://www.imf.org/external/pubs/ft/weo/2010/01/weodata/index.aspx>.

22. Based on data from WTO Secretariat, Statistical Database. Imports of the European Union refer to extra-EU imports. Available: <http://stat.wto.org/Home/WSDBHome.aspx?Language=E>.

23. Estimates of the so-called „income elasticities of demand for imports“ are based on log-linear estimates of extra-EU imports and GDP in 1999-2008 for total imports and major product categories.

Indonesia's decline in its share of exports to the European Union in the last decade was paralleled by similar declines in the US and Japanese markets. While the share of exports to the EU market fell from 18 percent to 14 percent, that of exports to the US and Japanese markets fell from 23 to 16 percent and 14 to 9 percent. Together these three markets had absorbed nearly 55 percent of Indonesia's exports in 2000 and by 2009 that share had fallen to under 40 percent. The bulk of this trade was diverted to the ASEAN regional market.

## 2.5 Regulatory Environment

### 2.5.1 EU Institutions and Decision-Making Processes in Trade-Related Matters

The European Union (EU) is a treaty-based, institutional framework that defines and manages economic and political cooperation among its 27 member states. The European Commission (EC) acts as the executive of the European Union. It is responsible for proposing legislation, implementing decisions, upholding the Union's treaties and the day-to-day running of the European Union. The Commission is based in Brussels, but it also has offices in Luxembourg and representations in all EU member states. The role of the European Commission is to represent the common European interest to all the EU countries by participating in the decision-making process, including presenting proposals for European law, overseeing the correct implementation of the Treaties and European law, and carrying out common policies and managing funds. The Commission is also responsible for putting the European Union's common policies like the Common Agricultural Policy into practice and managing the European Union's budget and programs. The Directorate General for Trade of the European Commission is in charge of implementing the common trade policy of the European Union.

The Treaty on the European Union (as amended by the Treaty of Amsterdam and the Lisbon Treaty) sets down rules for situations where some Member States wish to proceed with cooperation in a specific area. This is known as 'enhanced cooperation'. Enhanced cooperation means that a group of countries can act together without all 27 necessarily participating. It allows Member States to remain outside if they do not wish to join, without stopping other Member States from acting together. Examples of enhanced cooperation include the Euro zone and the Schengen agreement.<sup>24</sup> The Lisbon Treaty, which came into force in December 2009, reforms the European Union's governing institutions and decision-making processes to enable the larger European Union to operate more effectively.<sup>25</sup> One of the main objectives of the Lisbon Treaty is to increase the coherence and the efficiency of the European Union's external action. To that end, the Lisbon Treaty brings the current European Commission's external trade policies together in a more comprehensive manner. All elements of the EU's external action are now submitted to the same principles and objectives, which include inter alia human rights, good governance, environmental protection and sustainable development. It implies that in formulating its trade policy, the Commission must not only consider the economic liberalization agenda, but also other objectives.

To increase the accountability of the EU trade policy, the Lisbon Treaty gives more power to the European Parliament in scrutinizing trade policy.<sup>26</sup> EU legislation for implementing trade policies will now be co-decided by the European Council and the European Parliament.<sup>27</sup> Furthermore, the Commission has to report regularly to the Special Committee of the EP on the progress of trade negotiations, and more importantly, the Parliament must give consent before a trade agreement can be adopted. However, powers to authorize the Commission to engage in trade negotiations belong exclusively to the Council.

24. See [http://europa.eu/legislation\\_summaries/justice\\_freedom\\_security/free\\_movement\\_of\\_persons\\_asylum\\_immigration/l33020\\_en.htm](http://europa.eu/legislation_summaries/justice_freedom_security/free_movement_of_persons_asylum_immigration/l33020_en.htm)

25. This material draws on <http://www.eucentre.sg/articles/141/downloads/LisbonImpactonTrade-rev6Mar.pdf>

26. The European Parliament consists of 785 members elected in each member state for five-year terms. The Parliament cannot enact laws like national parliaments, but it shares "co-decision" power in some areas with the Council of Ministers and can amend or reject the EU's budget.

27. The Council of the European Union (Council of Ministers) is comprised of ministers from the national governments. As the main decision-making body, it enacts legislation based on proposals put forward by the Commission.

Since the implementation of the Lisbon Treaty, trade in goods and services, commercial aspects of intellectual property and foreign direct investment all fall under the exclusive competence of the European Union. Member states (MS) are no longer able to conclude its own bilateral investment treaties (BIT) unless they are empowered by the European Union to do so. All these changes to bring trade in goods and services and FDI under the exclusive competence of the EU are expected to contribute to a streamlining of the trade policy. Future trade agreements concluded by the European Union are likely to be comprehensive economic agreements covering all aspects of trade and investments.

## 2.5.2 Regulations and Restrictions on EU Imports

The EU market is often regarded as difficult to enter because of its regulations and restrictions on imports. Proponents of this view argue that the proportion of Indonesia's exports directed to the European Union has fallen from around 14 percent at the beginning of the decade to around 10 percent at present as exporters seek easier markets. Indonesia's declining share of exports directed to the EU market is, however, more a reflection of growing intra-ASEAN trade than it is of EU market access difficulties. Its exports to ASEAN member countries plus China have risen from 23 percent in 2000 to around 30 percent presently.<sup>28</sup> Because of this phenomenon, there has been a substantial decline in the proportion of Indonesia's total exports directed not only to Europe, but also North America, Japan and other regions of the world.

The European Union's trade regime comprises tariff and non-tariff measures. The average ad valorem MFN tariff is 6.7 percent, with the highest rates applying to agricultural products. However, there are wide ranging preferential trade arrangements with non-ad valorem rates applying to about 10 percent of all tariff lines, mainly for agricultural products. These same products are in many instances subject to tariff quotas. Value-added tax and excise duties apply to imports and locally produced goods, but the rates are not harmonized among member countries. Customs procedures are applied uniformly across member countries based on a new Modernized Customs Code (MCC) that is being implemented between 2009 and 2013.

Requirements covering security, technical, sanitary, phytosanitary, environmental and other regulations are generally harmonized among EU member countries. Import licenses exist in cases where products are subject to quantitative restrictions, tariff quotas, safeguards or import monitoring and surveillance. Some non-agricultural products, including textile products, are subject to quantitative restrictions. According to the WTO Secretariat, there are about 140 technical requirements applied by the European Union and individual member state governments.<sup>29</sup> The following are the general regulations and requirements of major interest to Indonesia exporters:<sup>30,31</sup>

- **Food and Feed Safety:** The EU legislation on food safety protects human health and consumers' interests. Animal feed regulations ensure the protection of both human and animal health as well as environmental protection. Importers of food and feed products must register the product source and country of origin in order to comply with traceability requirements. They must also report any residues, pesticides, veterinary medicines and contamination with trace substances in food. Special rules apply to genetically modified food and feed as well as foodstuffs for particular nutritional purposes. Food and feed safety also incorporates marketing and labeling requirements. The European Commission can implement protective measures when there is a possibility that a product can represent a serious risk to human or animal health or the environment. In some cases, enforcement of these measures includes the suspension of imports.
- **Environment Protection:** The EU considers the environment a central priority, and all relevant EU policies therefore incorporate environment protection standards. There are four primary areas of concern: climate change, nature and biodiversity, environment and health, and sustainable

28. Based on data from ASEAN Secretariat external trade statistics. Available: <http://www.aseansec.org/18137.htm>.

29. WTO Secretariat, "Trade Policy Review: Report of the Secretariat. European Communities, Revised". Geneva, 8 June 2009, WT/TPR/S/214/Rev.1.

30. Information based on European Commission Helpdesk for developing countries. Available: [exporthelp.europa.eu](http://exporthelp.europa.eu).

31. Further details on the industries covered by this study are presented in Chapter 7 on market access issues for Indonesian exports and in the industry-specific annexes.

management of natural resources and waste. These areas of concern may affect Indonesian exporters particularly in the following aspects:

- **Chemicals:** Imports of certain dangerous chemicals and persistent organic pollutants (POPs) are subject to control measures. The Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) system was implemented in December 2006, and it applies to all chemicals. The European Chemicals Agency (ECHA) is responsible for the implementation of REACH in a manner that ensures consistency in the management of chemicals across the European Union.
- **Classification, Packaging and Labeling of Dangerous Substances and Preparations:** The European Commission requires the identification, labeling and packaging of the intrinsic chemicals hazards in manufactured or imported products.
- **Plant Protection Products and Biocidal Products:** The European Commission authorizes the placing of a plant protection product in the EU market, and biocidal products are subject to specific entry requirements.
- **Packaging Waste:** Another concern is the packaging waste of imports. The European Commission establishes requirements about the composition and re-use of packaging of products to be marketed in the European Union. Packaging must have appropriate markings to identify the purpose and nature of its packaging materials.
- **Waste Electrical and Electronic Equipment (WEEE):** Prevention of hazardous waste and the promotion of reuse, recycling and other forms of recover in electrical and electronic equipment
- **Marketing Standards for Agricultural and Fishery Products:** For agricultural and fishery products, the European Commission has established marketing standards to assure the same level of quality for all fresh agricultural and fishery products in the EU market. Agricultural products standards require that products be fresh and have a minimum level of tolerance. Fishery products must comply with marketing standards on quality, size or weight, packing, presentation and labeling. Imported agricultural and fishery products must also comply with marketing standards through documental and physical inspections. As a voluntary scheme, organic production is subject to regulations on organic farming, which aims to provide environmental conservation and to promote quality products. If they meet organic standards, organic products can display the EU farming logo, which classifies the product as having satisfied organic standards.
- **Product Safety:** Any products to be imported into the EU must comply with regulations of General Product Safety. Manufacturers and distributors are required to inform consumers of any potential product risks. They must also notify the appropriate authorities of hazardous products. The General Product Safety Directive applies to sectors like cosmetics, pharmaceuticals, and industrial products (for example, chemicals and electrical equipment). Inedible products that could be confused with food by their appearance, smell or packaging cannot be marketed, imported or manufactured in the European Union.
- **Technical Standardization:** Technical harmonization aims to remove technical barriers. Since 1985 a new approach to technical harmonization and standards applies general rules, conformity assessment procedures, and the CE marking. The New Approach Directives address health and safety requirements, while the Global Approach Directives establish conformity assessment procedures. Certain sectors are still covered by the Old Approach Directives, including foodstuffs, motor vehicles, chemicals, cosmetics, detergents, biocides and pharmaceutical sectors. The modernization under the New Approach is intended to remove any obstacles to the circulation of products, while ensuring product safety in the EU market.

Three independent standardization bodies are charged with the implementation of the New Approach Directives: the European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC) and the European Telecommunications Standards Institute (ETSI). The directives are limited to the essential requirements of the EU market, like health,

safety, consumer and environmental protection. However, the application of harmonized standards is voluntary. Global Approach Directives set up procedures that evaluate whether the conformity of products comply with the essential requirements of the technical harmonization directives. The conformity assessment is conducted by the manufacturer or an independent agent.

Producers can affix the CE marking on their products to indicate compliance with the essential requirements of all applicable directives and their completion of the conformity assessment procedure. This process enables them to place their products in the EU market. Each Member State is responsible for checking whether the products use the CE marking correctly. Surveillance of the use of the CE marking on products is conducted through documentary checks and/or physical inspections.

- **Packaging:** The general requirements on packaging aim to protect the environment and consumer health. They cover recycling materials, packaging waste prevention, size, nominal quantities and capacities, and the composition and constituents of materials that come in contact with foodstuffs. Any packaging made of wood or other plant products is subject to phytosanitary measures.
- **Labeling:** The EU labeling requirements aim to protect consumers' health and provide information to end users. Imported products must comply with labeling requirements in order to be marketed within the European Union. The EU Eco-label (a "Flower logo") is a voluntary label affixed on products. It plays a significant role in improving key environmental aspects and advising consumers about the environmental impact of its products.

## 3 Indonesia's Exports to the European Union

### 3.1 Export Structure and Performance

Indonesia shares a number of similarities with the fast-growing East Asian economies like China, South Korea and Taiwan that have relied on export-driven growth for their industrial development. Like them, Indonesia has a large population size and abundant natural resources. Nevertheless, Indonesia has registered one of the lowest export-to-GDP ratios in all of Asia (Table 3.1), and there has not occurred a transformation of production processes in a manner that generates high-value exports. Non-fuel exports remain largely unprocessed and manufactured exports are concentrated in low-tech products. Reliance on basic commodity exports has produced few linkages and a low economy-wide multiplier effect from exports.

A second feature of Indonesia's exports is their modest performance. In the past decade the country's 9 percent average annual growth rate of non-fuel exports has substantially underperformed the 15 percent annual export growth of the fast growing Asian economies. With existing natural resource and population similarities, globalization should have reduced technological differences between countries and supported export growth convergence.

However, industrial concentration or so-called agglomeration of industries has occurred in other fast-growing East Asian economies rather than in Indonesia, thereby reducing value adding activities and linkages among different sectors of the economy.

The third characteristic that emerges from the previous one is the increased specialization of activities that have resulted from enhanced trading arrangements among ASEAN+3 countries. Use of Indonesia's natural resources in their unprocessed forms has allowed other countries to move up their value chains and produce greater quantities of agro-industrial products and high-tech products. Like other ASEAN countries, this phenomenon is reflected in Indonesia's increasing proportion of export destined to ASEAN partner countries (from 10 percent in 1990 to 21 percent in 2009), and the declining proportion directed at the Triad economies, that is, the European Union, the United States and Japan (Figure 3.2). Within the

Triad, Indonesia's share of exports to the European Union and the United States were fairly stable throughout the 1990 (each at around 14 percent of total exports), but for the United States that share declined to 9 percent by 2009, whereas for the European Union the share only fell to 13 percent. In contrast, the proportion of Indonesia's exports destined to Japan has dropped dramatically in the last 20 years, from 27 percent of total exports in the mid-1990s to 16 percent in 2009. At the same time, the shift away from the EU and other Triad markets has reduced the need for quality controls

#### Highlights of Indonesia's Export Performance

- Indonesia shares a number of similarities with the fast-growing East Asian economies like China, South Korea and Taiwan, like a large population size and abundant natural resources. However, while these fast-growing economies have relied on an export-driven growth for their industrial transformation, Indonesia's reliance on basic commodity exports has produced few economic linkages and a low economy-wide multiplier effect from exports.
- Indonesia's export growth in the last decade has been modest by East Asian standards. Globalization usually reduced technological differences between countries. But in the case of Indonesia, limited agglomeration of industries has prevented export growth from converging with other East Asian countries.
- The larger proportion of Indonesia's exports directed to ASEAN+3 countries have allowed trading partners to move up their value chains by relying on Indonesia's natural resources. In contrast, Indonesia has experienced little, if any, downstream expansion in production activities.
- The smaller proportion of Indonesia's exports directed at the EU and other Triad markets has reduced the need for quality controls and associated EQI measures.

Table 3.1: Indonesia and Selected Asian Countries, 2000-2009 (average annual growth)

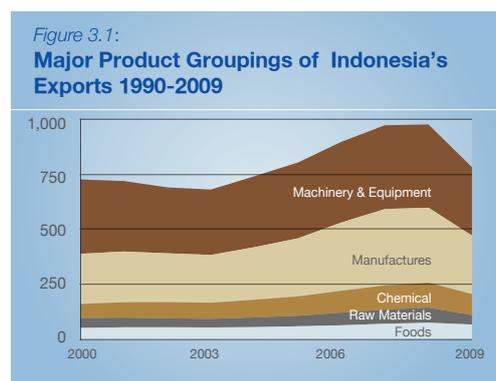
	GDP	Total Non-Fuel Exports	% Export-to-GDP in 2009
Indonesia	5.1%	9.0%	22%
Singapore	4.9%	10.0%	152%
Malaysia	4.7%	7.2%	82%
Viet Nam	7.3%	17.1%	61%
Thailand	4.1%	10.7%	58%
South Korea	4.4%	10.6%	52%
China	9.9%	20.2%	24%
India	7.0%	16.9%	10%

on exportable production activities that would otherwise be required to enter those markets. Unlike Indonesia, China has shifted its production to higher-value products and increased the share of its exports destined to the EU market, improving quality controls and standards on its products to meet the essential standards in the European Union.

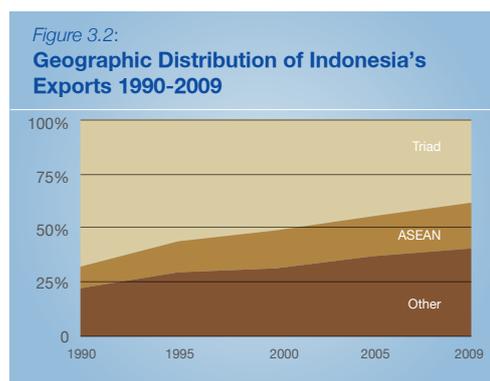
The final noteworthy feature is Indonesia's continued reliance on unprocessed exports. Based on conventional classification of goods according to stages of production, nearly 40 percent of the country's non-fuel exports are in the form of unprocessed goods (Figure 3.3).<sup>32</sup> In contrast, the fast-growing East Asian Economies concentrate a much larger proportion of their exports on manufactured products than does Indonesia (Figure 3.4).

### 3.2 Indonesia's Exports to EU Countries

There have been important shifts in Indonesia's exports among the EU member states. At the beginning of this decade, the United Kingdom was Indonesia's second most important market after the Netherlands. By 2009, however, the United Kingdom ranked as the sixth most important market and Germany had taken the second place position. Italy's absorption of Indonesian exports to the European Union rose from 8 to 12 percent during the period. Spain now ranks as the third most important market, having increased its share from 10 to 13 percent.



Source: United Nations, Comtrade database.



Source: United Nations, Comtrade database.

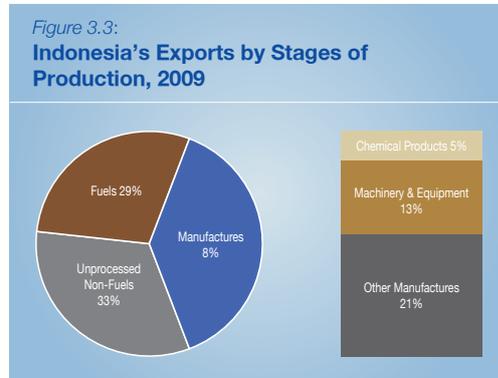
Perhaps more significant than these shifts over the long run has been the enlargement of the EU market. Ten countries joined the European Union in 2004 and another two members joined in 2007. These countries were all from Eastern Europe and already existed as exports markets for Indonesia. Following their incorporation into the European Union, Indonesia's exports to them expanded from 3 to 5 percent of all exports to the EU market as a whole.

The combination of these changes has impacted on the economic growth differentials among EU member states, the types of goods imported by different member states, especially between the larger and more advanced Western European countries and those in Eastern Europe, and the responsiveness of demand for foreign goods associated with changes in domestic incomes.

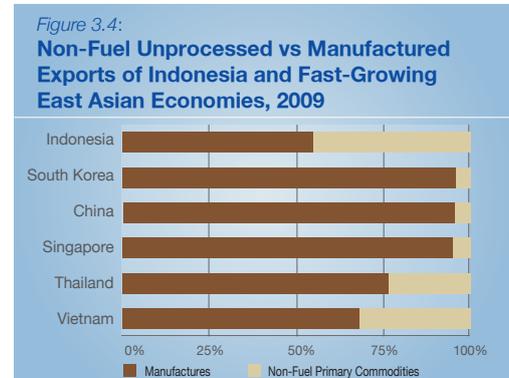
### 3.3 Indonesian-EU Trade Compatibility

One way to identify potential trade opportunities for Indonesian exporters in the EU market is to measure the degree of compatibility between Indonesia's exported products and those products imported by the European Union. Having established compatibility of traded products, it is then possible to apply performance indicators to reveal the extent to which Indonesian exporters have effectively competed in different EU product markets. Success in export markets – measured by rapidly expanding exports and rising market shares – provides guidance on the way that Indonesia could develop fast-growing exports into the EU market.

32. Based on Indonesia's exports using the SITC system, which classifies products according to stages of production. Unprocessed non-fuel products are SITC 0+1+2+4+68+667+971; fuels are SITC 3; manufactured goods (are ITC 5 to 8 less 667 and 68).



Source: United Nations, Comtrade database.



Source: United Nations, Comtrade database.

The analysis of Indonesia's trade compatibility with the European Union covers (a) all non-fuel exports of Indonesia; (b) product-specific performance measures at the 4-digit Harmonized System (HS) level;<sup>33</sup> and (c) data analysis based on the last 10-year period for which data are available. The products are divided into the following three types: (a) large non-fuel exports, defined as those non-fuel products that generated at least US\$500 million in the most recent year for which data were available (there were 27 products in this range); (b) *medium-size exports*, whose non-fuel product export value represented between US\$250 and 499 million (there are 43 products in this range); and (c) *small-size exports* of between US\$150 and 249 million (there are 42 products in this range). The resulting 112 products represent 50 percent of Indonesia's total non-fuel exports.

The *trade compatibility index* measures the similarity between Indonesia's exported products and products imported by the European Union.<sup>34</sup> The index approaches zero when Indonesia exports none of what the European Union imports, and it approaches unity when the exports share of product *i* of Indonesia is identical to the import share of that product by the European Union. The index of compatibility is usually between 0.50 and 0.60 for trade between industrialized countries, and it averages about 0.20 for trade between developing countries.<sup>35</sup>

In the case of Indonesia's export patterns and EU imports patterns, the index of trade compatibility across products equals 0.53, suggesting a relatively high degree of compatibility. However, there is greater compatibility among the medium and smaller size exports than among Indonesia's large traditional exports like processed and unprocessed palm oil, rubber and copper ores (Table 3.2). These aggregate results, however, obscure a number of cases where Indonesia's traditional raw material exports are indeed compatible with EU import patterns, a situation demonstrated in the section below matching high-growth exports with dynamic EU imports. The category of smaller-size exports includes a broad set of products that range from fishery products and spices to jewelry, textiles, machinery parts and electrical appliances. There are also a large number of products that are highly compatible with EU import requirements among the large and medium-size exports of Indonesia, including processed food products, wood joinery and carpentry products, plywood, and wooden furniture.

**Table 3.2: Trade Compatibility Index between Indonesian Exports and EU Imports**

Indonesian Exports	Index
Large-Size	0.30
Medium-Size	0.70
Emerging	0.59

Note: see text for explanation.

33. Disaggregation at the HS 6-digit level yielded excessively high year-to-year variations and therefore poor trend performance indicators.

34. The index of compatibility (Cx/m) is computed using the following formula:  $Cx/m = 1 - (\sum |x_{id} - m_{us}|)/2$ , where  $x_{id}$  is Indonesia's share of good *i* exports relative to its total exports, and  $m_{us}$  is the share of EU good *i* imports relative to its total imports.

35. Michaely, M. (2000), "Trade Expansion in the Andean Group". Mimeo. Washington, DC, The World Bank.

### 3.4 Indonesia's Exports of the European Union's Top Imports

Another way to measure export opportunities to the EU market is to examine whether Indonesia is exporting the types of products most demanded by consumers and manufacturers in the European Union. Table 3.3 shows a mapping of the European Union's top non-fuel imported products with the importance of those same products to Indonesia's exports. There are just over 100 products that in 2009 jointly ranked among the top 1000 EU imports and account for at least US\$100 million of Indonesia's exports to all destinations.

The sectors having the largest number of matching EU imports and Indonesian exports are machinery and electronic equipment, textiles, transport equipment and chemical products. Together these four sectors account for 60 percent of the top imported products that are important exports of Indonesia. Other sectors having Indonesian product exports matching the top EU imports are plastics, rubber, base metals, pulp and paper, and prepared foods.

### 3.5 Matching High-Growth Exports with Dynamic EU Imports

The third way to measure export opportunities to the EU market is to examine whether Indonesia's exports have been directed at dynamic product markets and, if so, whether exporters have been expanding their activities in those markets. The potential growth of firms and industries in the world market and the EU market in particular are reflected in high rates of export growth and rising market shares. This type of analysis is suggestive of the actual or potential penetration into dynamic markets for Indonesian exporters.<sup>36</sup>

#### 3.5.1 Measuring Penetration in Different Types of Markets

Indonesia's export growth in different types of product markets in the EU market has been measured by the trend growth rate of product exports in the three product categories (large, medium and smaller exports), and the ratio of product exports relative to EU imports of those products. The export performance of Indonesia has been classified into the following four categories:

- **Exploited Market Opportunities:** Products in which Indonesia has a rising market share and EU imports are expanding.
- **Increased Penetration in Stagnating Markets:** Products in which Indonesia has a rising market share but EU imports are contracting.
- **Missed Markets Opportunities:** Products in which Indonesia has a falling market share despite expanding EU imports.
- **Reduced Penetration in Stagnating Markets:** Products in which Indonesia's market share is falling and EU market is contracting.

**Table 3.3. Summary of Matched between EU Top 1000 Import and Top Products on Indonesian Export (exceeding US\$100 mils US\$) in 2008**

	HS Section	Product Matches a/
1+2	Animal and vegetable	2
3	Fats and oils	3
4	Prepared foods	5
5	Mineral products	8
6	Chemical products	7
7	Plastics and rubber	7
9	Wood & its products	4
10	Pulp and paper	6
11	Textiles	15
12	Footwear	2
14	Semi-precious stones	3
15	Base metals	7
16	Machinery & equip.	23
127	Transport equipment	8
20	Misc manufactures	2
	<b>Total</b>	<b>102</b>

Source: Derived from data in United Nations, COMTRADE database.

36. The methodology was developed by the United Nations Economic Commission for Latin America (ECLAC) and applied to its Competitiveness Analysis of Nations (TradeCAN) software. Available: [http://extop-workflow.worldbank.org/extop/e-commerce/catalog/product?context=drilldown&item\\_id=893378](http://extop-workflow.worldbank.org/extop/e-commerce/catalog/product?context=drilldown&item_id=893378)

The most desirable situation is for Indonesian exporters to be involved in either exploited market opportunities, where their products have made headway into dynamic markets, or missed market opportunities, where there is strong export growth potential if they improve their competitiveness and satisfy market access requirements.

### **3.5.2 Indonesia's Smaller-Size Exports**

Among Indonesia's relatively smaller-size exports, machinery parts are the predominant type of products with rapidly growing EU markets where Indonesian producers have increased their penetration (Figure 3.5). Import growth rates in the European Union have ranged from 10 to 15 percent a year for these products, while Indonesia's exports have grown between 25 and 50 percent a year during the last decade. Among the rapidly growing markets where Indonesian exporters have lost market shares because of sluggish exports are fresh and processed fish and foods, footwear, jewelry, and bicycle and motorcycle parts. In contrast, exports have grown rapidly in markets with relatively slow or stagnant EU markets, notably fresh animal products, rubber articles, and low-tech machinery and electronic products. Finally, stagnant EU markets with slow-growing Indonesian exports include fresh and chilled fish, cement, plastics and paper.

### **3.5.3 Indonesia's Medium-Size Exports**

Among medium-size exports, processed foods, chemicals, textiles and machinery and electronic equipment have high-growth EU markets where Indonesian exporters have increased their market penetration. Other fast-growing EU markets where Indonesian exporters have failed to increase their market shares are cocoa products (processed foods); acyclic alcohols, soaps and amino-compounds (chemicals), plastic containers (plastics); t-shirts; electric motors and generators and television and radio parts (electronics); and seats (furniture). Indonesian exporters have increased rapidly in a number of slow or stagnant EU markets: prepared crustaceans and mollusks, cigars and cigarettes, plastic plates, footwear with uppers of textiles, electric transformers and accumulators, radios and electrical switches. In other stagnating markets like those of finished clothing, batteries, low-tech audio equipment, and plastics, Indonesian exporters have reduced their market shares.

### **3.5.4 Indonesia's Large-Size Exports**

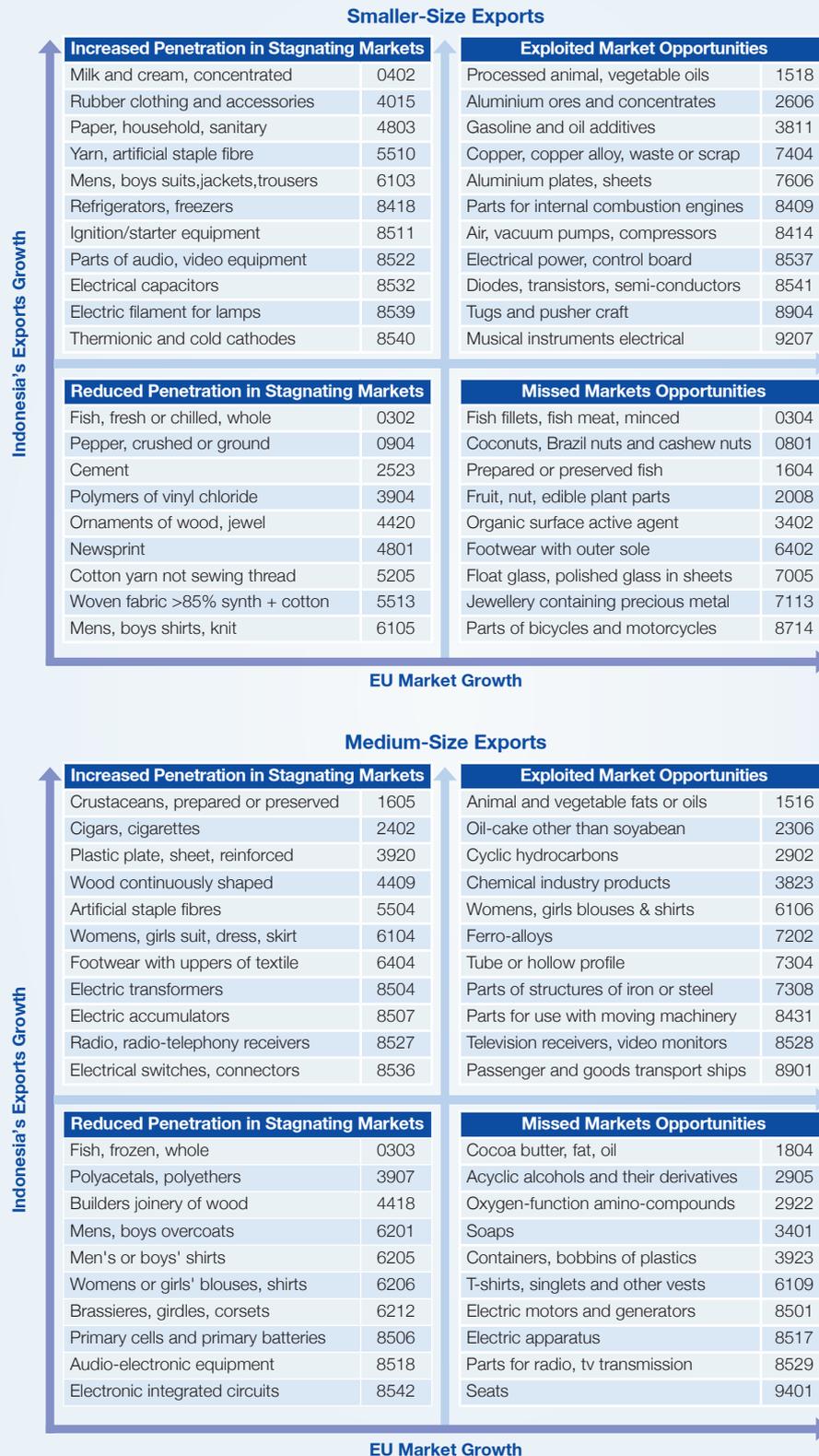
Among large-size exports, parts for motor vehicles, refined copper and nickel metallurgy, tires, copper ore and concentrates and palm oil have fast-growing EU markets where Indonesian exports have also expanded rapidly. In contrast, Indonesian exports have been sluggish in the fast-growing markets for furniture, motor vehicles, unprocessed crustaceans, coffee, plywood, footwear with leather uppers. Exports have, however, expanded rapidly in several slow-growing or stagnant EU markets: margarine and fatty acids (animal and vegetable fats); cocoa beans; nickel ores; ammonia (chemicals); iron rods and copper wire (minerals); and wire insulation.

### **3.5.5 Emerging Patterns**

The pattern that emerges is one in which certain sectors like prepared foods, high-tech machinery and electronic equipment, and transportation equipment have strong growth markets in the European Union, while other markets are mixed. In those markets without a clear sector-wide growth pattern, there exist strong markets for some furniture and other wood products, different types of footwear, certain chemical products, and jewelry. In general, primary commodities have less dynamic markets than processed goods, as for example in the case of unprocessed fruits and vegetables versus processed food products, unprocessed versus processed metals, minerals and chemicals, and lumber and unfinished wood versus wood products and furniture.

Figure 3.5:

### Matching High-Growth Indonesian Exports with Dynamic EU Import, 2000-2009





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remained concentrated in largely unprocessed products. The affected sectors include agricultural and fishery products, mining, low-skilled manufacturing activities like labor-intensive footwear products and medium to low-tech electronic equipment and machinery parts. These activities have been supported by a relatively lower skilled labor force, limited technicians involved in research and development, and obstacles to cross-border investment activities of multinational enterprises. Together they have combined to limit knowledge transfer and facilitate increase market access and export growth opportunities in high-value products. To ameliorate these conditions and reverse the current pattern of production, shift to technology-led growth is needed as a means of moving the production base to high value-adding activities.<sup>37</sup> That process would be supported the development of appropriate export quality infrastructure needed to meet quality and regulatory standards of high value-adding activities for markets in the European Union and elsewhere.

Indonesia has an excellent opportunity to broaden its export base and accelerate exports to the European Union. One way to identify obstacles and opportunities for the country is to examine a set of industries that are representative of the types of activities that could be promoted as a means of not only expanding exports, but also generating greater value added for the country. In the chapter that follows, we identify some industries that are representative of such opportunities, and in subsequent chapters examine the situation confronting exports from those industries to the EU market.

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37. See, in particular, Wing Thye Woo and Chang Hong, "Indonesia's Economic Performance in Comparative Perspective, and a New Policy Framework for 2049". Available: <http://www.econ.ucdavis.edu/faculty/woo/SEA%20for%20webpage/2010-1-1.Woo.Indonesia-Need%20for%20New%20Policy%20Framework.pdf>.

## 4 Selection of Focal Sectors and Industries

### 4.1 Selection Criteria and Decision-Making Process

The present chapter builds on the previous analysis and other selection criteria to identify, measure and rank the focal sectors for the Study. The first step in the selection process is the identification of criteria to be used for the ranking and selection of the sectors and industries. These criteria are based on the following set of factors:

- **Factors Related to National Development Objective** – The principal determinant for inclusion is the prioritization of the sector in Indonesia's Medium Term Development Plan for 2010-2014 (RPJM 2010-14). There are sectors explicitly identified as priority activities in the RPJM 2010-14, and there are several development objectives related to (a) adding value to the economy, (b) introducing innovative methods, (c) providing downstream opportunities, (d) strengthening small and medium size enterprises (SMEs), and (e) reducing poverty by generating employment opportunities and offering support to micro and small enterprises (MSEs).
- **Factors Related to Foreign Market Determinants** – There are two sets of criteria that underlie Indonesia's actual or potential penetration of the EU market. The first relates to sectoral growth patterns and import demand responsiveness to economic activity in the European Union; and the second relates to the conditions affecting the ability of Indonesian producers to access the EU market.
- **Factors Related to International Competitiveness and Internal Factors** – The ability of Indonesian producers to effectively compete for market shares of the European Union is determined by (a) the compatibility of Indonesia's exports with EU imports, (b) the strength of institutional support mechanisms to help producers compete in the market, and (c) the export quality infrastructure (EQI) opportunities for adding value to exports, that is, for moving the country from a concentration on unprocessed primary commodity exports, to agro-industrial and manufacturing activities in increasingly sophisticated product exports.

Table 4.1 summarizes the criteria used to identify and score sectors and industries for possible coverage by the Study. In most cases, each criterion has been given equal weight when summing across ratings. The exception is the criterion on the importance of EQI issues for export development, an area of potential support from development partners. For this reason, the EQI-related score was given the same weight as the combination of the three other competitiveness factors related to trade compatibility and strength of domestic business associations.

The decision-making process adopted to prioritize sectors and industries is summarized in Figure 4.1. The first row provides the aforementioned criteria sets used for the selection and ranking

*Table 4.1: Criteria for Ranking and Selection of Sector and Industry Coverage by Study*

A. Factors Related to National Development Objectives	
1	Priority sector for the Government of Indonesia
2	Value adding to the economy and potential for incorporation of innovation
3	Downstream Opportunities
4	Strengthening small and medium-size enterprises (SMEs)
5	Poverty impact in terms of employment plus micro and small enterprise (MSE) support
B. Foreign Market Determinants	
6	Income elasticity of import demand $d/$
7	Extent of EU non-tariff barriers (NTBs) to imports $i/$
C. International Competitiveness and Internal Factors	
8	Trade Compatibility between Indonesia's Exports and EU Imports
9	Indonesia's exports over US\$100 million that match EU's top 1000 imports
10	Strength of domestic business and trade associations
11	Importance of EQI issues for export development

process. The second row contains the decision steps to identify, rank and prioritize sectors. The third row comprises the steps involved in identifying and ranking industries.

For sectors, the process involves the following steps:

**Step 1:** Determine whether a sector is (a) a priority export sector, (b) a priority sector for revitalization of the industrial sector, or (c) a priority sector of government ministry. In scoring the sectors, (i) 10 points are given to sectors that are priority export sectors in RPJM 2010-14; (ii) 8 points are assigned to sectors for revitalizing industrial activity in RPJM 2010-14; (iii) 5 points are assigned to wood products and furniture as special inclusive cases.

**Step 2:** Sectors that meet the prioritization criteria in Step 1 are retained for further consideration; others are excluded.

**Step 3:** Determine the extent to which a sector meets development objectives defined under RPJM 2010-14 criteria, which are related to value adding, innovation, SME/MSE support, poverty reduction, and employment generation. Score the contribution of each sector to the specific development objectives on a scale of 1 to 10, with 10 being the best score.

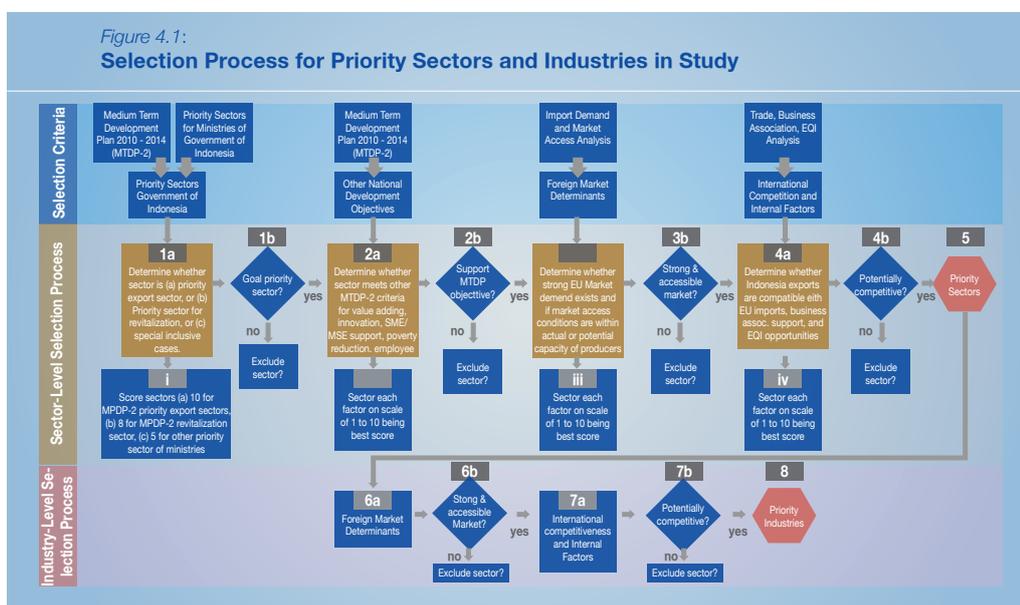
**Step 4:** Determine whether strong EU market demand exists and whether market access conditions are within actual or potential capacity of producers. Use quantitative techniques to measure and normalize scoring on a scale of 1 to 10.

**Step 5:** Determine whether existing exports of Indonesia are compatible with current EU import patterns, business association support, and EQI opportunities. Score the contribution of each criterion to Indonesia's international competitiveness of the sector on a scale of 1 to 10.

**Step 6:** Rank sectors based on the scoring process in Steps 1-6 and select the top-rated four sectors.

**Step 7:** Within the four top-rated sectors, identify and score the potential demand growth prospects and opportunities for Indonesia's different types of exports. In identifying products, the selection process has given attention to industries where EQI issues have a high incidence on competitiveness and market access.

**Step 8:** In consultation with government entities and business organizations, evaluate industries on the basis of Indonesia's competitiveness and as having a strong potential to perform well in the EU market.



**Step 9:** Based on the aforementioned analysis, select one or two industries within each of the four priority sectors.

The remainder of this chapter elaborates on this decision-making process, and describes the results of each step in the process. It is important to note that the selection process has been based on measurable indicators, rather than any subjective or qualitative criteria. The following sections present the quantitative techniques used to make the selection.

## 4.2 Factors Related to National Development Objectives (Steps 1 and 2)

The National Medium Term Development Plan for 2010-2014 (RPJM 2010-14) contains a list of priority export industries that underlie the prioritization of sectors and industries.<sup>38</sup> Table 4.2 lists the sectors and industries that have been identified by the Government's RPJM 2010-14, along with their associated International Standard Industrial Classification (ISIC). The coverage includes broad sectors like chemicals and chemical products, and narrowly defined industries like jewelry. In practice, the sequence for prioritization involves first identifying the sectors and subsequently identifying industries within the prioritized sectors. Within the confines of the time and available resources, the study focuses on four priority sectors. In turn, each priority sector covers one or two industries.

In principle, sectors are classified under the 4-digit level of International Standard Industrial Classification (ISIC) and the associated set of industries within those sectors, defined at the 6-digit ISIC level.<sup>39</sup> Mapping between the ISIC categories and trade-based Harmonized System (HS) information is based on concordance tables. In practice, however, we define sectors using the international trade classification nomenclature of the Harmonized System (HS) because of the focus on the study on international trade rather than production activities. Sectors are accordingly classified into 21 section headings of the Harmonized System. Industries are classified into 96 chapters (2-digit HS codes). Products are classified at the 4-digit and 6-digit division levels.

Table 4.2 lists the priority export sectors and priority sectors for industrial revitalization under RPJM 2010-14, along with wood products and furniture prioritized by the Ministry of Agriculture and Ministry of Trade. Most prioritized activities are sectors, but both fisheries and furniture manufacturing are classified as industries. The activities represent the starting point in the decision-making process for prioritizing sectors in the Study.

Through the Presidential Decree number 28 of 2008, the Government established the National Industrial Policy. Its industry cluster priorities are as follows:

1. Agro-Industries, covering (i) palm oil industry; (ii) industrial rubber and rubber goods; (iii) cocoa and chocolate industry; (iv) coconut industry; (v) coffee industry; (vi) sugar industry; (vii) tobacco industry; (viii) fruit industry; (ix) industrial wood and wood products; (x) fisheries and marine products industry; (xi) pulp and paper industry; and (xii) industry milk processing.
2. Transport Industry, covering (i) motor vehicle industry; (ii) shipping industry; (iii) aerospace industry; and (iv) rail industry.
3. Industrial Electronics, covering (i) industrial electronics; (ii) industry telecommunications hardware and supporters; (iii) device industry broadcasters and their supporters; and (iv) computer industry and its equipment.
4. Manufacturing Industry Base, covering (i) basic materials industries, including iron and steel industry, cement industry, petrochemical industry, ceramic industry; (ii) machinery industry, including industrial electrical equipment and electrical machinery, general industrial machinery and equipment; (iii) labor-intensive manufacturing industries, including (i) textile industry and product textiles, footwear industry, and pharmaceutical industry with raw materials from Indonesia.
5. Creative Industries, covering (i) design of software and multimedia content; (ii) fashion industry designs; (iii) the arts and craft industry.

38. Available [www.a4des.org/documents/RPJMN\\_Presentation\\_8Feb2010.pdf](http://www.a4des.org/documents/RPJMN_Presentation_8Feb2010.pdf)

39. Available <http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=28>

**Table 4.2: Priority Sectors and Industries Identified by the Government**

Sector or Industry	Priority Export Sector? 1/	Priority sector for industrial revitalization?1/	Other Priority Sectors of Ministries	ISIC 4 Categories2/	Sector or Industry?
Agricultural	Yes			01	Sector
Agro-processed products	Yes			110 + 11	Sector
Chemicals and chemical products	Yes	Yes 3/		20	Mixed
Fishery, fresh and processed	Yes			032	Industry
Footwear	Yes			152	Sector
Forestry			Yes 4/	16	Sector
Furniture and handicraft			Yes 4/	31	Industry
Leather products	Yes			15	Sector
Machinery and electrical equipment	Yes	Yes		27	Sector
Transportation equipment		Yes		49 to 53	Sector
Textiles and textile products	Yes			13 +14	Sector

1/ Government of Indonesia Medium Term Development Plan 2010 - 2014

2/ ISIC - International Standard Industrial Classification

3/ Fertilizer industry only.

4/ Special inclusive sectors based on discussions with Ministry of Agriculture and Ministry of Trade

6. Small and Medium Size Enterprise-based Industries, covering (i) precious stones and jewelry industry; (ii) salt industry of the people; (iii) pottery and ceramics industry ornamental; (iv) oil industry; and (v) snack food industry.

For other national development objectives under RPJM 2010-14, a combination of techniques were used to score the criteria related to value adding, innovation, SME/MSE support, poverty reduction, and employment generation. These approaches included interviews with business associations and government agencies, and research into the sector characteristics based on existing sector-level studies.

### 4.3 Foreign Market Determinants (Step3)

Quantitative analysis has been used to score (a) strength of import demand in the EU the potential (absolute and relative) growth and income responsiveness; and (b) the extent of EU non-tariff barriers (NTBs) to imports.

Import Demand – In the first case, income elasticity estimates of the demand for imports were estimated. These elasticities measure the responsiveness of sector-level imports to changes in domestic income, measured by GDP (Table 4.3). Elasticities greater than unity indicate that imports have a more-than-proportional response to changes in economic activity. These dynamic markets growing faster than overall economic activity are especially attractive to exporters in Indonesia. The estimates range from less than 1.7 for leather to a high of 4.4 for chemical products.<sup>40</sup>

Market Access – Trade restrictiveness indices measure tariff and non-tariff barriers on imports

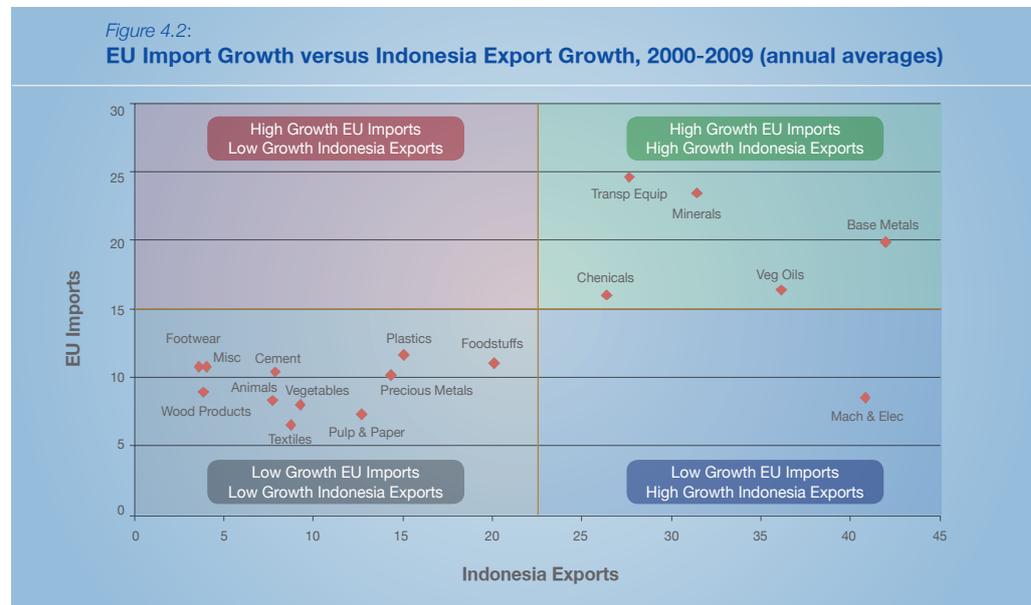
**Table 4.3: Sector-Level Import Demand Elasticities and Market Access Conditions in European Union**

	EU Income Elasticity of Import Demand	Index of EU Import Restrictiveness 1/
Vegetable products	2.2	34
Fats & Oils	3.0	51
Foodstuffs & Beverages	2.4	34
Chemical Products	4.4	53
Leather Products	1.7	48
Wood Products	1.9	47
Textiles	1.7	49
Footwear	2.1	49
Machinery & Electronics	2.1	29
Transport Equip.	2.2	44

1/ Estimates based on log-linear estimates of extra-EU imports and GDP in 1999-2009 for each sector.

2/ Based on information in European Commission, "Non-Tariff Measures in EU-US Trade and Investment – An Economic Analysis. Highlights of the study". Note by Directorate-General for Trade of the European Commission, 18 December 2009.

40. Based on log-linear estimates of extra-EU imports and GDP in 1999-2008 for total imports and major product categories.



and take a value between 0 (least restrictions) and 100 (most restrictions). The average level of trade restriction in the EU market equals 44 for the sectors. Above-average restrictions exist in the sectors for fats and oils, chemical products, textiles, footwear, leather and wood products. Below average restriction levels occur in the sectors of machinery equipment, processed foods and beverages, and fresh vegetables.

#### 4.4 International Competitiveness and Internal Factors (Step 4)

Trade compatibility between Indonesia's exports and EU imports has been analyzed at the product-specific level in the previous chapter for large, medium and smaller export products. In this section we present the results of sector aggregation for purposes of sector prioritization (Figure 4.2).<sup>41</sup> The analysis shows that the sectors with the fastest growing EU markets are chemicals, transport equipment, base metals and minerals, and vegetable fats and oils. Indonesia has also achieved high world-wide growth rates in all of these sectors. Slower EU market growth has taken place in the textile, pulp and paper, fresh vegetables, live animals, precious metals, plastics and footwear sectors.

Table 3.4 of Section 3.3 shows the sector ranking of sectors where Indonesia's product exports match those that are among the top 1000 imports into the EU market. Base metals have the highest number of products (26), followed by textiles (15) and precious or semi-precious stones (13), mineral products (9), and machinery and equipment (8). Those sector having the fewest matching products are articles of stone, plaster and cement; optical equipment; live animals and their products; and vegetable products.

Strength of domestic business and trade associations has been evaluated on the basis of interviews and knowledge of resident Study team experts.

The final and most important criteria is relates to EQI opportunities. The possibility for EQI development is closely related to the generation of value added activities. Those sectors having the greatest opportunities are machinery and electrical components and appliances, processed foods and beverages, chemical products, and transport equipment.

41. The compatibility of Indonesia's exports in the EU market is generally reflected in high rates of export growth and rising market shares. Following the approach used by the World Bank and others, the export performance of Indonesia has been classified into the following four categories: (a) Products in which Indonesia has a rising market share and EU imports are expanding; (b) Products in which Indonesia has a rising market share but EU imports are contracting; (c) Products in which Indonesia has a falling market share despite expanding EU imports; and (d) Products in which Indonesia's market share is falling and EU are contracting. For details, see TradeCan, TradeCan Database and Software for a Competitiveness Analysis of Nations. Washington, DC: The World Bank and Economic Commission for Latin American and the Caribbean (ECLAC). Available: [http://publications.worldbank.org/index.php?main\\_page=product\\_info&cPath=1&products\\_id=22127](http://publications.worldbank.org/index.php?main_page=product_info&cPath=1&products_id=22127).

## 4.5 Recommended Focal Sectors

Table 4.4 summarizes the scores and rankings of the sectors designated as being of national priority to RPJM 2010-14. Based on these findings, the proposed focal sectors for the study are as follows:

- **Machinery and Electrical Equipment:** The sector has the highest overall rating and considerable potential for value adding activities in the economy. The European Union is Indonesia's largest export market for consumer electronic products, and trade compatibility between Indonesia's existing product exports and EU imports is the highest of any sector. There are opportunities to address existing EQI constraints related to the international recognition of certification and testing of products within Indonesia. Already there well-known Original Equipment Manufacturers (OEM) like Panasonic, Sanyo, Epson, Sharp Samsung and LG are operating in the country, and both Government and the private sector are keen to increase the domestic content of electronics products from OEMs.
- **Processed Foodstuff:** This sector has the second-highest overall rating among all sectors, and also has large opportunities for exporters to move into high value-adding downstream activities. SMEs tend to predominate in food industry. Development of clusters and networking activities supporting the participation of SMEs along the value chain could provide large opportunities for knowledge and technology transfers to local producers. There are also important gains to be made in employment generation and poverty alleviation by helping micro and small size enterprises (MSEs) to become part of the farm supply of processed food manufacturers.
- **Chemical Products:** The sector has the highest responsiveness of demand for imports to economic growth in the European Union. It therefore has the best EU market prospects among all sectors. Downstream activities involving the location of facilities for further processing are rapidly emerging in new manufacturing areas, where large research and development (R&D) inputs are also needed. Requirements for EQI improvements are therefore large in most Indonesian activities in this sector. But while the challenges are great, Indonesian exporters entering the EU market have an intrinsically strong position because of the country's locational advantages.
- **Wood Products and Furniture:** Development of this sector would offer large possibilities for SMEs and MSEs, employment generation, and poverty alleviation throughout Indonesia. The benefits from EQI activities could have a favorable environmental impact through improved quality management and control, standardization, inspections and certification. Domestic business and trade associations are strong and could provide support to exporters intending to enter the EU market.

**Table 4.4: Criteria for Ranking and Selection of Sector and Industry Coverage by Study (Ratings from low of 1 to high of 10)**

Sector:	Vegetable products	Fats & Oils	Foodstuffs Beverages	Chemical Products	Leather Products	Wood Products	Textiles	Foot-wear	Machinery Electronics	Transport Equip.
HS Section	II	III	IV	VI	VIII	IX	XI	XII	XVI	XVII
<b>A. Factors Related to National Development Objectives</b>	4.8	4.8	9.6	8.6	6.2	8.4	5	6.4	8.2	6.0
1 Priority sector for the Government of Indonesia	8 (a)	10 (a,b)	10 (a,b)	7 (b)	8 (a)	6 (c)	8 (a)	8 (a)	10 (a,b)	7 (b)
2 Value adding to the economy and potential for innovation	2	6	10	8	4	7	4	4	10	8
3 Downstream Opportunities	2	4	10	10	6	9	6	5	8	8
4 Strengthening small and medium-size enterprises (SMEs)	4	2	10	9	7	10	4	7	8	5

Table 4.4 (Continued): **Criteria for Ranking and Selection of Sector and Industry Coverage by Study (Ratings from low of 1 to high of 10)**

Sector:	Vegetable products	Fats & Oils	Foodstuffs Beverages	Chemical Products	Leather Products	Wood Products	Textiles	Foot-wear	Machinery Electronics	Transport Equip.
HS Section	II	III	IV	VI	VIII	IX	XI	XII	XVI	XVII
<b>B. Foreign Market Determinants</b>	<b>5.8</b>	<b>6.0</b>	<b>6.0</b>	<b>7.4</b>	<b>4.9</b>	<b>4.8</b>	<b>4.4</b>	<b>5.9</b>	<b>5.9</b>	<b>5.9</b>
6 Income elasticity of import demand d/	5.0	6.9	5.5	10.0	3.8	4.3	3.8	4.8	4.7	5.0
7 Extent of EU non-tariff barriers (NTBs) to imports i/	6.6 (e)	5.0 (f)	6.6 (e)	4.7 (e)	6.0 (f)	5.3 (e)	5.1 (e)	7.0	7.2 (g)	6.8 (e)
<b>C. International Competitiveness and Internal Factors</b>	<b>4.3</b>	<b>4.6</b>	<b>7.3</b>	<b>7.3</b>	<b>3.8</b>	<b>6.1</b>	<b>6.8</b>	<b>4.2</b>	<b>9.2</b>	<b>7.1</b>
8 Trade Compatibility: Indonesia's Exports and EU Imports	1.7 (g)	2.1 (g)	2.5 (g)	3.3 (g)	- (g)	2.9 (g)	5.8 (g)	0.8 (g)	10.0 (g)	2.5 (g)
9 Matching Indonesia's exports with EU's top imports	0.0 (h)	3.3 (h)	3.3 (h)	2.7 (h)	0.0 (h)	2.7 (h)	10.0 (h)	1.3 (h)	5.3 (h)	0.0 (h)
10 Strength of domestic business and trade associations	6	7	8	8 (j)	5	7	7	5	10	10
11 Importance of EQI issues for export development	6	5	10	10 (j)	6	8	6	6	10	10
<b>Unweighted Average</b>	<b>4.5</b>	<b>4.9</b>	<b>7.6</b>	<b>7.4</b>	<b>4.7</b>	<b>6.6</b>	<b>5.7</b>	<b>5.2</b>	<b>8.0</b>	<b>5.8</b>

Note:

Excludes live animals and products (HS I), mineral products (HS Section V), plastics and rubber (HS Section VII), pulp and paper (HS Section X), cement and stone products (HS Section XIII), precious stones (HS Section XIV), base metals (XV), medical equipment (HS Section XVIII), arms (HS Section XIX), other manufactures (HS Section XX), art works (Section XXI).

Rating Explanations:

a Priority export sector in Government's Medium Term Development Plan 2010 - 2014 (see page II.3-76): (a) agricultural products; (b) fishery and processed products; (c) processed foods and beverages; (d) textiles; (e) machinery and electrical equipment; (f) chemicals and chemical products; (g) leather products and footwear

b Priority sectors for revitalization of the industrial sector in Government's Medium Term Development Plan 2010 - 2014 (see page II.3-76): (a) fertilizer industry, (b) sugar industry, (c) palm oil-based industries, (d) transportation equipment, and (e) electronics.

c Priority sector for Ministry of Agriculture and Ministry of Trade

d Estimates based on log-linear estimates of extra-EU imports and GDP in 1999-2009 for each sector, then normalized for scale of 1 to 10.

e Directorate-General for Trade of the European Commission, "Non-Tariff Measures in EU-US Trade and Investment – An Economic Analysis - Highlights of the study". Brussels, 18 December 2009. Available: [http://trade.ec.europa.eu/doclib/docs/2009/december/tradoc\\_145612.pdf](http://trade.ec.europa.eu/doclib/docs/2009/december/tradoc_145612.pdf)

f Based on reports from European Commission Helpdesk. Available: <http://exporthelp.europe.eu>.

g Based on data in Table 3.5.

h Based on data in Table 3.9 and refers to EU imports for HS 4-digit products exceeding US\$0.5 million of EU imports and US\$100 million

i Measures the frequency of occurrence of NTBs in sector.

j Refers to cosmetics

## 4.6 Selected Focal Industries

The selection of focal industries is largely based on the principal types of products exported by Indonesia within each of the focal sectors. It also reflects discussions held with industry representatives and government agencies. The resulting recommendations for industry coverage are as follows:

- **Processed Foodstuff:** (a) The fisheries industry; and (b) the agri-foods industry. Both industries have large possibilities for Indonesian enterprises to move into high value-adding downstream activities. SMEs predominate in upstream activities of both industries, and networking activities along their value chains could improve opportunities for knowledge and technology transfers to local producers.
- **Consumer Electronics:** The consumer electronics industry, which has large EQI assistance possibilities that could help move the Indonesian industry from low and medium-tech products to high-tech components.

- 
- ***Furniture:*** The furniture industry, which has location advantages in accessing raw material supplies, along with abundant skilled labor throughout the country. There are also important gains to be made in poverty alleviation by generating employment and sourcing supplies from MSEs
  - ***Natural Cosmetics:*** The natural cosmetic industry has a rapidly growing market throughout the European Union. Indonesia has a locational advantage in accessing raw material supplies.

PART II:  
EU MARKET POTENTIAL



## 5 Market Prospects for Focal Industries

### 5.1 Import Demand Responsiveness to Income and Price Changes

From the perspective of Indonesian exporters, the EU market demand has two components. First, the demand for product imports in the European Union for the focal industry; second, the European Union's demand for Indonesian exports of those products. The EU demand for exports of Indonesia depends on relative prices and other factors like quality and product differentiation between Indonesia's and other suppliers of that type of product.<sup>42</sup> In this chapter, we focus on the EU market and therefore on the first of these components related to EU demand for imports of the focal industries.

Income, population, and the rate of economic growth in EU member countries have long been recognized as key determinants of the European Union's demand for foreign products. Sustained economic growth is expected to drive imports, notwithstanding a slow growth in population. In the short-run, relative price changes can cause import demand to vary from year-to-year. But price effects are transient and do not impact on the long run growth of imports, since relative prices changes cannot be sustained in one direction continuously or else all consumers would shift to lower priced suppliers.<sup>43</sup> In addition, there are two types of shift factors impacting on imports. The first relates to structural changes in consumer preferences, which can shift the relationship between the economic activity and demand for imports of EU consumers of any type of product in the focal sectors of this study. The second type of shift can occur from non-price factors affecting the ease or difficulty of consuming foreign goods rather than domestically ones. Those non-price factors can be brought about by trade policies and regulations.

Study Team estimates shows that demand for imports is related to real incomes in the European Union (the long-term effect) and their relative prices (transitional effects).<sup>44</sup> Those relative prices are composed of the own price of the product measured in constant local currency terms, and the real effective exchange rate of the European Union. The average income elasticity of import demand of the products from the focal industries equals 2 in the short run and 3.4 in the long run. This average is in line with other import demand estimates in general and especially for processed and manufactured goods showing that changes in income tend to produce a more-than-proportionate response in imports. The income elasticities range from a low of unity for insulated wire and cables to a high of 7 for electric transformers. Import prices are, on average inelastic in the short run (-0.3) and long run (-0.5). In contrast, import demand tends to respond strongly to changes in the exchange rate, the average elasticity being -1.7 in the long run.

For fisheries and agri-foods, demand derives from a combination of broad demand dynamics, domestic supply trends, and trade policies. Higher incomes typically induce increased expenditures on a broader array of processed agricultural products and fish. In addition to income, other important factors include the size, age, ethnic composition of the population, cultural and religious factors,

#### Highlights of Indonesia's Exports to the EU Market

- Forecasts generated by econometric models for the focal industries point to a favorable outlook for import demand in the EU market because of the strong responsiveness of consumer demand to economic growth in the European Union.
- Those market prospects are, however, tempered by the fact that a strong response to economic activity unfavorably affects imports during a downturn like the one recently associated with the global economic crisis.
- Among the most dynamic markets are those of fisheries, wood furniture, and electronics.
- Cosmetics are in the mid-range and agri-foods have a moderate growth due to their low responsiveness to income changes.
- Among individual product groups, the fastest growing imports occur in crustaceans (shrimp), electrical transformers, essential oils, and optic fibers.

42. The EU consumer's decision-making process is described by the so-called utility tree described in the Technical Appendix to this report. Product differentiation from quality differences and the perception of consumers about other differences in the product originating from Indonesia relative to other sources gives rise to a downward sloping demand schedule for Indonesia's exports.

43. See, for example, Kai Christoffel, Günter Coenen and Anders Warne, "Forecasting with DSGE Models". DG-Research, European Central Bank. 22 December 2009. Available: <http://www.nottingham.ac.uk/economics/cfcm/FWDSEModels.pdf>

44. A Technical Appendix on the quantitative methodology used to derive the estimates is available upon request.

Table 5.1: Income and Price Elasticities of EU Imports of Focal Products

HS	Products	Income Elasticity		Income Elasticity Own Price Elasticity		Exch. Rate Elasticity Sector or Industry?	
		ST	LT	ST	LT	ST	LT
306	Crustacean	0.3	4.8	-0.2	-0.6	-0.9	-3.4
307	Mollusks	2.8	4.1			-0.2	-1.0
19	Cereal, flour, milk preparations	0.9	2.8	-0.2	-0.2		
20	Preparations of vegetables & fruit	0.7	1.5	-0.3			
2009	Fruit and vegetable juices	0.6	2.9	-0.6			
8525	Radio and TV transmitters	0.7	2.6	-0.2		-0.6	-0.1
8521	Video recording & apparatus	0.7	2.4				-3.1
8544	Insulated wire, optical fibre cable	0.8	1.0	-0.3	-0.9		
8504	Electric transformers, converters	5.8	7.1				
9403	Other furniture	8.6	3.8	-0.3	-0.4		
3301	Essential oils	0.6	4.6			-1.0	-0.9
3304	Beauty, make-up preparations	2.0	3.3				

Note: ST - Short term; LT - Long term

lifestyle factors (including work patterns and urbanization), and consumer education about health matters. These factors are the ones that can cause shifts in the relationship between EU consumer incomes and the demand for agri-foods and fishery products.

In the case of fisheries, import demand has been estimated for the most important types of products exported by Indonesia to the European Union. The product groups are (a) crustaceans, which represent 55 percent of exports to the EU market; and (b) mollusks, which account for nearly 20 percent of exports. Three other product groups are exported, but their share is smaller, namely, fish fillet 14 percent, live fish (6 percent of total exports to the EU market); and (e) frozen fish (6 percent). There are negligible exports of fresh, chilled or dried fish from Indonesia to the European Union. The first group covering crustacean includes shrimp, which is used as an example in the Annexes to this study.

Demand for agri-food imports has been estimated for non-meat processed products since Indonesia does not have any processed meat establishments approved establishments by the European Union. Import demand has therefore been estimated for two product groups: (a) cereal, flour, starch, milk preparations and products; and (b) preparations of vegetables, fruit, nuts or other parts of plants. The demand for imports of fruit and vegetable juices has also been estimated since the Indonesian industry producing these products is used as an example in the Annexes to this study.

Electronic equipment imports into the European Union are divided into 48 product categories. Indonesia's exports are concentrated in six of those categories, which together account for nearly one-half of all electronics exports. Import demand estimates cover four of those product groups: (a) radio and TV transmitters, television cameras; (b) video recording and reproducing apparatus; (c) insulated wire and cable, optical fiber cable; and (d) electric transformers, static converters and rectifiers. Together these four categories represent nearly 40 percent of all electronic exports of Indonesia. In addition to income and prices, one of the most important factors driving the demand for electronics products is technology. Because technology is constantly changing, it is useful to estimate technology using various trend variables, which can take the form of linear or some form of exponential function that is not purely linear.

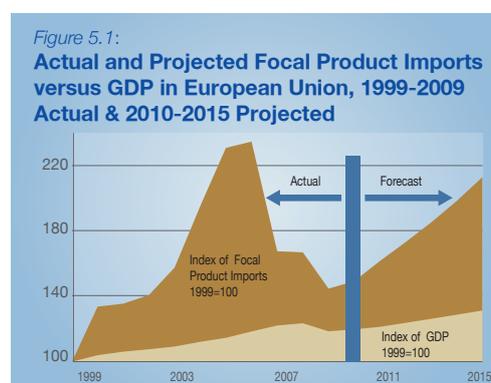
In furniture, EU import demand has been estimated for wood-based furniture products. These products are normally classified into office, living-room, bedroom and other wood furniture. Changes

in tastes and preferences are critical in consumer preferences. Shifts can occur in the type of furniture preferred by consumers, whether from the material content or the period style.

For cosmetics, EU import demand has been estimated for the two types of product groups in which Indonesia's exports are concentrated: (a) essential oils, resinoids and terpenic by-products; and (b) beauty, make-up preparations. Together these two product groups account for one-half of all exports of cosmetic products by Indonesia. As in furniture, not only do income and prices drive demand, but consumer preferences play an important part in determining that demand.

## 5.2 Import Demand Forecasts for Focal Industries

Projections of EU demand for imports of the focus products have been generated from the estimated import demand relationships estimated by the Study Team and described in the previous section. The forecasts for real GDP growth, prices and the exchange rate are based on the International Monetary Fund's biannual projections.<sup>45</sup> The forecast is for GDP to grow by 1 percent in real terms in 2010, and by another 1.3 percent in 2011. After 2011 a moderate 2 percent annual real GDP growth is assumed. We assume unchanged constant euro prices for the products and an average exchange rate of US\$1.3 per euro over the medium term.



Source: Projections based on import demand estimates and IMF, World Economic Outlook assumptions about GDP growth.

Figure 5.2 summarizes the results for the forecast period relative to the historical performance of the focal product group. The graph demonstrates the strong expansion predicted in EU imports relative to GDP growth, assuming a positive, sustained growth in 2010-2015. Based on the 1.7 percent

**Table 5.2: EU Imports of Focal Products , Actual 2000-09 & Projected 2010-15 (average annual growth of US dollar values)**

		2000-2004	2005-2009	2010-2015
<b>03</b>	<b>Fisheries, of which:</b>	5%	1%	10%
306	Crustacean	4%	1%	11%
307	Molluscs	8%	1%	8%
<b>19+20</b>	<b>Agri-Foods, of which:</b>	2%	4%	2%
19	Cereal, flour, milk preparations	8%	7%	2%
20	Preparation of veg & fruit, of which:	1%	4%	2%
2009	Fruit and Vegetable Juices	-3%	4%	4%
<b>85</b>	<b>Electronics, of which:</b>	22%	-8%	7%
8525	Radio and TV transmitters	2%	5%	4%
8521	Video recording apparatus	24%	-9%	2%
8544	Insulated wire, optical fibre cable	37%	-14%	6%
8504	Electric Transformers, converters	6%	8%	12%
<b>9403</b>	<b>Wood furniture</b>	11%	5%	9%
<b>33</b>	<b>Cosmetics, of which:</b>	8%	4%	6%
3301	Essential oils	3%	2%	10%
3304	Make-up preparations	10%	5%	5%

Source: Projections based on econometric estimates detailed in Technical Appendix.

45. See International Monetary Fund, "World Economic Outlook Update". July 2010. Available: <http://www.imf.org/external/pubs/ft/weo/2010/update/02/index.htm>.

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average annual growth in real GDP of the European Union in 2010-2015, demand for imports of the focal products is projected to grow by nearly 7 percent a year. The historical performance of those imports, nonetheless, shows that the strong responsiveness of imports to income changes also has a down side: the recent Global Financial Crisis sharply reduced the demand for product imports, by an average of 14 percent a year in 2007-2009.

The EU import projections for individual product groups are presented in Table 5.2. Among the most dynamic product groups are fisheries, wood furniture, and electronics. Cosmetics are in the mid-range and agri-foods have a moderate growth due to their low responsiveness to income changes. Among individual product groups, the fastest growing imports occur in crustaceans (shrimp), electrical transformers, essential oils, and optic fibers.

# 6 EU Market Performance and Growth Potential for Focal Industries

## 6.1 Fisheries Industry

The European Union is increasingly dependent on imports of fishery products to meet its domestic consumption needs (Figure 6.1). In 2009 the European Union imported US\$17 billion worth of fishery products, which represented 2.5 times the volume of domestic production. Net imports in that year supplied one-half of domestic consumption.<sup>46</sup>

Fishery imports into the European Union are mainly in the form of processed fish, followed by fresh or chilled fish and crustaceans (Figure 6.2).<sup>47</sup> Together these three types of imports account for 75 percent of all fishery imports. By itself, processed fish represents one-third of all fishery imports. It comprises fresh, chilled or frozen fillets of swordfish, salmon, trout, coalfish, haddock, herring and mackerel. Within these different product types, Indonesia mainly exports fish meat.

The most important fishery products imported into the European Union are shrimp and salmon, followed by cuttle fish, octopus, sturgeon, cod and scallops (Figure 6.3). Together these products account for nearly 80 percent of all fishery imports into the EU market. In 2009 Indonesia accounted for 6 percent of frozen shrimp supplied by foreign countries to the EU market.

The major foreign suppliers of fishery products to the European Union are Norway (24 percent of total imports in 2009), China (10 percent), Iceland (7 percent), Vietnam (6 percent), and the United States (5 percent). Together these five countries accounted for one-half of total EU imports in 2009. In frozen shrimp, the major suppliers are Ecuador (14 percent of total imports in 2009), India (13 percent), Argentina (12 percent), Bangladesh (9 percent), Thailand, Vietnam and China (each with 6 percent shares). Together these seven countries supply two-thirds of the EU market. Indonesia is the tenth largest supplier of frozen shrimp and has a 4 percent market share of the EU market.

The market for fish and crustaceans like shrimp is highly price competitive, and some countries have a competitive advantage because of preferential tariff rates under free trade arrangements (FTAs) with the European Union, under GSP plus,<sup>48</sup> or under the Everything But Arms (EBA) arrangement that includes duty-free and quota-free access for products originating in Least Developed Countries (LDCs). Indonesia is a GSP beneficiary with preferential duties on fisheries. The GSP rates range from a low of zero for some products to a high of 18 to 19.5 percent in the case of some products like fresh, chilled or frozen sardines, some tunas like long-finned and yellow-fin tuna, and skipjack or stripe-bellied bonito.<sup>49</sup>

### Highlights of Indonesia's Exports to the EU Market

- With the EU enlargement, import demand growth rate differentials among EU countries have risen for the types of products exported by Indonesia.
- Trade compatibility between Indonesian exports and EU imports is high among wide-ranging products like wooden furniture, consumer electronics components for computers and televisions, shrimp and other mollusks, and soaps and organic preparations.
- There are over 100 important Indonesian products that are among the European Union's 1000 top imports.
- Indonesia has numerous fast-growing exports that have dynamic import markets in the European Union. They include products in the sectors of foods, high-tech machinery and electronic equipment, and transportation equipment.
- There are strong EU markets for furniture and other wood products, footwear of various types, chemical products and jewelry.
- Indonesia's primary commodity exports face less dynamic EU markets than those for processed goods. For example, unprocessed fruit and vegetable markets are less dynamic than those of processed food products; consumption of unrefined minerals and chemicals has grown more slowly than that of refined products; and the market for lumber and unfinished wood has grown more slowly than wood panel manufacturing and the furniture and furnishings industry.

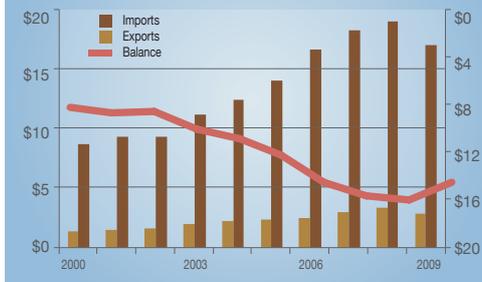
46. Imports relative to consumption data from Food and Agricultural Organization (FAO) data on supply and distribution of fisheries products. Available: <http://www.fao.org/fishery/topic/16140/en>. C

47. Under the harmonized system (HS), the fisheries subsector consists of chapter 3 (Fish and crustaceans, mollusks and other aquatic invertebrates) and part of chapter 16 covering prepared or preserved fish (1604) and crustaceans (1605).

48. Includes Ecuador, Colombia, Costa Rica, Guatemala, Honduras, Sri Lanka, Paraguay, El Salvador, and Venezuela. For the full list of countries qualifying for GSP+ status in 2009-2011, see <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:334:0090:0091:EN:PDF>

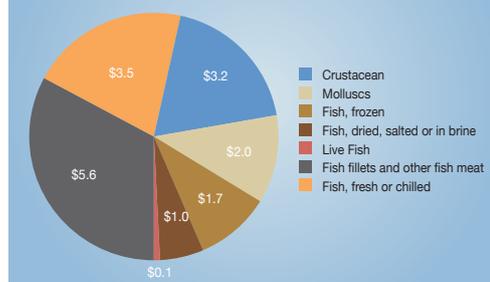
49. Based on data provided to the Study Team by the European Commission.

Figure 6.1:

**EU Imports and Exports of Fishery Products, 2000-2009 (Billion US dollars)**

Source: United Nations, Comtrade database.

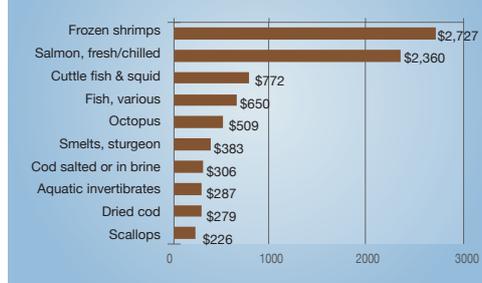
Figure 6.2:

**EU Fishery Imports by Type, 2009 (billions of US\$)**

Source: United Nations, Comtrade database.

Overall import growth of the fisheries subsector in the last decade has averaged 8 percent a year. Above-average rates have been achieved in processed fishery imports, which expanded by 50 percent more than the average of all import fishery imports. In contrast, live, fresh and chilled fish and crustaceans have grown at much lower rates. The fastest growing product-level imports are fish and shellfish in their frozen form, including coalfish, eels, albacore, scallops, trout, mackerel, sardines and crabmeat. Imports of fresh and chilled yellowfin tuna have also expanded greatly in the last decade, averaging 38 percent a year. The yellowfin tuna habitat is in tropical and subtropical seas, and is absent from the Mediterranean Sea. Indonesia has the world's largest catch of this species.

Figure 6.3:

**EU Imports of Top 10 Fishery Products, 2009 (million US\$)**

Source: United Nations, Comtrade database.

**6.2 Processed Agri-Food Industry**

Over 70 percent of agricultural goods produced in the European Union are transformed into food industry products. Consumers spend 12 percent of their income on food consumption and domestic production supplies about 90 percent of the EU market. The largest sub-sectors are meat, dairy, cereal-based industries and beverages. The fruit subsector is the most dependent on foreign supplies (about one-fourth of domestic utilization).<sup>50</sup> For that reason, imports of fruits tend to predominate in EU imports of processed agri-foods (Figure 5.4

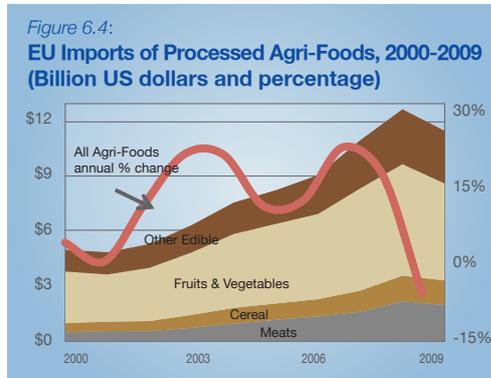
and Table 2.1).

The European Union is by far the world largest trader of meats, accounting for over 50 percent of total world exports and imports respectively.<sup>51</sup> International trade is largely in the form of frozen, cooked or further processed products. The value of processed meat imports into the European Union has grown by an average annual rate of 13 percent a year, outpacing all other food groups by a significant margin. Nevertheless, Indonesia does not supply any meat products to the European Union because it is a net meat-importing country and does therefore not have a viable export potential for these types of products.

The average import growth rate of cereals, flour and starches has been 7.6 percent, and that of fruits and vegetables under 4 percent. Less than 5 percent of total world output of fruit and vegetables is traded internationally since they are generally consumed fresh. However, in the higher income countries of Europe, more than half of all consumption is in the form

50. Based on UN Food and Agriculture Organization (FAO) FAOSTAT database for the latest available year (2007) from commodity balances.

51. Based on UN Food and Agriculture Organization (FAO) FAOSTAT database TRADEstat. Available: <http://faostat.fao.org/site/535/DesktopDefault.aspx?PageID=535#ancor>



of processed fruit and vegetables, including juices.<sup>52</sup>

Among individual product categories, fruit and vegetable juices are the largest processed agri-food imported into the European Union. It alone accounts for over 18 percent of all agri-food imports. Prepared or preserved meats are the second largest imported product group, representing 17 percent of all agri-food imports. Other major imports are fruits, nuts, and edible plant parts (14 percent), prepared vegetables (13 percent), and concentrates of coffee and tea (7 percent). Bread, and pastries and sauces, condiments and seasonings each accounts for 5 percent of total agri-food imports into the European Union.

Among EU member countries, the largest importers of processed agri-foods are Netherlands (18 percent of all imports), United Kingdom (18 percent), Germany (17 percent), France (10 percent), Italy (8 percent), Spain (7 percent) and Belgium (7 percent). Together these seven countries account for 77 percent of all EU imports of processed agri-foods.

### 6.3 Electronics Industry

The electronics industry produces a wide range of products, about half of which are for mass market consumption like mobile phones, televisions and personal computers (PCs); the other half are embedded in manufacturing processes, information technology (IT), and transportation equipment. The major applications are for the telecommunications, automotive, medical, and aerospace and defense industries.

Our focus in this report is on those products that are important to Indonesia, either in terms of exports or in terms domestic production of component for multinational enterprises.<sup>53</sup> Intermediaries are particularly important to the international value distribution structure of electronics manufacturers, more so than in any other of the focal industries. Multinational firms are not tied to a particular location for sourcing electronics components.<sup>54</sup> Instead, global production networks farm out production to diverse geographical locations to take advantage of lower costs and thereby obtain higher margins

Table 6.1: EU Top Agri-Food Product Imports, 2009 (Billion US dollars)

HS	Product	2009
2009	Fruit and vegetable juices	\$ 2.1
1602	Prepared or preserved meat	\$ 2.0
2008	Fruit, nut, edible plant parts	\$ 1.6
2106	Other food preparations	\$ 1.5
2005	Vegetables, prepared/preserved	\$ 0.8
2101	Concentrates of tea, coffee, mate	\$ 0.6
1905	Baked bread, pastry	\$ 0.6
2103	Sauce, condiments, seasoning	\$ 0.5
1902	Pasta, couscous	\$ 0.4
1901	Malt extract, flourpreparations	\$ 0.4
2001	Vegetables & fruit in vinegar	\$ 0.3
2002	Tomatos preparations	\$ 0.3
2104	Soup preparations	\$ 0.1
2102	Yeast, baking powders	\$ 0.1
<b>Sub-Total</b>		<b>\$ 11.2</b>
<b>All Agri-Foods</b>		<b>\$ 11.5</b>

Source: United Nations, COMTRADE database.

52. J.H.M. Wijnands, B.M.J. van der Meulen, and K.J. Poppe (eds), "Competitiveness of the European Food Industry: An Economic and Legal Assessment". European Commission, 2007. According to this study, producers of processed fruits and vegetables, particularly in the canning industry, are encountering stagnating consumption in high income regions like Western Europe. Under this situation, processors and other chain suppliers have attempted to exploit the increasing consumer preference for freshly processed fruits and vegetables like pre-cut, cleaned, pre-packed or as a ready-to-eat meal. Frozen products appeal to consumers as their nutritional values are almost the same as fresh vegetables and they can be stored for longer periods. Processed vegetables, fresh, canned or frozen, are also widely used in the food services.

53. The report covers electrical machinery and equipment under the Harmonized System (HS) chapter 85, and the six top Indonesian exports under HS chapter 86, namely, pumps, compressors, ventilating fans; refrigerators and freezers; parts for lifting and moving machinery; printing machinery; computers; and parts and accessories for office machine.

54. See UNCTAD, "Strengthening participation of developing countries in dynamic and new sectors of world trade: Trends, issues and policies in the electronics sector". Geneva, September 2005. Available: [http://www.unctad.org/en/docs/c1em28d2\\_en.pdf](http://www.unctad.org/en/docs/c1em28d2_en.pdf)

**Table 6.2: Top 20 EU Electronic Product Imports, 2009 (billion US\$ and percent)**

HS	Product	Billion US\$	% of Total
8517	Electrics for line telephony	43.1	22.1%
8541	Diodes, transistors	17.8	9.1%
8542	Electronic integrated circuits	15.6	8.0%
8529	Parts for radio & television	13.1	6.7%
8528	Television receivers & monitors	9.7	5.0%
8525	Radio and TV transmitters	8.8	4.5%
8544	Insulated wire, optical fiber cable	7.8	4.0%
8504	Electric transformers	7.5	3.9%
8536	Electrical switches, connectors	6.1	3.1%
8516	Equipment with heating element	5.7	2.9%
8523	Recording media	5.2	2.7%
8501	Electric motors and generators	3.4	1.7%
8520	Electronic recording equipment	3.3	1.7%
8534	Electronic printed circuits	3.3	1.7%
8518	Audio-electronic equipment	2.9	1.5%
8531	Electric sound/visual equipment	2.8	1.4%
8543	Electrical machinery nes	2.8	1.4%
8507	Electric accumulators	2.6	1.4%
8526	Radar, radio navigation equip	2.5	1.3%
8521	Video recording apparatus	2.5	1.3%

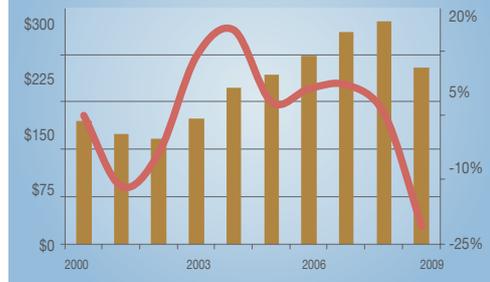
Source: United Nations, COMTRADE database.

21 percent contraction in 2009 (Figure 5.5). The largest EU importers are Germany, France, United Kingdom and Italy, which together account for one-half of all electronics imports into the European Union.

## 6.4 Furniture Industry

The European Union is a large and growing net importer of wood furniture, especially large furniture for offices, kitchens and bedrooms (Figure 5.6). The penetration of Chinese furniture into the EU market has grown to nearly 60 percent of the total of all types of furniture. In wood furniture, Indonesia accounts for 10 percent of all imports. However, the type of furniture supplied by Indonesia to the EU market is mainly in the form of small figurines and wood pieces rather than the more lucrative office, kitchen and bedroom furniture, where Indonesia's market-share equal only 4 percent. The reason for this concentration is that Indonesia is less organized and exporters are small in size. They therefore find it easier to ship individual containers to the European Union than to ship larger volumes that require accredited certifications on the source of their materials for

**Figure 6.5: EU Electronics Imports (billion US\$ and Percent)**



Source: Based on data from United Nations, COMTRADE database

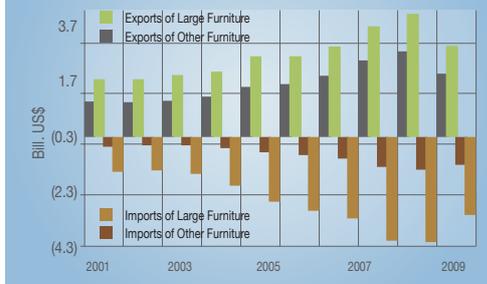
and profits. The electronics industry value chain depends largely on component manufacturers, estimated at 30 percent of the equipment value. Equipment manufacturers include Original Equipment Manufacturers (OEM) and dedicated sub-contractors providing manufacturing services (EMS) or design services (ODM) to OEM clients.<sup>55</sup>

The top EU electronic product imports are fairly evenly distributed between mass market applications in home appliances, data processing uses, and audio and video, and in industry applications for medical, automobile, defense, and telecommunications (Table 6.2). Together these 20 imports represent 85 percent of all electronics imports.

The European Union is a net importer of electronic components. The market is by far the largest of all the focal industries. Imports in 2009 were US\$280 billion. However, demand is highly responsive to income changes. As a result, year-to-year growth has varied widely, from a surge of 25 percent in the value of imports in 2004 to a

55. See Etudes Conseil, "World Electronics Industries 2008-2013". April 2009. Available: [http://www.decision.eu/doc/brochures/exec\\_wei\\_current.pdf](http://www.decision.eu/doc/brochures/exec_wei_current.pdf).

Figure 6.6:  
EU Exports and Imports of Wood Furniture,  
2000-2009 (Billion US\$)



Source: United Nations, COMTRADE database

their furniture items and, for their labor usage, certification of safety standards, occupational hazards, and compliance with child labor laws. These requirements are time-consuming and costly for Indonesian exporters to the EU market.

Within the European Union, the main producers are Italy and Germany, followed by France, Spain and the United Kingdom. Chain stores are the most important channel for furniture sales. On the production side, the Indonesian industry is dominated by micro enterprises having less than ten workers. These enterprises often have subcontracting arrangements with the large

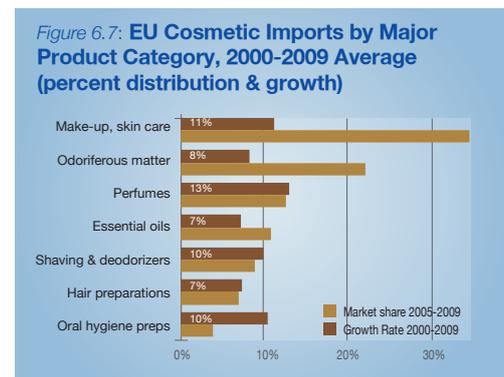
manufacturers, supplying them with components and semi-finished products for the finishing and assembling of furniture.

Although there is no specific EU legislation for furniture, those related to the environment, chemicals, intellectual property, health and safety at work and trade impact on the industry. The Directive on Integrated Pollution Prevention and Control (IPPC) aims to minimize pollution from various industrial sources throughout the European Union. In addition, the European Committee for Standardization publishes voluntary quality standards that are increasingly being recognized as industry standards throughout the EU market.

Despite the obstacles created by the industry's regulatory measures in the European Union, there is considerable potential for Indonesia producers to expand their presence in the markets for office, kitchen and bedroom furniture, especially by integrating into the value chains of large distributors. Indonesia's competitive advantage in the EU market lies in its low labor and resources costs relative to EU producers. It also has a large skilled labor force in the wood furniture industry relative to an aging labor force in the European Union.

## 6.5 Cosmetic Industry

The cosmetic market of the European Union is nearly as large as the combined markets of the United States and Japan. Common growth patterns are occurring throughout the European Union in sun care products to protect against rising concerns about skin cancer and exposure to harmful rays. In addition, the aging population of Europe is generating growing demand for anti-aging creams and anti-cellulite skin care products. There is also a growing demand for natural and organic products across all age groups.<sup>56</sup>



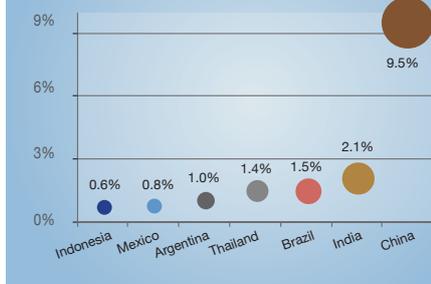
Source: United Nations, COMTRADE database

Barriers to entry in the EU market are mainly related to the prevalence of large multinational enterprises. Distribution channels are more important in Europe than in other markets like the United States. In Europe, consumers tend to differentiate the type of products that they purchase based on whether the product originates from mass distribution, specialized distribution, pharmacy sales and direct sales.<sup>57</sup> Multinationals tend to have networking systems that allows them to place their products in appropriate retail outlets to target specific types of consumers. This situation makes it more difficult, but not impossible, for smaller companies to enter the market. However, in the areas of natural and organic cosmetics, there are a large number of

56. Based on data at [www.euromonitor.com](http://www.euromonitor.com).

57. Global Insight, "A Study of the European Cosmetics Industry". November 2007. Available: [http://ec.europa.eu/enterprise/newsroom/cf/document.cfm?action=display&doc\\_id=4561&userservice\\_id=1](http://ec.europa.eu/enterprise/newsroom/cf/document.cfm?action=display&doc_id=4561&userservice_id=1)

Figure 6.9: Market Shares of Major Developing Country Suppliers of Cosmetic Products to EU Market in 2009



Source: United Nations, COMTRADE database

relatively small independent companies operating in the fast-growing European market.

The pertinent cosmetic products for Indonesia are those that use natural ingredients, either in conventional forms like creams or nonconventional ones like body scrubs. At present, Indonesia's largest worldwide exports of cosmetics are under two broad classifications. The first is essential oils, resinoids and terpenic by-products under the HS 3301 classification; the other is beauty makeup preparations under the HS 3304 classification. Within these broad groupings, Indonesia mainly exports essential

oils of geranium, which accounts for over 70 percent of essential oils, resinoids and terpenic by-products, and essential oils of vetiver, which accounts for most of the remaining exports in this category. In the more processed products, Indonesia exports beauty makeup preparations other than those used for eyes, lips, skin or manicure or pedicure purposes.

Because of strong and rising consumption of cosmetic products in the European Union, imports have grown rapidly in the last ten years, averaging nearly 10 percent a year. The largest product categories are make-up and skin care (35 percent of all cosmetics), odoriferous substances (22 percent), perfumes (13 percent) and essential oils (11 percent). Of these product groups, imports of both make-up and skin care products and perfume products have had above-average growth rates for the period. In contrast, essential oil products, where Indonesia's exports are mainly concentrated, have experience a sluggish growth relative to other product categories. Since the market for cosmetic products is dominated by multinationals like Procter and Gamble, L'Oreal Group, Unilever Group and Colgate-Palmolive, to participate in this growth market Indonesian producers would have to either subcontract to these companies in pre-export processing activities within the country or export highly differentiated natural-based organic products in niche markets within Europe.

The major competitors to Indonesia in the EU cosmetic market are China, Switzerland, United States, Japan, Canada and India. These six countries supply over 80 percent of the EU market. Indonesia's market share is currently small (0.6 percent), although it ranks number 19 in terms of largest foreign cosmetic providers to the European Union.

# 7 Market Access Issues for Indonesian Exporters

## 7.1 Trade Regulations with General Application

The European Union formulates and implements its trade policies under two institutional mechanisms. The first is the Common Commercial Policy (CCP), which covers all aspects of trade in goods and some parts of standards and other technical regulations. The other mechanism is regulations of general application to trade that are enacted by the European Commission and affect all member states. The CCP ensures that trade policies are formulated and implemented at the supranational level and, as such, the European Commission (EC) manages tariffs and other trade policy instruments, including trade agreements with non-member countries. The resulting regulatory measures enacted by these institutions affect EU market access for all the focal sectors and subsectors covered in this study.

### Highlights of Indonesia's Exports to the EU Market

- Trade policies in the European Union are designed and implemented under two institutional mechanisms:
  - (a) The European Union's Common Commercial Policy (CCP), which covers all aspects of trade in goods and some parts of standards and other technical regulations.
  - (b) Regulations of general application to trade that are enacted by the European Commission and affect all member states.
- Indonesia is a GSP beneficiary, under which it receives preferential market access.
- Non-tariff measures applicable to Indonesia and other third countries are in the form of cross-sectoral regulations and sector-specific requirements.

### 7.1.1 Preferential Trade Arrangements

Trade agreements between the European Union and non-European countries or groupings affect Indonesian exporters because they provide preferential conditions to competing suppliers to the EU market. Indonesia benefits from the European Union's Generalized System of Preferences (GSP) for developing countries. Under this system, the European Union provides preferential access to 176 developing countries and territories. There is no expectation or requirement that this access be reciprocated.

Despite the benefit that the GSP provides to Indonesian exporters, there are a number of other preferences given numerous other countries that places Indonesia at a competitive disadvantage in the EU market. Preferential duty regimes under free trade agreements (FTAs) are given to countries like Chile, Mexico and South Africa and to country groupings like the Mediterranean countries, all of which have full or nearly complete duty-free access to the EU market. Additionally, the African, Caribbean and Pacific (ACP) countries receive bilateral trade preferences, and least-developed countries (LDCs) are provided duty-free access to the EU market under the Everything But Arms (EBA) initiative.

There is a preferential trade agreement being negotiated with ASEAN, under which Indonesia would benefit. However, there has been limited progress in the negotiations and the European Commission has instead opted to negotiate bilateral agreements with countries like Singapore and Vietnam. Because of its numerous preferential schemes, the EC's entirely non-preferential MFN regime applies to only nine countries, which together supply about one-fourth of the European Union's total imports.<sup>58</sup> ASEAN member countries are GSP and/or EBA beneficiaries.

### 7.1.2 Tariffs

Most-favored-nation (MFN) rates in the European Union average 5 percent and GSP rates average less than 2 percent (Table 7.1). Nevertheless, the range of MFN tariffs is high among certain product groups. For example, the ad valorem tariff rate on processed food imports is 14 percent under the MFN schedule and 11 percent under the GPS schedule. In contrast, imports of cosmetics, electronics and furniture enter the European Union duty free for GSP beneficiary countries. In addition to the ad valorem tariff, the European Union applies other types of tariffs, excise charges, and a value added

58. Australia, Canada, Taiwan, Hong Kong, China, Japan, Republic of Korea, New Zealand, Singapore, and the United States. Based on estimates by WTO Secretariat, "Trade Policy Review: European Communities: Revision". Report by the WTO Secretariat, 2009.

Table 7.1: EU Tariffs, by Most-Favored-Nation (MFN) and by Preferences, 2010

	Description	#Tariff Lines	Min.	Max.	Avg	GSP Rate
	<b>Overall</b>	<b>8342</b>	<b>0.0</b>	<b>74.9</b>	<b>5.2</b>	<b>1.7</b>
01	Live animals, animal products	459	2.0	23.0	10.0	6.5
02	Vegetable products	373	1.5	20.8	6.1	2.6
03	Animal or vegetable fats and oils	114	2.0	16.0	6.0	2.5
04	Prepared foodstuffs; beverages; tobacco	414	1.6	74.9	14.1	10.6
05	Wood and articles of wood	83	1.7	1.7	0.2	Duty free
06	Mineral products	111	0.7	8.0	1.9	Duty free
07	Products of the chemical	1244	1.5	9.0	4.2	Duty free
08	Plastics; rubber and articles thereof	351	2.0	6.5	4.7	1.2
09	Raw hides and skins, leather	113	1.7	9.7	4.0	0.5
10	Pulp of wood and paper	177	2.5	10.0	2.5	-10.0
11	Textiles and textile articles	1147	2.0	12.0	8.3	6.6
12	Footware, headgear, umbrellas	103	2.7	17.0	8.5	5.0
13	Articles of stone, plaster, cement	73	1.7	3.7	1.3	Duty free
14	Precious or semi-precious stones	63	2.0	4.0	0.7	Duty free
15	Base metals and article of base metals	885	1.5	10.0	2.1	Duty free
16	Machinery; appliances; electrical equipment	522	1.7	14.0	3.4	Duty free
17	Vehicles, and other transport equipment	266	1.7	3.7	5.1	Duty free
18	Optical, medical instruments	428	1.4	6.7	2.7	Duty free
19	Miscellaneous manufactures	70	1.7	7.7	3.3	Duty free
20	Works of art	0	0.0	0.0	0.0	Duty free

Source: WTO via Tariff Online Service, UNCTAD (EU'S GSP HANDBOOK)

tax (VAT). These special tariffs are discussed in the following sections on market access conditions for the focal sectors and subsectors.<sup>59</sup>

Indonesia's share of EU GSP eligibility has increased in the last decade (Figure 7.1). Of the total value of exports to the EU market, the proportion of exports eligible for GSP has increased from 62 to 73 percent, while the share subject to MFN rates has declined from 38 to 27 percent. It is important to underscore that these figures refer to eligibility rather than actual utilization of preferences. For utilization rates, only the early years are available, and they indicate a utilization rate of 62 percent in the mid-1990s and 63 percent in the early 2000s.<sup>60</sup> Given these stable rates, it is likely that the same coverage applies to the more recent years.

### 7.1.3 Non-Tariff Measures

Prohibitions and surveillance on imports are maintained on technical, sanitary, phytosanitary, and environmental grounds. The measures generally applicable across Indonesia's exports to the EU market are described in this section.<sup>61</sup> Details about the specific and differentiated measures applicable to the focal sectors and subsectors are described in Section 7.2.

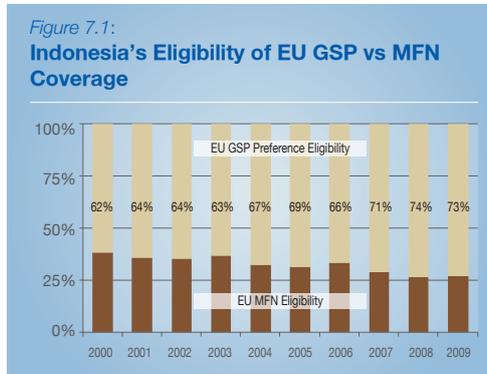
- **Licensing and quotas:** Import surveillances apply to some textiles, steel products, and agricultural products, including cereals, rice, sugar, milk products, beef and veal, fresh fruit and vegetables,

59. For a general survey, see WTO Secretariat, "Trade Policy Review: European Communities: Revision". Report by the WTO Secretariat, 2009.

60. Based on calculations in Ludo Cuyvers and Stijn Verherstraeten, "The EU's Generalized System of Preferences and its ASEAN beneficiaries: a success story?" Centre for ASEAN Studies, CAS Discussion paper No 47, December 2005. Available: [http://siteresources.worldbank.org/INTRADERESEARHC/Resources/544824-1235150721870/ch03\\_candau\\_Jean\\_EU\\_preferences.pdf](http://siteresources.worldbank.org/INTRADERESEARHC/Resources/544824-1235150721870/ch03_candau_Jean_EU_preferences.pdf)

61. For other measures, see WTO Secretariat, "Trade Policy Review: European Communities: Revision". Report by the WTO Secretariat, 2009. This section draws on the material contained in this report and provides updates on the measures based on recent EC and WTO Secretariat reports.

and processed fruits and vegetables. Tariff quotas apply to agricultural products and are managed either at the border or through import licensing. Licenses can be issued on a pro-rata or an historical basis. For agricultural products, the period of validity of import licenses depends on the product; general periods of validity are set in the relevant regulations. The validity of licenses allocated in the context of tariff quotas also varies, and it can only be extended in case of “force majeure”.



Source: Eurostat database adjusted EU-Extra imports by tariff regime.

- **Technical requirements:** Industrial products are subject to two types of requirements: those providing detailed and specific technical requirements, and those establishing essential requirements to meet health, safety, and environmental objectives. Foreign and domestic suppliers to the EU market must assume responsibility for compliance with EC legislation. Supplier must affix the “CE” mark on the product, symbolizing conformity of the product with the applicable EC requirements.<sup>62</sup>
- **European Standards Organizations:** At the supranational level, the European Standards Organizations (ESOs) are (i) European Committee for Standardization (CEN), (ii) European Committee for Electrotechnical Standardization (CENELEC), and (iii) European Telecommunications Standards Institute (ETSI). The European Committee for Standardization (CEN) is a European business facilitator for removing trade barriers for industry and consumers. It provides European Standards and technical specifications. The CENELEC prepares voluntary technical standards aimed at developing a Single European Market for electrical and electronic goods and services. The ETSI produces globally-applicable standards for Information and Communications Technologies (ICT), including fixed, mobile, radio, converged, broadcast and internet technologies.
- **Member-states accreditation conformity assessment bodies.** In July 2010 a new regulation came into effect establishing common rules and structures for accreditation and market surveillance by member states. Each member state must appoint a single national accreditation body, which in turn must recognize the validity of services provided of other national accreditation bodies that have successfully passed a peer review. Under this system, member states cannot on competence grounds refuse certificates or test reports issued by other EU country-based conformity assessment bodies (CABs). Third-country CABs, such as those located in Indonesia, can take part in the European Union’s conformity assessment activities through mutual recognition agreements (MRAs). However, at the moment Indonesia does not have any MRAs with the European Union, it does have MRAs with Asia Pacific Economic Cooperation (APEC) and the Association of Southeast Asian Nations (ASEAN).
- **Restrictions on Chemicals under REACH:** The regime for the registration, evaluation, authorization and restriction of chemicals (REACH regulation) entered into force in 2007 to streamline previous EC legislation on chemicals. The European Chemicals Agency (ECHA) manages the technical, scientific and administrative aspects of the regulation. Under REACH, EU member countries must appoint a competent authority to cooperate with ECHA and the European Commission to carry out implementation of the regulation. The competent authority must register those chemicals that are manufactured or imported in a quantity above one ton a year, and assess the risks from their manufacture and use. The principle of nondiscrimination ensures that REACH is applied equally to locally manufactured and imported products throughout the European Union.

62. In cases where third-party certification is required, the conformity assessment is carried out by institutions designated by member states. For imports from non-European countries, compliance checks for product safety requirements are undertaken by member state authorities in charge of market surveillance, in cooperation with customs.

- **Sanitary and phytosanitary (SPS):** The European Commission applies five principles to its food safety activities: (i) food safety at all stages of the food chain; (ii) risk analysis as a fundamental component of food safety; (iii) assignment of full responsibility to producers and intermediaries for product safety of imported, produced, processed, and distributed products; (iv) traceability of products at all stages of the food chain; and (v) citizen rights to accurate and transparent information from public authorities. Key elements of the regulatory environment are as follows:
  - **EFSA:** The European Food Safety Authority (EFSA) operates as the supranational independent risk assessment body.
  - **RASFF:** Under the Rapid Alert System for Food and Feed (RASFF), member countries must notify the European Commission about measures requiring rapid action to protect animals and people.
  - **Phytosanitary Certificate:** The European Commission's phytosanitary regime covers the monitoring and control of pesticide residues, and it applies preventive measures against the introduction and spread of pests and plant diseases in the European Union. Under this regime, imports of specified plants and plant products like fresh fruit and vegetables must be accompanied by a phytosanitary certificate, issued by the national plant protection organization of the exporting country. Shipments are subject to a plant health check involving a documentary, identity, and physical check to ensure compliance with the EC's import requirements. Reduced frequency health checks apply to some products from specific countries, based on risk profiling.
  - **Genetically Modified Foods:** Traceability requirements apply to genetically modified (GM) food and feed to facilitate the withdrawal of products in case of unforeseen adverse effects on human and animal health. They also serve to facilitate labeling of genetically modified organisms (GMOs). Suppliers are required to inform those receiving the product that it contains GMOs, and must label their products accordingly.

## 7.2 Market Access Issues of Focal Industries

### 7.2.1 Fisheries Industry

The key elements of the regulatory environment for the fisheries industry are as follows:

- **Common Fisheries Policy:** The Common Fisheries Policy (CFP) is the fisheries policy of the European Union. It sets quotas on the amounts of each type of fish that member states are allowed to catch. The CFP currently has four components: (i) regulation of production, quality, grading, packaging and labeling; (ii) encouraging producers organizations intended to protect fishermen from sudden market changes; (iii) setting minimum fish prices and financing buying up of unsold fish; and (iv) setting rules for trade with non-EU countries. Under the Common Organization of the Markets (COM), a system of trade creation with third countries allows the fish-processing industry to be supplied in a stable manner at competitive prices from countries like Indonesia. The intent is to ensure price stability and guarantee fair prices to producers.

**Box 7.1: EU Market Access for Fisheries**

Tariffs:	MFN	GSP
Average	10.8	7.1
Maximum	23.0	19.5
Minimum	0.0	0.0

**Product-Specific Requirements:**

- Control over illegal fishing.
- Health control of fishery products intended for human consumption.
- Health control of fishery products intended for animal consumption.
- Labeling requirements.
- Rules of origin.

Sources: Tariffs provided by European Commission, Trade Directorate; requirements from EC Helpdesk.

- **EU Support to the Domestic Fisheries Industry:** EU support for the sustainable development and structural adjustment of the fisheries and aquaculture subsector is provided through the Financial Instrument of Fisheries Guidance (FIFG) (structural measures in the fisheries and aquaculture subsector). Assistance is specifically granted for the restructuring of fishing fleets, aquaculture,

processing and marketing circuits, port facilities, and the revitalization of areas that depend on fisheries. There is also a Common Market Organisation (CMO) in Fishery and Aquaculture Products that provides financial compensation, carry-over aid, and private storage aid to members of the CMO. It also provides compensatory payment for the domestic tuna industry.

- **Control over Illegal Fishing:** Beginning 1 January 2010, a certification scheme applies to marine fishery products.<sup>63</sup> It does not, however, include aquaculture products like freshwater fish and ornamental fish. Otherwise, imports of fishery products must be accompanied by a catch certificate to demonstrate that the products concerned do not originate from illegal, unreported and unregulated (IUU) fishing. The certificate must be submitted by the importer to the competent authorities of the EU member country to which the product is destined at least three working days before the estimated time of arrival at the place of entry into the EU territory. Beforehand, the certificate must be validated by a public authority in the home country of the fishing vessel that caught the fish to ensure that fishing vessels flying its flag comply with international rules on conservation and management of fisheries resources. The competent authorities of the EU member country can carry out all of the necessary verifications to ensure the legality of the products.

For Indonesian exporters shipping fishery products to the EU markets, the following are the specific market access requirements for fisheries:<sup>64</sup>

- **Tariffs:** For fishery products, the average MFN rate is 10.8 percent, with a range of 0 to 23 percent; the average GSP rate is 7.1 percent, with a range from 0 to 19.5.<sup>65</sup> For crustaceans, an ad valorem tariff of 11.1 percent applies to third countries, with a range of 6 to 18 percent; the preferential tariff rate for GSP recipient countries is 5.1 percent, with a range of 2.1 to 14.6 percent.
- **Specific requirements cover** (a) control over illegal fishing; (b) health control of fishery products intended for human consumption; (c) health control of fishery products intended for animal consumption; (d) labeling requirements; and (e) rules of origin. These requirements are summarized below and detailed in Annex A as they relate specifically to Indonesia:
  - o Imports of fishery products into the European Union are subject to official certification, which is based on the recognition of the competent authority in the country by the European Commission. Specific conditions apply for imports of live or processed bivalve mollusks (e.g. mussels and clams), echinoderms (e.g. sea urchins) or marine gastropods (e.g. sea-snails and conchs). These imports are only permitted if they originate from approved and listed production areas.
  - o The national authorities of Indonesia are required to give guarantees on the classification of fishery products and the close monitoring of the production zones to exclude contamination with certain marine biotoxins causing shellfish poisoning. In the case of aquaculture products, a control plan on heavy metals, contaminants, residues of pesticides and veterinary drugs must be in place to verify compliance with EU requirements.
  - o Imports are only authorized from approved vessels and establishments like processing plants, freezer or factory vessels, cold stores that have been inspected by the competent authority of the exporting country and found to meet EU requirements. Indonesia's establishments providing fishery products are on the European Commission's Third Country Establishments List and those establishments are therefore able to export to the EU market.<sup>66</sup>
  - o Inspections by the Commission's Food and Veterinary Office are necessary to confirm compliance with the above requirements. Border inspections are carried out, the frequency of which depends on the risk profile of the product and also on the results of previous checks.

63. European Commission, "Commission Regulation (EC) No 1010/2009 of 22 October 2009 laying down detailed rules for the implementation of Council Regulation (EC) No 1005/2008 establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing". Available: <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2009:280:SOM:EN:HTML>

64. The following information draws on material available at the European Commission's Helpdesk for developing countries. Available: <http://exporthelp.europa.eu>.

65. Based on data provided to the Study Team by the European Commission.

66. For a list of approved fishery establishments in Indonesia, see European Commission, "Indonesia Fishery Products". Available: [https://sanco.ec.europa.eu/traces/output/FFP\\_ID\\_en.pdf](https://sanco.ec.europa.eu/traces/output/FFP_ID_en.pdf).

- o Under the rules of origin applicable to GSP status, all fishery products should be wholly obtained in the country from which the fish or crustaceans originate.

## 7.2.2 Agri-Food Processing

The key elements of the regulatory environment for the processed agri-foods industry are as follows:

- **Common Agricultural Policy:** The Common Agricultural Policy (CAP) protects agriculture throughout the European Union by controlling prices and levels of production and by subsidizing farmers. About 40 percent of the EC budget is directed to this support scheme under the existing farm policy that extends to 2013.<sup>67</sup> The mechanisms used by the CAP to maintain commodity price levels within the European Union and subsidize production are as follows:

- o Import duties are applied to specified goods imported into the European Union in order to raise the world market price to the EU target price.
- o Import quotas restrict the amount of food imported into the European Union.
- o The European Commission maintains the internal market price between the intervention price and target price by purchasing goods when the internal market price falls below the intervention level.
- o Direct subsidies are paid to farmers according to area of land in cultivation. This approach supersedes the previous method of paying farmers for the amount cultivated of a particular crop. Its introduction will be completed by 2011, although some EU member governments will retain control over how the new scheme is introduced.
- o Legislative harmonization within the European Union is intended to ensure a level playing field for commodity trade between member countries.

### Box 7.2: EU Market Access for Agri-Foods

Tariffs:	MFN	GSP
Average	16.9	12.4
Maximum	40.0	36.5
Minimum	0.0	0.0

#### Product-Specific Requirements:

- Health control of non-animal foodstuffs.
- Health control of products of animal origin for human consumption.
- Plant health control.
- Packaging.
- Rules of origin.

Sources: Tariffs provided by European Commission, Trade Directorate; requirements from EC Helpdesk.

- **Sanitary and Phytosanitary Measures:** Measures related to Sanitary and Phytosanitary (SPS) are intended to protect the health of people, animals and plants. To this end, the European Union applies control standards over food and food product hygiene, animal health and welfare, plant health. It also provides rules on appropriate labeling for these foodstuffs and food products. This policy follows a so-called 'From the Farm to the Fork' approach that ensures a high level of safety for foodstuffs and food products at all stages of the production and distribution chains.<sup>68</sup> This approach applies to food produced within the European Union and those imported from third countries.
- **Environmental Regulations:** The principal components of the environmental legislation relating to the processed foods industry are (a) Integrated Pollution Prevention and Control Directive; (b) directive on packaging and packaging waste; (c) Framework Directive on Waste; and (d) climate change scheme known as the Emission Trading Scheme (ETS). The current ETS is compulsory for large food and drink companies, and is intended to reduce greenhouse gas (GHG) emissions caused by large installations at least cost.
- **Rules of Origin for GSP Status:** The major materials such as fruits, nuts or other parts of plants and animals used in processing should be wholly obtained in the originating country, e.g., Indonesia. Manufacturing material used in the processing of the product should not exceed 30 percent of the ex-works price of the product for the non-originating materials.

67. EU Observer, "Parliament sets out demands on CAP reform". 08 July 2010. Available: <http://euobserver.com/9/30449>

68. For details, see European Commission, "Food Safety: General Provisions". Available: [http://europa.eu/legislation\\_summaries/food\\_safety/general\\_provisions/index\\_en.htm](http://europa.eu/legislation_summaries/food_safety/general_provisions/index_en.htm)

For Indonesian exporters shipping processed agri-food products to the EU markets, the following are the specific market access requirements in agri-food products:<sup>69</sup>

- **Tariffs:** For meat preparations, an ad valorem tariff of 16.9 percent applies to third countries, and a preferential tariff rate of 12.4 percent applies to Indonesia. For processed cereals and starches, an ad valorem tariff of 6.4 percent plus 24.6 euro/100 kg and a non preferential tariff quota applies to third countries, and a preferential tariff rate of 7.4 percent applies to Indonesia. For preparations of vegetables, fruit, nuts or other parts of plants, an ad valorem tariff of 10.9 percent applies to third countries 14.4 percent (no preferential rate). Duty rates vary across individual products within each category.
- **Specific requirements** cover (a) health control of non-animal foodstuffs; (b) health control of products of animal origin for human consumption; (c) plant health control; and (d) packaging. Imports of fishery products into the European Union are subject to official certification, which is based on the European Commission's recognition of the competent authority in the country. Indonesia's currently has no establishments providing processed animal products on the European Commission's Third Country Establishments List, and there are therefore no exports of animal products to the EU market. Before being allowed entry into the EU market, Indonesian establishments would need to be approved by the national competent authority.<sup>70</sup>

### 7.2.3 Electronics

The key elements of the regulatory environment for the electronics industry are as follows:

- Requirements in the electronics sector concern environmental and health-related problems associated with growing volumes of post-consumer waste from electrical and electronic equipment (EEE). These issues have resulted in significant environmental policy initiatives. Globalized supply chain management is important in the adjustments to new environmental requirements. Small and medium-sized enterprises (SMEs) also need to conform to requirements set by global supply chains, or risk being phased out as input providers.
- For exporting countries like Indonesia, it is more effective and cost-efficient to combine adjustment to external requirements for exported EEE with adjustment to domestic needs for sound national collection and management of EEE waste, a process that extends further than mere recycling.
- For GSP status, the material used in the manufacturing process cannot exceed 30 percent of the ex-works price of the product for the non-originating materials under the rules of origin.

#### Box 7.3: EU Market Access for Electronics

Tariffs:	MFN	GSP
Average	2.8	1.7
Maximum	14.0	7.0
Minimum	0.0	0.0

#### Product-Specific Requirements:

- Essential requirements.
- Conformity assessment.
- CE marking.
- Market surveillance
- Marketing requirements
- Rules of origin

Sources: Tariffs provided by European Commission, Trade Directorate; requirements from EC Helpdesk.

For Indonesian exporters shipping electronics products to the EU markets, the following are the specific market access requirements:<sup>71</sup>

- **Tariffs:** For electronics, the ad valorem tariff average of 2.8, ranges from 0 to 14 percent; the average GSP tariff rate ranges from 0 to 7 percent and averages 1.7 percent.
- **Specific requirements** cover (a) essential requirements; (b) conformity assessment; (c) CE marking; (d) market surveillance; (e) marketing requirements; and (f) rules of origin.

69. The following information draws on material available at the European Commission's Helpdesk for developing countries. Available: <http://exporthelp.europa.eu>.

70. For a useful list of frequently asked questions (FAQs) about exporting food products to the EU market, see European Commission "Guidance Document: Key questions related to import requirements and the new rules on food hygiene and official food controls". Health and Consumer Protection Directorate-General. Available: [http://ec.europa.eu/food/international/trade/interpretation\\_imports.pdf](http://ec.europa.eu/food/international/trade/interpretation_imports.pdf)

71. The following information draws on material available at the European Commission's Helpdesk for developing countries. Available: <http://exporthelp.europa.eu>.

## 7.2.4 Furniture Industry

For Indonesian exporters shipping furniture products to the EU markets, the following are the specific market access requirements:<sup>72</sup>

- **Tariffs:** For furniture, an average MFN tariff of 2.3 percent applies to third countries, and an average preferential tariff rate of 0.2 percent applies to Indonesia.
- **EU Eco-Label for Wooden Furniture:** The Community Eco-label or “Flower logo” is the official mark in the European Union for products with the lowest environmental impact in a product range. Its aim is to promote products that contribute significantly to environmental improvements. Participation on the scheme is voluntary. This means that products can be sold within the EU market without the Flower logo.
- **General Product Safety:** Products on the European Union market for consumers, must comply with the provisions laid down by Directive 2001/95/EC of the European Parliament and of the Council (CELEX 32001L0095) designed to protect consumer health and safety.<sup>73</sup> The General Product Safety Directive (GPSD) establishes common provisions on (i) general safety requirement; (ii) additional manufacturer and distributor obligations; and (iii) market surveillance.
- **GSP status:** The value of all the materials from non-originating countries should not exceed 40 percent of the ex-works price of the furniture product under the rules of origin.

### Box 7.4: EU Market Access for Furniture

Tariffs:	MFN	GSP
Average	2.3	0.2
Maximum	5.7	2.2
Minimum	0.0	0.0

#### Product-Specific Requirements:

- EU Eco-Label for wooden furniture
- General product safety
- Rules of origin.

Sources: Tariffs provided by European Commission, Trade Directorate; requirements from EC Helpdesk.

## 7.2.5 Cosmetic Industry

The key elements of the regulatory environment for the cosmetics industry are as follows:

- **Health and marketing conditions for cosmetic products:** Cosmetic products are subject to composition, packaging, labeling, and information requirements in order to be placed on the EU market. These requirements are enforced by establishing liability on the manufacturer or importer for products.
- **Marketing requirements for dangerous chemicals, pesticides and biocides:** The placing on the European Union market of certain chemical products must comply with the marketing requirements laid down by the EU legislation designed to ensure a high level of protection of human health and the environment. The provisions applicable to these products are as follows: (i) General Procedures for the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH); (ii) specific provisions on the classification, packaging and labeling of Dangerous Substances and Preparations; and (iii) specific conditions for Plant Protection Products and Biocidal Products.

### Box 7.5: EU Market Access for Cosmetic

Tariffs:	MFN	GSP
Average	2.5	0.0
Maximum	6.5	0.0
Minimum	0.0	0.0

#### Product-Specific Requirements:

- Health and marketing conditions for cosmetic products.
- Marketing requirements for dangerous chemicals, pesticides and biocides.
- Prohibition of products containing fluorinated greenhouse gases.
- Rules of origin.

Sources: Tariffs provided by European Commission, Trade Directorate; requirements from EC Helpdesk.

72. The following information draws on material available at the European Commission's Helpdesk for developing countries. Available: <http://exporthelp.europa.eu>.

73. For details, see the European Commission, “European Union legislation on general product safety”. Available: [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_99v001/eu/auxi/eu\\_safeprod\\_leg.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_99v001/eu/auxi/eu_safeprod_leg.pdf)

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- **Rules of Origin Applicable to GSP Status:** Materials of the same product classification group as the cosmetic product can be used, provided that the total value does not exceed 20 percent of the ex-works price of the product for non-originating materials. For manufactured cosmetics, the value of all the materials from non-originating countries should not exceed 40 percent of the ex-works price of the product.

For Indonesian exporters shipping cosmetics products to the EU markets, the following are the specific market access requirements:<sup>74</sup>

- **Tariffs:** For cosmetics, an average MFN rate of 2.5, and an average preferential tariff rate of 0.2 percent applies to Indonesia.
- **Specific requirements** on technical standards applicable to cosmetic products cover (a) health and marketing conditions for cosmetic products; (b) marketing requirements for dangerous chemicals, pesticides and biocides (when intended to be used in plant protection products and/or biocides); (c) prohibition of products containing fluorinated greenhouse gases (when used with aerosols for entertainment and decorative purposes containing hydrofluorocarbons); and (d) rules of origin.

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74. The following information draws on material available at the European Commission's Helpdesk for developing countries. Available: <http://exporthelp.europa.eu>.



PART III:

INDONESIA'S POSITION  
TO TACKLE EU MARKET  
POTENTIAL

# 8 Outlook for Exports to EU Market

## 8.1 Export Drivers

EU Import demand for Indonesia's exports can be described as a two-stage process. First, the consumer decides how much of a particular product he or she wants to buy; second, he or she decides from whom to buy the product.<sup>75</sup> The first stage is described in Chapter 5 and is reflected in the magnitude of import demand estimates calculated by the Study Team. In this Chapter, we describe and estimate the EU demand for Indonesia's exports of products from each of the focal industries.<sup>76</sup> Here we provide an intuitive explanation of that relationship, summarize the estimated equations, and use those estimates to generate medium-term forecasts of Indonesia's exports to the EU market for products of the focal industries.

The main drivers of EU demand for Indonesia's exports are the overall demand for EU product imports and price and non-price factors. As mentioned earlier, import demand depends on income in the long-run, while price effects tend to have a transitional effect on that demand. All other things being equal, Indonesia's exports would have a proportional response to EU imports, that is, they would tend to grow by the same proportion as imports. Hence, Indonesia's market shares would remain the same as long as competing suppliers to the market did not alter their market shares through changes in their competitive positions.

Price and non-price factors can affect the competitiveness of Indonesia relative to comparator countries and cause export growth to exceed or fall short of the demand for imports.<sup>77</sup> Demand for Indonesia's exports is therefore driven by foreign market incomes, while deviations from the growth in import demand arise from price and non-price differentials between Indonesia's exports and those of competing suppliers. From the point of view of the European consumer, the price differential depends on both the local currency prices of products originating in the focal industries and the real exchange rate, measured by the nominal exchange rate of Indonesia adjusted by inflation differential with the comparator countries.

Table 10.1 summarizes the income and price elasticities of the demand for Indonesia's exports in the focal subsectors, based on the Study Team's estimated equations. The average foreign income elasticity of export demand of the products from the focal industries equals 7 in the short run and 8.4 in the long run. Furniture and electronics have fairly low foreign income elasticities, ranging from 1.3 to 2.5 in the long-run. In contrast, cosmetics, fruit juices and shrimp have long-run foreign income elasticities ranging from 9.3 to 17.2. Although high and therefore very beneficial to exporters, they are within international elasticities of export demand for emerging exports to high-growth markets,

### Highlights of Indonesia's Export Outlook in EU Market

- Indonesia has suffered important losses in EU market shares in all products originating from the focal sectors.
- Export price movements were responsible for some losses, notably in the early part of the decade and in 2007, while the exchange rate pass-through caused by the real cross-rate appreciation of the rupiah relative to the euro brought about significant market share losses in 2002 and 2006.
- However, it was the non-price factors that were consistently responsible for the deterioration in Indonesia's participation of the EU market beginning.
- To the extent that Indonesia could have overcome its supply impediments on exports and maintained its share of the EU market for the focal industry products, foreign exchange revenue from the industry would have been nearly 13 percent higher in 2005-2009 than was actually achieved.
- Overcoming those obstacles will require considerable effort on the part of the industries, particularly in terms of EQI requirements. However, the benefits to the industries are considerable, as are the economy-wide impact that would be produced from additional employment and expenditures on other sectors.

75. In consumer welfare economics, this process is referred to as the 'utility tree'. For the theoretical underpinnings, see Deaton, A. and J. Muellbauer (1980), "An Intertemporal System of Dynamic Consumer Demand Functions". CLE Discussion Paper. For the econometric technique used to measurement the process, see Brown, M., and D. Heien (1972), "The S-Branch Utility Tree: A Generalization of the Linear Expenditure System". *Econometrica* 40(4): 737-47.

76. A Technical Appendix on the quantitative methodology used by the Study Team is available upon request.

77. Note that the supply of imports is always assumed to perfectly price elastic in the international trade literature. For a derivation of the complete system of trade in the utility tree, see Montague Lord, *Imperfect competition and international commodity trade: theory, dynamics, and policy modelling*. Clarendon Press, Oxford, 1991.

Table 8.1: Income, Price and Non-Price Elasticities of Demand for Indonesia's Focal Export Industries

		Income	Price	Real Cross -Rate	Non-Price
Shrimp	Short-run	15.62	-2.20	-	-0.51
	Long-run	17.17	-2.42	-	-0.56
Fruit Juice	Short-run	10.26	-0.51	0.89	-0.29
	Long-run	11.63	-0.57	1.00	-0.32
Cosmetics	Short-run	6.76	-0.76	0.60	-0.13
	Long-run	9.32	-1.47	1.99	-0.18
Electronic	Short-run	1.99	-1.20	0.35	-0.02
	Long-run	2.48	-1.10	-	-0.02
Furniture	Short-run	0.99	-2.49	0.71	-0.13
	Long-run	1.29	-3.24	0.92	-0.17

Note: - signifies not statistically significant.  
Source: Study Team Calculations.

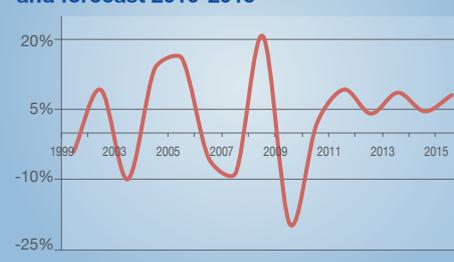
which is characteristic of the crustaceans and essential oils market in the European Union. On average, the demand for exports is price elastic in both the short term (-1.4) and long-term (-1.8). Only fruit juice is price inelastic in both the short and long run.<sup>78</sup> Furniture and shrimp have the highest responsiveness to price changes. Real exchange rates changes are statistically significant in explaining export demand of three of the five products. Cosmetics in particular have a strong responsiveness to real exchange rate variations.

## 8.2 Export Prospects

Projections of export demand for Indonesia's focus products have been generated from the estimated export demand relationships reported in the previous section. The forecasts for real GDP growth of the European Union, prices and the exchange rate are based on the International Monetary Fund's biannual projections.<sup>79</sup> The forecast is for GDP to grow by 1.7 percent in real terms in 2010-2015. We assume unchanged constant euro prices for the products and an average exchange rate of US\$1.3 per euro over the medium term.

Figure 10.1 summarizes the results for the forecast period relative to the historical performance of the product from the focal industries.<sup>80</sup> The graph demonstrates the substantial expansion predicted in Indonesia's exports relative to the European Union's GDP growth, assuming a positive, sustained growth in 2010-2015. Based on the 1.7 percent average annual growth in real GDP of the European Union in 2010-2015, the forecast is for the demand for Indonesia's exports to grow by over 6 percent a year. The historical performance of those exports, nonetheless, shows that the strong responsiveness of exports to income changes has produced considerable year-to-year variations in exports.

Figure 8.1:  
Indonesia's Average Export Volume of Focal Industry Products, actual 2000-2009 and forecast 2010-2015



Note: Unweighted average of selected products of focal industries  
Source: Projections by the Study Team based on econometric estimates and assumptions about economic activity from IMF, World Economic Outlook database.

78. The foreign income elasticity of export demand is a measure used in economics to show the responsiveness, or elasticity, of the quantity demanded of a good or service to a change in consumer income. More precisely, it gives the percentage change in quantity demanded in response to a one percent change in income (holding constant all the other determinants of demand).

79. See International Monetary Fund, "World Economic Outlook Update". October 2010. Available: <http://www.imf.org/external/data.htm>

80. Note that for agri-foods, we have used fruits and vegetables as the leading indicators since the agri-foods industry is a highly heterogeneous industry and therefore subject to structural changes in its composition, which cannot be forecast.

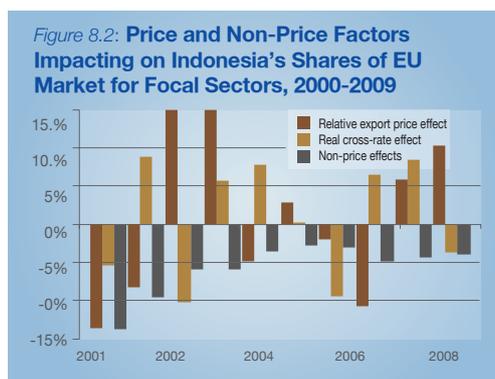
The export projections for individual products are presented in Table 10.2. Among the most dynamic products are fisheries and cosmetics. The other product groups, nevertheless, are also expected to have robust growth rates, ranging from nearly 5 percent for electronics to over 6 percent for agri-foods.

### 8.3 Regaining Market Shares

Indonesia has suffered important losses in EU market shares since 2005 in all products originating from the focal sectors. Our estimates of the export relationships of these products suggest that those losses were largely due to non-price factors, which include supply impediments like EQI limitations (Figure 10.2). Export price movements were responsible for some losses, notably in 2000-2001 and 2007, and exchange rate pass-through caused by the real cross-rate appreciation of the rupiah relative to the euro brought about significant market share losses in 2002 and 2006. However, it was the non-price factors that were consistently responsible for the deterioration in Indonesia's participation of the EU market beginning.

In fisheries, Indonesia's share of the EU market has steadily declined since 2000. It began the decade with 5.9 percent of total EU imports from third countries and it ended the decade with a 4.1 percent share. Our estimates suggest that those losses were largely due to non-price factors associated with supply impediments like EQI limitations. Export price movements had a positive effect on Indonesia's market shares in the first half of the decade, and a significantly negative impact in 2008. Exchange rate pass-through caused by the real cross-rate appreciation of the rupiah relative to the euro was not found to have significantly impact on Indonesia's competitiveness in the EU market. Non-price factors, however, had a consistently negative impact on Indonesia's competitiveness through the decade. That negative impact was especially noticeable at the beginning of the decade and in 2009. On average, the non-price effects on Indonesia's export competitiveness in the EU market more than offset improvements in the relative price of the products themselves, thereby producing an overall reduction in Indonesia's share of EU imports from third countries.

In agri-foods, Indonesia's share of the agri-foods market in the European Union has fallen over the last decade. Our estimates of the export relationship for the Indonesian agri-food industry suggest that those losses were almost wholly due to non-price factors associated with supply impediments like EQI limitations. Export price movements had a favorable impact on market shares, with the exception of 2007 and, to a lesser extent, at the beginning and end of the decade. On average, non-price factors reduced Indonesia's market share by 15 percent. In contrast, the industry's competitive export prices helped to improve market shares by an average of 6 percent during the period. The net gains, however, were not enough to offset the negative effects from EQI and other supply-related factors affecting the industry's performance.



Source: Derived from estimates in Technical Annex to Interim Report 3. Background paper to the Study..

**Table 8.2: Income, Price and Non-Price Elasticities of Demand for Indonesia's Focal Export Industries**

Tariffs:	2001-2009	2010-2015
Fisheries	-10%	7.8%
Agri-Foods	-6%	6.3%
Electronics	18%	4.9%
Furniture	-6%	5.8%
Cosmetics	10%	7.3%
Average	1.4%	6.4%

Source: Projections by the Study Team based on econometric estimates and assumptions about economic activity from IMF, World Economic Outlook database.

In consumer electronics, Indonesia's share of the EU consumer electronics market has

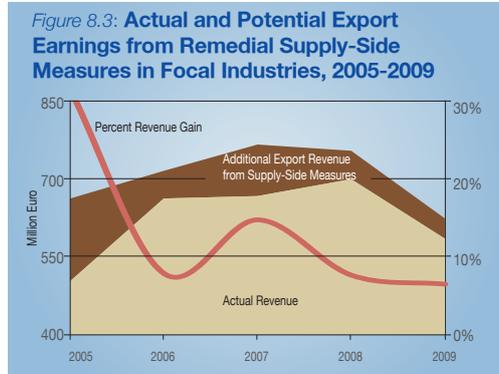
improved modestly in recent years, although considerable scope for improvement remains. Our estimates of the export relationship for the Indonesian consumer electronics industry suggest that there has been a reduction in the earlier negative effects from non-price factors associated with supply impediments like EQI limitations. The improvement in supply conditions is likely to be associated with the increased influence of multinational enterprises in the country, and improved EQI conditions in the components industry. The extent of possible outsourcing will depend on four factors: (i) the technical divisibility of production processes, mentioned in the previous section; (ii) the factor intensity of the production process and the extent to which Indonesia has a cost-advantage in those factors; (iii) the technological complexity of each process and whether Indonesian EMS are capable of providing that technology; (iv) the value to weight ratio of the product, which for consumer electronics tends to be high; and (v) the regulatory and fiscal (tax) policies and the Government's industrial strategy.<sup>81</sup>

The last factor is particularly important since large shifts in government policies and regulations have affected investment interests of both local and multinational firms. In addition to China, Vietnam is seen as an attractive location because of the government's business friendly attitude. One study on the Indonesian consumer electronics industry has found that firms considered Vietnam as a favorable prospective destination for fragmentation because of its relatively strong investment incentives, infrastructure, and access to market.<sup>82</sup> The Indonesian electronics sector therefore faces stiff competition from possible EMS activities in other countries, a situation that underscores the need to establish a favorable investment climate supported by a strong EQI system.

Moreover, in recent years export price movements have eroded the industry's position in the EU market, largely because of China's more competitive prices in that market. To the extent that Indonesia could have overcome its supply impediments on exports and maintained its share of the EU consumer electronics market that it reached at the beginning of the decade, foreign exchange revenue from the industry would have been nearly 10 percent higher in 2009 than was actually achieved.

In furniture, Indonesia has suffered important losses in the EU furniture market since 2005. Our estimates of the export relationship for the Indonesian furniture industry suggest that those losses were largely due to non-price factors associated with supply impediments like EQI limitations. Export price movements were responsible for some losses, notably in the middle of the decade and in 2008-09, and exchange rate pass-through caused by the real cross-rate appreciation of the rupiah relative to the euro brought about significant market share losses in four years during the past decade. However, it was the non-price factors that were consistently responsible for the deterioration in Indonesia's participation of the EU furniture market beginning in 2005 and extending through 2009. Our estimates suggest these non-price factors were responsible for about one-third Indonesia's losses of shares in the EU furniture market during the past decade.

In cosmetics, the industry's performance suffered from volatile prices and a large exchange pass-through to export prices in the early part of the decade. Additionally, the industry experienced market share losses from non-price factors associated with supply impediments like EQI limitations. On average, the negative effect from non-price factors outweighed positive gains from price factors, thereby lowering Indonesia's export market share of the EU market by nearly one-half.



Source: Derived from Study Team Estimates.

81. For details, see Sanjaya Lall, Manuel Albaladejo and Jinkang Zhang, "Mapping Fragmentation: Electronics and Automobiles in East Asia and Latin America". QEH Working Paper Series – QEHWPS115. Working Paper Number 115, 2004.

82. See Siwage Dharma Negara, "Fragmentation of Electronics and Textile Industries from Indonesia to CLMV Countries". IDE-JETRO, Japan. Available: [http://www.eria.org/pdf/research/y2009/no7-3/h\\_Chapter%205%20Siwage%20\(edited-fany\).pdf](http://www.eria.org/pdf/research/y2009/no7-3/h_Chapter%205%20Siwage%20(edited-fany).pdf)



# 9 Indonesia's Export Performance in EU Market

## 9.1 Importance of Focal Industries

### 9.1.1 Importance of Focal Industries to Indonesia

**Fisheries** – Although frozen forms of fish and crustaceans dominate exports, Indonesia is increasingly supplying processed products to overseas customers. The globalization of fishery value chains is also growing fast, and an increasing number of producers in Indonesia and other developing countries are therefore linking their export-oriented fishery products with firms located abroad. Outsourcing of processing operations is also spreading quickly. But for Indonesia the major impediment to bringing processing operations to the country is sanitary and phytosanitary (SPS) requirements in the EU and other developed markets. If Indonesian processing facilities are able to meet quality and safety standards in Europe, their lower processing costs will compare favorably with EU-based fisheries that face reduced margins from higher capital and labor costs and the growing scarcity of fish stocks.

**Agri-Foods** – In the last decade the industry has steadily increased its contribution to the total output value of the Indonesian economy. The share of agri-food production in the economy's

total output rose from 13 percent to more than 16 percent during the decade. This development has produced important benefits to the growth and employment of other sectors because of upstream and downstream linkages to input activities and service-related industries. These effects are particularly important for small and medium size enterprises (SMEs), which predominate in upstream activities.

**Consumer Electronics** – Electronics is the largest contributor to Indonesia's foreign exchange earnings from manufactured exports. It accounts for nearly one-fifth of total manufacturing exports, with consumer electronics leading industrial electronics by a two-to-one ratio. There are currently 235 electronics companies operating in Indonesia, most of which produce basic rather than cutting edge technology-based products. Both the Government and the private sector would like to increase the domestic content of electronics products from the original equipment manufacturers (OEMs). However, major obstacles remain from poor infrastructure, particularly road, electricity and logistics. Moreover, exports of consumer electronics are heavily concentrated in a few basic types of products.

**Furniture** – Indonesia's furniture industry has been one of the fastest growing manufacturing activities in the country. Moreover, while the furniture industry has steadily grown, the value added of wood and other wood product activities to the economy has fallen in all but one year. As a result, the furniture industry's contribution to the total value added of wood-based manufacturing activities has grown from less than one-quarter at the beginning of the decade to more than one-half of all wood-based manufacturing activities. Over 75 percent of Indonesia's furniture exports are in the form of wood-based items. This type of furniture is widely produced throughout the world and is commonly imported throughout the European Union, as well as the United States.

### Highlights of Indonesia's Export Performance to EU Market

- Globalization of value chains for Indonesia's focal industries is providing scale economies for local producers linking their products with overseas firms.
- Despite the European Union's dominance in global consumption of the focal industry products, Indonesia's share of exports destined for the EU market is under-represented in terms of that market's importance.
- Indonesia faces stiff competition from China and other fast growing exporters to the EU market. There is, nevertheless, considerable competition among third country suppliers to that market, and market shares are quickly changing.
- Indonesia's export prices in the EU market are generally competitive in local currency units, but undervalued currencies of many competitors have undermined Indonesia's competitiveness.
- Indonesia is a beneficiary of EU trade preferences, but has not taken full advantage of those opportunities.
- An EU-ASEAN FTA would deepen opportunities for Indonesia through increased foreign investment, technology and knowledge transfers, and development assistance, especially in supporting small producers with as-yet unrealized export potential to the EU market.

**Cosmetics** – Indonesia's interests in natural cosmetics are in both the end products and the ingredients used to make natural cosmetics. Indonesian producers have a natural advantage over suppliers in most other countries because of the country's biodiversity. However, they face stiff competition in both domestic and foreign markets from low-cost producers in China. In the area of end-use products, Indonesia exports beauty makeup preparations in the form of perfumes and fragrances, hair care and styling products. In the area of ingredients used in the production of natural cosmetics, Indonesia mainly exports essential oils of geranium, which accounts for over 70 percent of essential oils, resinoids and terpenic by-products, and essential oils of vetiver, which accounts for most of the remaining exports in this category.

### 9.1.2 Major Export Markets

**Fisheries** – The European Union is the world's largest importer of fishery products, accounting for 25 of the world total. Yet the EU market only accounts of 11 percent of Indonesia's total exports. While the United States and Japan each account for a much lower share (16 percent) of total world imports, Indonesia exports 35 percent of its fishery products to the United States and another 27 percent to Japan. There is therefore considerable scope for Indonesia to increase the amount that it exports to the EU market. If it were to expand its share of exports to the EU market to the same proportion as the European Union's share of world imports, Indonesia's foreign exchange revenue from its fishery exports would more than double, expanding from US\$253 million to US\$561 million in terms of the value of those exports in 2009.

**Agri-Foods** – Agri-food exports of Indonesia are highly concentrated in the ASEAN regional market, with over 40 percent of this industry's exports directed at neighboring countries. The EU and U.S. markets each absorb about 15 percent of Indonesia's agri-food exports. The share of exports destined for countries in Europe, the United States and Japan is small compared with the size and agri-food absorption of those markets. The European Union, for example is the world's largest market for these types of products, and Japan is the world's largest net importer of food products.

**Consumer Electronics** – The European Union is Indonesia's largest export market for consumer electronic. Important export markets are Germany, Netherlands, Belgium and the United Kingdom. The United States is Indonesia's second largest export market followed by that of the ASEAN member countries. Within the Asian region, the most important markets are the Philippines, Malaysia, Thailand, Vietnam, and Singapore for both the domestic market and transshipments to other markets.

**Furniture** – Indonesia's furniture exports are predominantly directed at three markets: the European Union (33 percent of all furniture exports), the United States (30 percent), and Japan (16 percent). Within the European Union, the largest individual country markets are Germany, France, Netherlands, United Kingdom, and Belgium. Among the different types of furniture, over two-thirds of exports to the EU market are in the form of wooden furniture and the remaining one-third is made of bamboo, rattan, cane or osier.

**Cosmetics** – Indonesia's cosmetics exports are largely directed to other ASEAN member countries. Exports to the European Union only absorb 10 of total cosmetic exports, and the bulk of those exports are directed to the large economies of Germany, France, the United Kingdom, the Netherlands and Spain.

### 9.1.3 Major Global Competitors

**Fisheries** – China dominates the global seafood markets for both processed and unprocessed fish. In addition to exports from domestic fisheries sources, China also exports reprocessed imported raw material, adding considerable value in the process. Indonesia ranks number 10 in terms of major world exporters of fish. Other major exporters are Norway, the United States, Canada, Chile and Thailand.

**Agri-Foods** – Five countries dominate third country competition in the EU market for agri-foods: Brazil, Turkey, China, United States and Thailand. Together these countries account for one-half

of the European Union's imports of food products from non-EU suppliers. Indonesia's share of the EU market is modest and there is considerable room for growth. An important growth area is organic food ingredients and food products, since Europe has been unable to supply its population in this sub-sector. Direct exports of organic food ingredients to end customers are possible through specialized companies and supermarket chains.

**Consumer Electronics** – The EU market for consumer electronics is dominated by China's products. Almost 60 percent of all non-EU products imports originate in China. Turkey, with 13 percent of the market, is the only other country with a significantly large market share. Although Indonesia is the seventh largest non-EU supplier of consumer electronics to the market its 2 percent market share is small.

**Furniture** – China's share of world furniture trade increased from 7.5 to 25 percent between 2000 and 2009. This remarkable expansion has been due to China's low-wage labor, access to raw materials, and favorable exchange rates. However, the industry faces rising labor costs, increasing protection of its natural forests, and a lack of branding by the multitude of small and medium size enterprises in the industry. At the same time, several relatively small producers have aggressively increased overseas sales. Vietnam in particular has enhanced its domestic production and overseas sales because of manufacturing wage rates that are even lower than those in China and the Government of Vietnam's support to the industry's upgrading of its processing equipment. Among the major industrialized furniture producing countries, only Germany has succeeded in significantly increasing its share of the global furniture market in the last decade by focusing on quality furniture products.

**Cosmetics** – The top three suppliers to the EU cosmetics market are the United States, Switzerland and China, which together provide three-fourths of all EU cosmetics imports from third countries. There has been considerable competition among these and other suppliers, and market shares have changed considerably in the last ten years. Other foreign suppliers with significant market shares are Japan, Canada and India. Indonesia's market share is small (0.6 percent), although it ranks number 19 in terms of largest foreign cosmetics providers to the European Union.

## 9.2 Export Competitiveness in EU Market

Indonesia ranks number 44 out of 134 countries in the World Economic Forum's Global Competitiveness Ranking, behind comparator countries like Singapore (number 3), South Korea (22), Malaysia (26), China (27), Brunei (28), and Thailand (38).<sup>83</sup> It is also ranked number 121 out of 183 countries in terms of ease of doing business, and number 41 in terms of ease of trading across borders.<sup>84</sup> Past studies on Indonesia's competitiveness have attempted to identify internal and external constraints of the country's trade underperformance relative to many of its ASEAN and other Asian peers.<sup>85</sup> In general, they find that while Indonesia has been a relatively low-tariff country by developing-country standards, non-tariff barriers (NTBs) have increased in the last decade.<sup>86</sup> Equally important, the lack of consistency and a single authority over trade policies have contributed to the proliferation of NTBs.<sup>87</sup> More importantly for purposes of the present study is the finding that general trends about Indonesia's performance and associated competitiveness mask several important developments at the sector, sub-sector or industry level. These more specific developments have taken place in greater protection in consumer electronics and other areas, as well as Infrastructural limitations, restrictions on foreign direct investment, and product and labor market regulations, which have all contributed to the sub-optimal trade performance of Indonesia. These more specific findings underscore the importance of examining the obstacles impeding the development of Indonesia's full export potential to the EU market.

83. See World Economic Forum, "The Global Competitiveness Report 2010-2011". Available: [http://www3.weforum.org/docs/WEF\\_GlobalCompetitivenessReport\\_2010-11.pdf](http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2010-11.pdf).

84. See International Financial Corporation (IFC), "Doing Business". Available: <http://www.doingbusiness.org/rankings>.

85. ADB, "Indonesia: Critical Development Constraints". Country Diagnostics Studies, 2010.

86. See OECD, "Recovery and Beyond: Enhancing Competitiveness to Realize Indonesia's Trade Potential". TAD/TC/WP(2008)14.

87. See Ash Center for Democratic Governance and Innovation, "From Reformasi to Institutional Transformation: A Strategic Assessment of Indonesia's Prospects for Growth, Equity and Democratic Governance". Harvard Kennedy School, April 2010.

The present study goes beyond these generalizations to examine how Indonesia's competitiveness in specific sub-sectors and industries is largely determined by four interrelated conditions: (i) export prices relative to those of competing suppliers to the market; (ii) the magnitude and type of accessible demand; (iii) accessibility and reliability of supporting industries; and (iv) firm strategy and rivalry that affect how various enterprises conduct business. The following sections describe each of these conditions for Indonesia's competitiveness in the EU market.<sup>88</sup>

### 9.2.1 Export Prices and Real Cross Rates

**Real Cross Rates** – Foreign demand for Indonesia's exports is determined by the rupiah-denominated price of exports. From the point of view of European buyers, that price is denominated in euros. The price differential between Indonesia's exports and those of other competitors to the EU market therefore depends on the product price in each supplying country and the cross exchange rate between the rupiah and the euro, adjusted for inflation in each country.<sup>89</sup> What is most striking about exchange rate developments in the last decade is Indonesia's loss of EU market shares in many products, a situation that has paralleled the rise in the real cross-rates of many competing suppliers to the EU market. Notable among the competing suppliers is China, whose undervalued currency has made its products highly price-competitive in the EU market. In contrast, Indonesia has maintained a relatively stable currency so that the rupiah remained nearly unchanged in real terms vis-à-vis the euro. Exchange rate differentials have therefore significantly undermined the price competitiveness of Indonesia's exports in the EU market relative to the same products exported by competing suppliers to that market.

**Fisheries** – The industry-specific conditions affecting the export price of fishery products are largely associated with labor and infrastructure-related costs. In shrimp and crustaceans, Indonesia ranks near Thailand in terms of its price competitiveness, but well below China, Canada, India, Ecuador, Russia and Vietnam. In fresh and chilled fish, Indonesia is the highest priced supplier among the comparator countries. These price variations could reflect differences in the product composition of the two groups, as well as quality differences.

**Agri-Foods** – Indonesia's production costs have been low when compared with neighboring countries' like Thailand and Malaysia, and other competing suppliers' like South Africa and India. This situation has been reflected in the lower nominal unit price of agri-food exports from Indonesia compared with these other countries.

**Electronics** – Indonesia remains a relatively high cost producer of electronics products relative to the leading foreign suppliers of those types of products to the EU market. Although these cost differences could reflect higher quality end products, Indonesia's consumer electronic industry is middle level technology and should therefore have a similar cost structure to that of the leading suppliers like Russia, Korea and China. Its price-competitiveness has, nevertheless improved in recent years as domestic labor costs in China and the other large EU suppliers have risen in constant local currency terms.

**Furniture** – Indonesia has a cost advantage in its proximity to high quality timber and its abundant labor supply, which helps to offset the shipping costs of furniture to the EU market. Indonesia ranks near India in terms of its price competitiveness, but well below Brazil, Malaysia, South Africa, Thailand, China, Taiwan and Vietnam. Only Singapore, Mexico and South Korea have higher unit trade prices. These price differentials could of course simply reflect quality differences.

**Cosmetics** – Because of its proximity to abundant natural cosmetic ingredients, Indonesia is likely to have a cost-advantage with all the large natural cosmetic producing countries. The exception is Brazil, which also has plentiful natural cosmetic ingredients. In fact, only Brazil and China have had lower cost exports than Indonesia in the past few years. Indonesia's therefore has a large and, as yet, unexploited price-competitiveness in the EU market.

88. For details, see the Annexes to this report.

89. The real bilateral exchange rate takes the relative price of tradable and non-tradable products as an indicator of a country's competitiveness level in the foreign trade. The rationale behind this definition is that the cost differential between trading countries are closely related with the relative price structures in their economies. Mathematically, the real exchange rate,  $r$ , is defined as  $r = P_t / P_n = eP^*/P_n$ , where  $P_t$  and  $P_n$  represent the price of tradable and non-tradable products,  $e$  is the nominal exchange rate, and  $P^*$  is the international price of tradables.

### 9.2.2 Demand Conditions

**Fisheries** – Links to overseas consumers exist for some exporters of fishery products that operate in direct collaboration with larger suppliers. Examples are fresh and frozen tuna exporters that operate their own fleet having contract supply arrangements with long line fleet operators, and shrimp processors with a vertically integrated farming operation linked to export activities. These exporters are regulated by the Ministry of Fisheries and Marine Affairs (MMAF), which classifies fish processing operations of enterprises based on their compliance with Good Manufacturing Practices (GMP) and Hazard Analysis Critical Control Points (HACCP) standards. Only establishments that are classified as A are permitted to supply the EC market.

**Agri-Foods** – Indonesia's agri-foods industry is, for the most part, directed to the domestic and ASEAN markets. Consumer tastes and preferences in those markets are vastly different from those in the European Union and the United States. Moreover, ASEAN member country regulations governing marketing, health and packaging are not as strict as those in the European Union and the United States. Despite competitive prices, lack of experience in extra-regional markets has greatly reduced the overall competitiveness of Indonesian firms relative to major suppliers of agri-foods from the United States, China, Brazil, and South Africa.

**Consumer Electronics** – Specialization of countries in various phases of the production and distribution process has led to what is called two-way trade for a country like Indonesia. Imports of component parts may be assembled and exported to foreign markets, thereby appearing in aggregated trade statistics as though Indonesia is importing and exporting the same types of products. For example, the components of television receivers have the same 2-digit trade classification as the finished television products. It therefore appears as though a country like Indonesia is trading the same product, when in fact the country is importing parts and assembling them into the final product before shipping it to foreign markets.

**Furniture** – Few firms are linked directly to overseas consumers. The multitude of micro and small scale enterprises (MSEs) in the industry having little if any networking capabilities prevent them linking up with large chains or independent retailers. This situation often leads to the dependence on commercial intermediaries, which are able to extract economic benefits from their information and linkages with distributors and retailers in foreign markets. The result is a situation that engenders the entrenchment of the current situation for domestic furniture producers, especially MSEs.

**Cosmetics** – Indonesia's natural cosmetic industry is, for the most part, directed to the domestic market, and few firms are linked directly to overseas consumers. Overseas sales are mostly limited to the regional markets within the ASEAN community, where regulations governing marketing, health and packaging are not as strict as in the EU and US markets.

### 9.2.3 Industry Networking

**Fisheries** – The fishery industry is composed by the formal sector that operates in a regulated market and often supplies the more than 700 fish processing enterprises in the country. Those processing units include eight fish canneries and about 50 processors of fresh and frozen tuna products. Other types of enterprises are primarily fish freezing, salting and drying processors. For the large number of small vessels and aquaculture producers, there are large numbers of domestic traders and distributors who consolidate fishery products originating from widely dispersed fishery and landing sites and provide them to domestic and export markets.

**Agri-Foods** – Indonesian producers lack overseas networking capabilities with distributors in EU and US markets. Supermarkets now dominate food sales in developed markets and are rapidly expanding their global presence. At the same time, international mergers and acquisitions and aggressive pricing strategies have concentrated market power in the hands of a few major retailers. Although global sourcing has created new opportunities for the Indonesian agri-foods industry, only large companies are normally able to take advantage of them.

**Consumer Electronics** – The development of the global electronics industry is largely driven by technology diffusion and capability development of countries like Indonesia within global production networks. In these networks, OEMs allocate, or outsource, production, marketing and distribution activities in different countries in such a way as to benefit from input and production costs, technological activities, marketing, logistic, and other differences. The networks therefore operated through a fragmentation of activities among different countries. While this fragmentation has had a dramatic effect on Indonesia's production, employment, exports and technological activities, the system is effectively footloose, meaning that it is independent of resources other than capital, and skilled and unskilled labor. Changes in entry or exit of activities in a country can therefore take place quickly.

**Furniture** – Furniture production that is concentrated in industrial complexes like the one in Jepara provides important networking support. In these clusters, a large number of MSEs are able to establish supporting and subcontracting relationships that allow them to effectively compete with larger integrated units. Opportunities abound for vertical cooperation along the value chain, and for horizontal cooperation with clusters of similar firms or with dominant firms that can play a lead role in overseas operations.

**Cosmetics** – The industry is dominated by small scale enterprises, which have little if any networking capabilities. This situation prevents them from linking up with large chains or independent retailers, especially with multinationals. Moreover, enterprises are fairly widely distributed in Bali, Lampung, Riau, DKI Jakarta, North Sumatera, and East Kalimantan, making it more difficult for them to network with one another.

#### 9.2.4 Conditions for Conducting Business

**Fisheries** – There is a relatively high degree of competition among the larger fish processing firms and that competition is reflected in firm strategies to increase the volume of fish processing within Indonesia. Strong competition from other foreign suppliers like China, Vietnam, and Ecuador and the costs of switching export markets has intensified efforts to retain or expand existing overseas markets. For the small producers, the large number of enterprises competing for customers gives rise to considerable rivalry. High storage costs and perishability of marine products intensifies competition for customers.

**Agri-Foods** – Access to the EU agri-foods market is subject to stringent food safety and agricultural health standards of the European Commission (EC) and EU member country governments. There is also a trend for supermarkets to go beyond mandatory regulations to begin implementing their own private standards. In an effort to harmonize supply chain standards worldwide for good agricultural practice (GAP), several European supermarket chains and their major suppliers have sought to bring conformity to different retailers' supplier standards. These standards make it difficult for SMEs to compete because of the time and cost associated with obtaining the required audits. Without the certification, it is impossible to sell to supermarkets.

**Consumer Electronics** – Location of production activities depend on political, social and economic stability, good infrastructure, efficient export processing zones (EPZs), access to markets and inputs, and efficient regulatory procedures. The higher the technology involved in the electronics product, the higher the skill level that is needed of workers, as well as technical and managerial capabilities. More mature industries in Indonesia contain a greater proportion of local content than emerging industries, for which there is need of efficient local suppliers, service providers and institutions for training, quality testing, certification, and other EQI requirements of the industry. These EQI requirements explain why OEMs locate in medium-wage economies like Indonesia rather than low wage ones like Laos, Myanmar, or countries in Africa, where skills, capabilities and infrastructure are lacking and regulatory procedures are complex.

**Furniture** – Business strategies of most furniture enterprises are relatively unsophisticated, often based on short-term price concessions, rather than manufacturing and design improvements. Most

firms compete on the basis of price with similar products from their competitors. They also compete in their ability to maintain strategic alliances with commercial intermediaries or in their subcontracting arrangements with larger firms. There are no business networks providing direct furniture sales to overseas customers and, as a result, most companies are dependent on commercial intermediaries to place their products abroad.

**Cosmetics** – Business strategies of most natural cosmetics enterprises remain relatively unsophisticated and largely directed at domestic consumers. Most firms lack knowledge about pricing policies of similar products from their overseas competitors. Lack of overseas contacts makes companies dependent on commercial intermediaries to place their products abroad. Overcoming these obstacles is difficult because of the large number of market segments and distribution channels in Europe. The existence of different market niches requires different marketing and distribution strategies than higher-volume markets. There is also considerable variation among European markets, depending on national preferences, location, and age groups.

### 9.3 International and Regional Trade Agreements

#### 9.3.1 Indonesia Membership in WTO, ASEAN and APEC

Indonesia is an original and an active Member of the WTO. It is also a founding member of ASEAN and Asia-Pacific Economic Cooperation (APEC). Within ASEAN, Indonesia participates in the Common Effective Preferential Tariff (CEPT) Scheme, which aims to achieve an ASEAN Free Trade Area (AFTA). The CEPT tariff reductions are granted on a reciprocal basis and local-content requirements apply. Indonesia has already reduced tariffs on 11,034 tariff lines to 5 percent or less for products of ASEAN origin.<sup>90</sup> Under the terms of AFTA, Indonesia applies three lower tiers of 0 percent, 2.5 percent, and 5 percent for all goods imports from ASEAN members that meet the AFTA rules of origin requirements.

In APEC, Indonesia has been instrumental in advancing regional and global trade and investment liberalization.<sup>91</sup> The 21 APEC economies collectively account for 46 percent of world trade and 57 percent of global GDP. APEC member countries aim to achieve free and open trade and investment. However there is still significant work ahead to achieve this goal.

Indonesia also has bilateral trade agreements with the United States Japan<sup>92</sup>, New Zealand<sup>93</sup>, and Switzerland. Agreements with important trading partners like India, Australia and the United States have been discussed but not concluded.

#### 9.3.2 Indonesia Market Access under the European Union's GSP

Indonesia is a beneficiary of trade preferences under various international arrangements. It receives special treatment under the Generalized System of Preferences (GSP) from the European Union, Canada, Japan, New Zealand, Norway, Switzerland, United States, Australia, and Turkey. The European Union's GSP grants products imported from GSP beneficiary countries either duty-free access or a tariff reduction. From the total EU imports from Indonesia of 13 billion euros, almost 40 percent is eligible to the preferential treatment under the GSP facility.<sup>94</sup> Indonesia could, however, improve its usage of the GSP since only about 3 billion euros of imports are actually covered under the scheme. Indonesian export products, which have especially been using the GSP facility, are telecommunications instruments, television and audio equipment, garments and footwear.

In order to be eligible for the tariff preferences under the GSP, products exported from Indonesia must fulfill rules of origin. In general this means that goods must either (a) be manufactured from raw materials or components which have been grown or produced in the beneficiary country, or (b) at least undergo a certain amount of working or processing in the beneficiary country. Generally, all

90. WTO Secretariat, "Trade Policy Review: Indonesia". Report by the Secretariat, WT/TPR/S/184/Rev.1, 2007.

91. The material on APEC draws from WTO Secretariat, "Trade Policy Review: Indonesia". Report by the Secretariat, WT/TPR/S/184/Rev.1, 2007.

92. See <http://www.worldtradelaw.net/fta/agreements/JapIndoFTA.pdf>.

93. See <http://www.asean.fta.govt.nz/indonesia-bilateral-linkages/>.

94. Based on information available at [http://ec.europa.eu/delegations/indonesia/eu\\_indonesia/trade\\_relation/market\\_access/index\\_en.htm](http://ec.europa.eu/delegations/indonesia/eu_indonesia/trade_relation/market_access/index_en.htm)

working and processing for origin purposes must have been carried out in the beneficiary country of export. However, “regional accumulation” applies for ASEAN countries, which means that when a product has been manufactured in two or more ASEAN countries, inputs from other ASEAN countries are treated as if they originate in the exporting beneficiary country.

The GSP scheme is currently working under the regulation for 2009-2011.<sup>95</sup> The scheme could be revised after 2011 for Indonesia and other countries since there are rules for graduation from the system. Graduation is triggered when a country becomes competitive in one or more product groups and is therefore considered no longer to be in need of the preferential tariff rates. Triggers bring about either a suspension of preferences or their re-establishment whenever a country’s performance in the EU market over three years exceeds or falls below a set threshold. The calculations for these triggers are made on the basis of the ‘product sections’ in the Harmonized System (HS). Under the current GSP Regulation for 2009-11, Indonesia has had preferences re-established for wood and articles of wood, and it has had no suspension of preferences in any product group.

### **9.3.3 Indonesia’s Partnership and Cooperation Agreement (PCA) with European Union**

Indonesia has committed to a policy dialog with the European Union to enhance cooperation in the areas of trade and investment, and in areas like the environment, energy, education, science and technology, migration and counter-terrorism. It is also working through its ASEAN membership towards the establishment of a Free Trade Agreement (FTA) with the European Union.

In July 2009 Indonesia and the European Union (EU) signed a Partnership and Cooperation Agreement (PCA) covering diverse areas of cooperation that included trade and investment.<sup>96</sup> The PCA with Indonesia is the first such agreement to be signed by the EU with an Asian country. New areas of cooperation are being explored, including those related to research and development, and sectoral committees that will help to identify opportunities and more rapidly address obstacles in key sectors of commercial interest. As well as trade and investment, the PCA provides opportunity to expand EU engagement in environment, energy, education, science and technology, migration and counter-terrorism. A new EU-Indonesia Human Rights Dialogue was also launched in 2009 to intensify exchanges on questions of mutual interest.

95. Based on information available at [http://trade.ec.europa.eu/doclib/docs/2008/july/tradoc\\_139988.pdf](http://trade.ec.europa.eu/doclib/docs/2008/july/tradoc_139988.pdf). Also available at [http://www.europa-eu-un.org/articles/en/article\\_8044\\_en.htm](http://www.europa-eu-un.org/articles/en/article_8044_en.htm).

96. This section is based on material from Alexander C. Chandra, “Working towards mutually beneficial economic relations: Indonesia’s expected challenges in pursuing an FTA with the EU”. International Institute for Sustainable Development (IISD) , September 2009. Available: <http://www.scribd.com/doc/34166567/Indonesia%E2%80%99s-expected-challenges-in-pursuing-an-FTA-with-the-EU>.

# 10 EQI Constraints in Focal Industries

## 10.1 Cross-Cutting Issues

The common EQI issues for Indonesian industries marketing their products in the European Union are related to testing and accreditation and, in the case of fish and agri-foods, food safety and SPS requirements.

**Food Safety and SPS Requirements:** In the case of fish, the Ministry of Fisheries and Marine Affairs (MMAF) of the Government of Indonesia is the Competent Authority (CA); in the case of agri-foods, the Ministry of Agriculture and Ministry of Health regulate the industry. The National Agency for Food and Drugs (BPOM) is cooperating with the European Union to establish the National Rapid Alert System for Food products in Indonesia. Through this program, the European Commission is providing technical assistance to strengthen national capacities in the risk management for food safety through establishing a national Rapid Alert System for Food in Indonesia. The mechanism gathers and analyzes food safety information coming from border inspections and domestic market surveillance.

**Laboratory Testing:** A common issue among industries is the lack of competence of testing laboratories. Laboratories often do not have the facilities to perform the appropriate tests needed to comply with EU requirements. Moreover, quality assurance, calibration and method verification needs improvement. Proficiency tests and certified reference materials are rarely used. As a result, Indonesian laboratories are often unable to perform all testing and analysis required by the European Union.

**Accreditation:** There are numerous bodies in each industry that provide certification for Good

Aquaculture Practice (GAP), Good Handling Practice (GHdP), Good Manufacturing Practices (GMP) and Hazardous Analysis and Critical Control Point (HACCP). One common certification body is the National Accreditation Body of Indonesia (KAN), which provides accreditation services in the following areas: (i) quality management system certification bodies; (ii) environmental management system certification bodies; (iii) food safety system management certification bodies; (iv) information security management system certification bodies; (v) product certification bodies; (vi) personnel certification bodies; (vii) eco-label certification bodies; (viii) organic certification bodies; (ix) testing laboratories; (x) calibration laboratories; (xi) inspection bodies; and (xii) medical laboratories. To ensure measurement traceability from test result, calibration result and inspection result, KAN established the traceability to International System of Units (denoted SI) to comply with the international structure of laboratory accreditation and mutual recognition arrangements (MRAs) under the International Laboratory Accreditation Cooperation (ILAC) and Asia Pacific Laboratory Accreditation Cooperation (APLAC).<sup>97</sup>

### Highlights of Export Constraints

- Indonesian industries confront common EQI issues in the EU market related to testing and accreditation.
- Indonesian laboratories are often unable to perform all testing and analysis required by the European Union
- Accreditation by the large number of certification bodies are not always recognized internationally.
- For Indonesian food products the major impediment to bringing processing operations to the country is SPS requirements in the EU market.
- For fisheries, quality and food safety improvements are needed in fish vessels, fishing ports and at landing sites, while in fish farming the presence of antibiotics in fishery products remains a major issue for Indonesia's export to the EU market.
- In consumer electronics, EQI issues range from product design to components purchases, assembly and packaging.
- In furniture, EQI issues relate to the moisture content of woods to prevent cracking, , standardization of products, quality of the finished products, and safety testing.
- In natural cosmetics, the most important EQI issue is the ingredients used in new products, where EC rules apply maximum concentration rates of allowable ingredients.
- Apart from EQI limitations, major obstacles remain from poor infrastructure, particularly road, electricity and logistics, as well as lack of marketing expertise and networking in extra-regional markets.
- SMEs confront great challenges in meeting EU standards since they often lack information and face excessively high costs in meeting those standards.

97. The International System of Units (abbreviated SI from the French Le Système International d'Unités) is the modern form of the metric system and is generally a system of units of measurement devised around seven base units and the convenience of the number ten. It is the world's most widely used system of measurement, both in everyday commerce and in science

SMEs: Small and medium size enterprises (SMEs) confront far greater challenges than large enterprises in meeting the standards needed to market their products in the European Union. Many MSEs are unable to provide the required quality and are often not even aware of the required specifications. Lack of information access, excessive costs associated with meeting standards, and the inability to access credit needed to implement quality standards all contribute to the problem. The Government of Indonesia is attempting to address SME constraints through a series of measures aimed at (i) increasing product quantity; (ii) reducing losses due to non-conforming product; and (iv) ensure supply sustainability. Networking and development of clusters that would provide scale economies to the small producers is also being attempted in many industries. However, the task is of an enormous proportion because of the vast size of Indonesia and the large number of micro and small size enterprises.

## 10.2 Fisheries Industry

Export of fishery products to the European Union requires health certificates. The Indonesian government is responsible for issuing health certificates. The European Union has appointed the Ministry of Fisheries and Marine Affairs (MMAF) of the Government of Indonesia as the Competent Authority (CA).

### 10.2.1 EQI Issues in Wild Catch

Quality issues in wild catch are primarily related to temperature and hygienic conditions on board the vessels and at the harbor. Under present conditions, there is considerable scope for quality and food safety improvements in fish vessels, fishing ports and at landing sites. Inspection of these facilities by the CA needs to be improved. There is insufficient inspection of vessels providing raw material to processors for export to the European Union. Only a small percentage of the operating fishing vessels are inspected by the relevant Indonesian authorities. Block ice factories supplying fishery vessels do not maintain appropriate sanitary standards. Records on fishing vessels are insufficient at both the central and provincial levels.<sup>98</sup> The situation is particularly difficult for micro and small scale fishing enterprises. Quality issues found on small fishing boats are associated with the lack of adequate hygienic and temperature controls. Small fishing boats have problems in complying with the strict hygienic requirements due to insufficient knowledge on hygiene and limited space on the boats. Proper storage of the catch with ice is usually not ensured and hygienic conditions are uncontrolled.

### 10.2.2 EQI Issues in Fish and Shrimp Farming

The presence of antibiotics in fishery products remains a major issue for Indonesia's export to the EU market. This situation is reflected in the European Union's border inspection of 20 percent of aquaculture products originating from Indonesia.<sup>99</sup> To ensure the quality and food safety for aquaculture products, Indonesian fish and shrimp farmers are required to implement Good Aquaculture Practice (GAP).<sup>100</sup> The aim of GAP is to grow and harvest shrimp in a controlled environment by rigorous control of sanitation as well as controlled application of feed, fish drugs, chemicals and biological substances in aquaculture.

The problem is that in practice Indonesian farms are spread over a large area and are often located in remote areas. Extensive traditional farming is usually done by small, family sized businesses. Small farmers lack information on GAP and Good Handling Practices (GHP). At present there is widespread use of antibiotics for disease prevention in fishery farming, since farmers often lack information about EU regulations and restrictions on antibiotics. Transport of shrimps from the farmer to the middlemen is often conducted in containers with unhygienic conditions and without the required use of ice or other types of refrigeration. It is often difficult to trace the shrimps back to the point of farming due

98. Final report of a mission carried out in Indonesia from 23.2.2009 to 6.3.2009 in order to evaluate the control system in place governing the production of fishery products intended for export to the European Union, DG(SANCO)/2009-8044-MR-FINAL, [http://ec.europa.eu/food/fvo/ir\\_search\\_en.cfm](http://ec.europa.eu/food/fvo/ir_search_en.cfm)

99. See (Commission Decision C(2010) 2358). Available: [http://www.fsai.ie/uploadedFiles/Legislation/FSAI\\_-\\_Legislation/2010/04\\_apr2010/Dec2010\\_220.pdf](http://www.fsai.ie/uploadedFiles/Legislation/FSAI_-_Legislation/2010/04_apr2010/Dec2010_220.pdf)

100. See Decree Kep 02/MEN/2007. Available: <http://library.enaca.org/certification/publications/expertworkshop/21%20Aquaculture%20Certification%20Indonesia.pdf>

to the use of middlemen in the collection system. Improved monitoring and controls are needed to overcome this problem.

This situation points to the lack of competence of a large number of fish and shrimp farmers, which is insufficient in the following areas: production process control, knowledge of diseases and disease prevention, antibiotics, application of medicines and feed, applicable Indonesian and EU regulations, GAP and the handling of products. Systematic flow of information to the small farmers is not provided, resulting in insufficient knowledge about GAP and GHP. To overcome this problem, MMAF is currently implementing programs aimed at helping farmers to achieve GAP certification. However, the management system of the Directorate of Production in the MMAF needs to be improved to ensure control of the GAP certification process.

### **10.2.3 EQI Issues in Collection by Middlemen and Transport to Processor**

The collection and transport of shrimp and fish from farms to processors is conducted under uncontrolled conditions. The required cooling chain is not properly implemented and it is still common practice by farmers and collectors to increase the weight by storing the shrimp in water and without ice over several hours as a means of increasing the weight of the shrimp by up to 10 percent. Middlemen collect shrimps from several farmers and usually mix the products from different sources making traceability impossible. Despite the fact that middlemen have been advised to implement GHdP in some areas, implementation of GHdP remains weak.

### **10.2.4 EQI Issues in Fish Processing**

Companies exporting to the European Union need a Company Approval issued by the European Union. Currently 149 exporters are registered and approved. Processing companies exporting to the European Union are required to implement Good Manufacturing Practices (GMP), certified with the “Sertifikat Kelayakan Pengolahan” Grade A (SKP A) and have to be certified for Hazardous Analysis and Critical Control Point (HACCP). The fishery processors are also required to conduct second party audits on their suppliers and must ensure traceability to their sources of raw material. At present, proper application of the required GMP and HACCP is not ensured and numerous shortcomings in hygiene and sanitation issues persist in companies. Notwithstanding the use of certified HACCP and GMP systems by fishery product processors exporting to the European Union, shortcomings in hygiene and sanitation are still evident, indicating that audits are not being properly conducted.

### **10.2.5 EQI Issues in Laboratories**

Improvements in the testing laboratories are needed. However, it appears to be quite difficult for the Government to improve all 88 of those laboratories, as well as three reference laboratories in the fishery sector. One possible approach would be to either consolidate activities of the laboratories, or to focus on a sub-sector of those laboratories and address changes needed within a limited number of them.

## **10.3 Agri-Foods Industry**

Indonesian agri-food producers must comply with the European Union’s food regulation “from Farm to Fork”, which is based on a process-oriented system in which each business operator in the food chain is responsible for ensuring that food placed on the EU market meets the required food safety standards.

### **10.3.1 EQI Issues in Farming**

Good Agriculture Practices (GAP) should be applied in farming to avoid contamination arising from soil, water, fertilizer, plant protection and biocides. Hazardous Analysis and Critical Control Point (HACCP) and hygiene are the most frequently applied measures to ensure food safety. However,

since the application of HACCP is generally not feasible for primary fruit producers, Good Agriculture Practices (GAP) are used. At present, Indonesian small and medium size farmers are unable to provide reliable supplies to processors. To address this problem the Indonesian Ministry of Agriculture has developed a strategy to improve the agriculture sector in Indonesia. It focuses on: (i) increase of production quantity; (ii) reduction of losses due to non-conforming product; (iii) quality and safety of the food; and (iv) sustainability of supply. However, the task is one of an enormous proportion because of the vast size of Indonesia.

### **10.3.2 EQI Issues from Farm to Processor**

In the purchasing process, EQI issues are related to contaminants that are permissible in the product up to a certain concentration specified in EU regulations. Raw material purchased must not contain substances at a level that will exceed the maximum allowed contaminant level in the final product. In fruit juice production usually only visual inspections are performed. Since this procedure does not allow detection of contaminants, the risk of exceeding allowed contaminant level in the final product is high. As a result, Indonesian fruit juice producers, especially those exporting to the European Union, are facing a serious supply problem.

### **10.3.3 EQI Issues in Processing**

The processing of food products must comply with Good Manufacturing Practices (GMP) and with an established Hazard Analysis and Critical Control Point (HACCP) system. SMEs are also often unaware of hygiene problems and the advantages of GMP practices. Many regard the HACCP system as too administrative, too complicated and expensive. SMEs are unaware that these systems' requirements are proportional to the business size and nature of its activities, and thus not as demanding for SMEs carrying out a simple process than for large companies with complex processes. As a result, only large Indonesian fruit juice producers apply GMP and HACCP.

### **10.3.4 EQI Issues in Product Quality Testing**

During final inspection fruit juices must be tested for pesticides, heavy metal and microbiological criteria in relation to food safety. Certificates on these tests are usually required by EU clients. Additional analyses are conducted regarding acidity, total suspended solids, vitamin C, water content, sum of sugar (saccharose, fructose) and citrate acid. Testing can be performed in company owned laboratories or in external laboratories. Large companies usually have their own quality laboratory while smaller companies mostly rely on testing in external laboratories.

EQI issues related to laboratories are associated with problems of achieving traceability and with the lack of proper testing methods. Indonesian laboratories are currently unable to perform all testing and analysis required by the European Union. The laboratories either lack equipment, properly trained analysts or analytical methods. Certified Reference Materials (CRM) are often unavailable and are relatively expensive. Indonesia the National Agency for Food and Drugs (BPOM) and Balai Besar Industri Agro (BBIA) are planning to produce chemical CRM, but a local producer for biological CRM is not likely to be available in the near future. To market agri-foods in the European Union, Indonesian laboratories need have to extend the scope of their testing methods. Required parameters and suitable test methods will have to be identified, applied and verified.

## **10.4 Consumer Electronics Industry**

Relevant EQI issues are the International Electrotechnical Commission (IEC) regulations for safety, the European Electro Magnetic Compatibility (EMC) regulations, Restriction of Hazardous Substances (RoHS) and Waste Electrical and Electronic Equipment (WEEE) environmental regulations. The EQI issues for consumer electronics are (i) design in compliance with technical specifications; (ii)

compliance of technical and environmental requirements for all components; (iii) final inspection of product; (iv) product packaging; and (v) product approval and marking.

#### **10.4.1 EQI Issues in Product Design**

EQI issues in the design phase relate to quality, safety and environment. While designers are usually quite familiar with safety and EMC aspects, they are less familiar with environmental issues. To be in compliance with the European Union's RoHS directive, the design of electronic equipment using hazardous substances needs to be avoided. In addition, all products should also take into account the dismantling and recovery of components and materials for potential re-use and recycling. The design phase is therefore of utmost importance to ensure that all applicable requirements on safety (IEC standards), electromagnetic compatibility (EMC), environmental aspects (RoHS and WEEE) and requirements on packaging and labeling may be fulfilled.

#### **10.4.2 EQI Issues in Component Purchases**

To ensure compliance with RoHS regulations, raw material and components must fulfill IEC safety requirements and not contain hazardous substances. It is therefore necessary that suppliers provide test results and Material Safety Data Sheets (MSDS) on the material and components. Supplier audits are conducted to allow producers to verify that the supplier undertakes the correct quality management and assurance measures. In some cases, producers include clauses in their contracts and agreements with suppliers to ensure that they control adherence to standards. Suppliers of packaging material are also expected to provide all the required information on packaging material. The aim is to control the entire supply chain to ensure that the specifications of all materials and components are met.

#### **10.4.3 EQI Issues in Assembly**

Controls must be performed at all relevant or critical phases of the assembly process. Special attention must be given to areas with high voltage components. Quality management systems such as ISO 9001 are often implemented and maintained to achieve reliable process control. During assembly no particular control measures are applied with regard to EMC and environmental aspects (RoHS & WEEE) as these issues have been considered and controlled during design, purchase and incoming inspection.

#### **10.4.4 EQI Issues in Inspection and Packaging**

During the final inspection the appearance and all functions of the product are checked according to specifications. Tests on electrical safety and environmental compliance are usually not performed, as these aspects have been covered in earlier stages. As a consequence, final inspection does not require extended testing since all relevant aspects concerning safety and environmental issues have been completed in earlier phases of the production process.

### **10.5 Furniture Industry**

The relevant quality parameters in furniture production are (i) compliance with technical specifications, (ii) design, (iii) on-time delivery, (iii) delivery time, (iv) ordering flexibility, (v) illegal logging and sustainable forestry, and (vi) other management certifications.

#### **10.5.1 EQI Issues in Buying and Cutting the Wood**

The major EQI issue relates to the origin of the wood. Teak wood is the main raw material used by Indonesian furniture manufacturers. All teak wood comes from government plantations or from private forests or gardens since it is not indigenous to Indonesian forests, except in some parts of Sulawesi. Nevertheless, even though most teak wood comes from plantations, many buyers are concerned about the issue of illegal logging and sustainable forestry.

### 10.5.2 EQI Issues in Drying the Wood

There are important EQI issues related to possible cracking of wood due to improper moisture content. Appropriate values are achieved by a slow drying process in a kiln dryer. However, many MSEs avoid the drying process because of its high costs, resulting in lower wood quality. MSEs often fail to execute the drying process properly.

### 10.5.3 EQI Issues in Production and Assembly

EQI issues exist on workmanship, materials used and management. Good workmanship is necessary to ensure high-quality products. Components have to be assembled in a way that ensures the product is strong enough for its purpose and will not shrink or tear after it is sent to Europe. Larger companies are more automated and can therefore work faster and with lower tolerance. Components can be assembled to any single product of the same type, which allows for more flexibility and for better organization of the production process. Smaller tolerances, reproducibility, and a well-organized work process will result in products of higher quality. Exporters face major challenges during this production step. Low-quality work will often only be discovered at the buyer's premises or even when it reaches the consumer. Complaints after delivery cannot be corrected anymore, and the loss for the exporter is high. Therefore many exporters supervise this production step with their own personnel.

### 10.5.4 EQI Issues in Finishing

EQI issues involved in finishing exist because many MSEs are unable to provide the required quality in this production step and are often not even aware of the required specifications in this production step. Because of the lack of quality in the finishing process, exporters often buy unfinished products and conduct the finishing on their own. The added value of the finishing process is then lost for the MSEs. Moreover, exporters confront major challenges because low-quality work often is not discovered immediately. After delivery, complaints are difficult and costly to correct, thus the financial loss of the exporter can be significant. Exporting companies and local retailers often take over the finishing process due to these quality problems. They want to ensure the quality of the finishing process and of the final product, so they only buy unfinished products from the producers. Usually they subcontract the finishing service to groups of workers, who are paid a lump-sum amount.

### 10.5.5 EQI Issues in Testing

Some buyers in Europe demand certified safety tests for certain furniture products. In such cases, export companies in Indonesia test their products with foreign testing laboratories and institutions such as Technischer Überwachungsverein (TÜV) or Asian Pacific Inspection (API). One local testing institute is Laboratory for Quality Testing of Export and Import Goods, or Balai Pengujian Mutu Barang Export dan Impor (BPMBEI). BPMBEI is responsible for testing export products, including furniture. Many laboratories are combined in this institution such as instrumental laboratory, textile and toys laboratory, footwear laboratory, food laboratory, cosmetics laboratory, furniture and electro and electronics laboratory. The laboratory also performs tests on safety for furniture. However, the buyers prefer certificates from internationally recognized institutions despite that fact that many tests can be performed in Indonesia. Indonesian producers prefer to conduct the tests in Indonesia as tests in other countries are much more expensive and time-consuming.

## 10.6 Cosmetics Industry

Cosmetics exported to the European Union are subject to EU requirements on composition, packaging, labeling and information provided.

### 10.6.1 EQI Issues in New Product Designs

During the design phase of natural cosmetics, the most important EQI issues are related to the ingredients used in new products. The European Union has identified prohibited ingredients and defined the maximum concentration rates for allowed ingredients.<sup>101</sup> In addition, EU requirements prohibit the use of ingredients that have been tested on animals if an alternative method without animal testing has been validated and adopted by the European Centre for the Validation of Alternative Methods (ECVAM). Both the EU regulation and the Indonesian regulation also contain lists of prohibited coloring agents, preservatives and UV filters.<sup>102</sup>

In Indonesia each cosmetic product has to be approved and registered with the National Agency for Drug and Food Control (BPOM). Effective January 2011, a new ASEAN regulations based on notification will be applicable to Indonesia. A Product Information File (PIF) will need to be provided to BPOM with all necessary data including test results of ingredients and the final product. The main sources of toxicological data on ingredients are the suppliers. Prior to submission for notification the PIF must be assessed regarding quality, efficacy and safety by a certified Safety Assessor. The file will then be submitted to BPOM for review and notification. Companies who have registered their products prior to 1 January 2011 have to provide additional information on safety, side effects and efficacy. Successful completion of the notification and submission to BPOM does not constitute approval for sale or agreement that the product is in compliance with all regulatory requirements. The manufacturer of the products or the distributor bears the full responsibility for compliance with all requirements.

### 10.6.2 EQI Issues in Processing and Testing

EQI issues related to laboratories are (i) lack of international recognition of the Indonesian laboratories, and (ii) the limited number of independent laboratories. Testing in other countries leads to increased costs and requires more time due to distance and transport. SMEs and MSEs need a competent laboratory with reasonable prices to perform product quality testing. Currently only BPOM operates comprehensive testing facilities for cosmetic products but does not have the capacity to serve the cosmetics companies with quality testing. At present other government laboratories such as BPMBEI provide only limited testing.

101. See Annex of Council Directive 76/768/EEC. The National Agency for Drug and Food Control (BPOM) has issued a regulation on cosmetics "Peraturan Kepala Badan Pengawas Obat dan Makanan Republik Indonesia No: HK.00.05.42.1018, 25.2.2008. The regulation defines the product cosmetic and which ingredients are not allowed at all or are allowed up to a certain level.

102. See Annex of Council Directive 76/768/EEC. Annex IV and V Peraturan Kepala Badan Pengawas Obat dan Makanan Republik Indonesia No: HK.00.05.42.1018, 25.2.2008.

# 11 Export Policies and Regulatory Environment

## 11.1 Institutional Framework

### 11.1.1 Trade Policy Formulation

The Ministry of Trade is the main government agency responsible for formulating and implementing trade policies. Under Decree No. 49/M-DAG/KEP/3/2006, the Minister coordinates matters on trade with the following agencies: (a) Ministry of Foreign Affairs for issues related to cooperation and development; (b) Ministry of Finance and the Central Bank for issues on services and e-commerce; (c) Ministry of Agriculture for all issues related to agriculture; (d) Ministry of Industry for issues on negotiations of trade in non-agricultural goods; (e) Ministry of Foreign Affairs and Ministry of Environment for issues on the environment; (f) National Development Planning Body/BAPPENAS for issues on government procurement; (g) Ministry of Justice and the National Agency of Drug Control for issues on intellectual property rights; (h) Ministry for Economy and Indonesia's Investment Coordinating Board for issues on investment; (i) Commission for Supervision of Business Competition and BAPPENAS for issues on competition policy; (j) Ministry of Finance for issues on trade facilitation.

Ultimate responsibility for Indonesia's trade and economic policies lies with the President and the Cabinet. Inter-agency teams coordinate the Government's strategies and positions on trade dialogues and negotiations, and facilitate

the development of strategic sectors.<sup>103</sup> Those sectors are identified in the National Medium Term Development Plan for 2010-2014 (RPJM 2010-14), which emerged as part of the Government's National Long Term Development Plan (RPJPN) 2005-2025. Prioritization is based on a number of development objectives related to (a) adding value to the economy, (b) introducing innovative methods, (c) providing downstream opportunities, (d) strengthening small and medium size enterprises (SMEs), and (e) reducing poverty by generating employment opportunities and offering support to micro and small enterprises (SMEs).

The first inter agency coordinating team is the National Team for Increasing Exports and Investment (Tim Nasional Peningkatan Ekspor dan Peningkatan Investasi or PEPI). Its main tasks cover (a) formulation of policies to improve exports and investments; (b) determine what actions are needed to increase exports and investments; and (c) evaluate strategic issues related to export and investment promotion. The second team is the Indonesian National Trade Negotiation Team, with coordinating responsibility by the Minister for the Economy and chaired by the Minister for Trade. Its main tasks are (a) to improve Indonesia's participation in international forums; (b) to evaluate the impact of international trade issues on the national economy; (c) to prepare and formulate strategies and positions for trade negotiations; and (d) to communicate the results of negotiations to Indonesian stakeholders.

At present the Government lacks a cohesive and integrated trade strategy that reflects the new political and economic realities of the country. Capacity constraints in the Ministry of Trade arise

### Highlights of Indonesia's Export Policies & Regulatory Environment

- The Ministry of Trade collaborates with other agencies in trade-related matters, and to help deliver effective services, the EC is providing support through its Trade Support Programs (TSPs).
- Export price movements were responsible for some losses, notably in the early part of the decade and in 2007, while the exchange rate pass-through caused by the real cross-rate appreciation of the rupiah relative to the euro brought about significant market share losses in 2002 and 2006.
- However, it was the non-price factors that were consistently responsible for the deterioration in Indonesia's participation of the EU market beginning.
- To the extent that Indonesia could have overcome its supply impediments on exports and maintained its share of the EU market for the focal industry products, foreign exchange revenue from the industry would have been nearly 13 percent higher in 2005-2009 than was actually achieved.
- Overcoming those obstacles will require considerable effort on the part of the industries, particularly in terms of EQI requirements. However, the benefits to the industries are considerable, as are the economy-wide impact that would be produced from additional employment and expenditures on other sectors.

103. WTO Secretariat, "Trade Policy Review: Indonesia". Report by the Secretariat, WT/TPR/S/184/Rev.1, 2007.

from both a general shortage of staff, lack of knowledge about trade policies and their application to Indonesia, knowledge limitations about how to assess policies and their potential economy-wide and sector or industry-specific impact, inadequate information about the major issues confronting the global economy and Indonesia's stake in multilateral and bilateral relations, and lack of general management knowhow. Intermittent training and other capacity building projects and programs have helped to reverse this situation, but lack of program cohesion and sustainability has limited their usefulness and impact.

### 11.1.2 Institutional Capacity

The Ministry of Trade and other agencies involved in trade-related matters are working to facilitate and promote Indonesia's exports. Support is being provided by the European Commission's (EC) Trade Support Programmes (TSPs), as well as the World Bank, International Monetary Fund, United States Agency for International Development (USAID), Asian Development Bank (ADB), Centre for Strategic and International Studies (CSIS-Indonesia), and Japan International Cooperation Agency (JICA). Institutional capacity building support has helped to deliver effective services in formulating and implementing trade and investment policies, implementing these policies, negotiating trade agreements, and managing the human resources and operations of the Ministry of Trade and other trade-related agencies of the Government. Significant obstacles remain in coordinating policies and actions plans and programs among agencies. There also remain challenges for the Government in facilitating business formalization and market access for new private sector entrants by working to reduce obstacles both at the national and sub-national levels, improve linkages between producers and distributors in the EU market and elsewhere. These issues are particularly crucial to SMEs, to help them better understand market requirements and the need to adopt new standards and practices to meet those market requirements.

Government's ability to design and implement an effective trade policy framework is constrained by the fragmentation of trade-related activities among ministries. At least 15 government agencies are currently responsible for formulating trade policies, which prevents an effective decision-making process in the implementation of the Government's national and sectoral development plans supporting the country's exports. Most of these agencies have insufficient capability, knowledge and organizational capacity to address the new challenges of the country's trade agenda. Furthermore, there is a general lack of effective coordination of trade facilitating activities and measures among these agencies, and between them and the private sector or civil societies within the country.

## 11.2 Cross-Cutting Policies and Regulations

Indonesia's main general and sector-specific trade policy goals and priorities are to (i) improve its business climate and regional competitiveness; (ii) attract greater foreign and domestic investment, especially in infrastructure and export sectors; and (iii) generate high-quality job growth needed for sustained economic development. To this end, the Government is promoting bilateral, regional, and multilateral trade, with the aim of expanding international markets and supporting global efforts to liberalize trade while protecting Indonesia's economic interests and maximizing the potential benefits for national welfare.

Rules of Origin Certification - Ministry of Trade Decree No. 111/2002 authorizes agencies to issue Certificates of Origin for Indonesia's exports of goods.<sup>104</sup> They are (a) Office of Trade and Industry (provincial and city level); (b) PT Kawasan Berikat Nusantara (bonded warehouse operator, state owned company); (c) Sabang freezone operating board; and (d) Indonesian Tobacco Institute (in Medan, Surakarta, Surabaya and Jember). Each trading country or group of countries set the criteria for certificates of origin according to their own criteria for giving preferences and imposing quotas or restrictions through bilateral or multilateral agreements. For Indonesia, they include the following:

- **Preferential Certificates of Origin:** For the European Union, they include: (i) Certificate in Regard to Certain Handicraft Products; (ii) Certificate Relating to Silk or Cotton Handlooms Products; and (iii)

104. Information based on ADB, "Regional Seminar on Rules of Origin. Country Report: Indonesia." Available: [http://www.adb.org/Documents/Events/2004/Rules\\_of\\_Origin/roo\\_ino.pdf/](http://www.adb.org/Documents/Events/2004/Rules_of_Origin/roo_ino.pdf/)

Certificate of Authenticity Tobacco. For other markets, they include (i) ASEAN CEPT COO (Form D), (ii) Global System of Trade Preference (GSTP), (iii) Certificate in Regard to Traditional Handicraft Batik Fabric of Cotton (Japan); (iv) Industrial Craft Certificate (Australia); and (v) Certificate of Handicraft Goods (Canada).

- **Non-Preferential Certificates of Origin:** For the European Union, they include (i) export certificate for cassava; (ii) certificate of origin for imports of agricultural products; (iii) export license for textile products; (iv) certificate of origin for handlooms textile handicrafts and traditional textile products of the cottage industry; and (v) certificate of origin for textile products that do not qualify for GSP from the European Union. Others include (i) International Coffee Organization (ICO) certificate of origin for coffee; (ii) fisheries certificate of origin to the United States; (iii) certificate of origin for textile and article thereof to the United States; (iv) certificate of origin Form K for textile and article thereof to Canada; (v) certificate of origin Form N for textile product to Norway; (vi) certificate of origin for handlooms textile handicraft, traditional Indonesian handicraft, batik and traditional textile products of the cottage industry shipped to Norway; and (vii) certificate of origin for textile and article thereof to Mexico.

### 11.3 Industry-Specific Policies and Regulations

The Annexes to this Study contain detailed information about the policies and regulations governing the Study's focal industries. In this section we provide a brief summary for each industry.

Fisheries – Indonesia's main fishery authority is the Ministry of Marine Affairs and Fisheries (MMAF). It is responsible for marine and fishery sector planning, management and administration in Indonesia. The Ministry comprised six line offices that consist of an Agency for Marine Affairs and Fisheries and five Directorate Generals covering Aquaculture, Capture Fisheries, Coastal and Small Islands, Marine and Fisheries Resource Controls and Capacity Building and Marketing. Responsibility for local-level marine fishery management rests with the Provincial Marine and Fisheries Service (Dinas Kelautan dan Perikanan Propinsi), which has offices at province, district and sub-district levels. Since the adoption of Law No. 22/1999, the Provincial Marine and Fisheries Services have been given more responsibilities as well as greater autonomy in carrying out their functions, being no longer under the technical supervision of the MMAF.

The basic law governing fisheries is Law No. 31 of 2004 on Fisheries, which replaces Law No. 9 of 1985. The new law underscores the importance of sustainable use of aquatic resources in the development of fisheries. Under Law No. 22 of 1999 on Regional Administration, provincial governments are held responsible for the management, use and conservation of marine resources within territorial waters. Overall compliance with the laws and regulations is the responsibility of the Directorate General of Surveillance and Control of Marine Resources and Fisheries in the Ministry of Marine Affairs and Fisheries. Its jurisdiction is limited to vessels exceeding 30 gross tons, while provincial governorates are responsible for overseeing smaller vessels. The armed forces are also responsible for law enforcement. Lack of cooperation between these agencies weakens their effectiveness.

Notwithstanding recent changes, regulation of the fishing industry remains weak. The key problems are (a) confusion over the jurisdiction of MMAF and other enforcement agencies; (b) lack of adequate infrastructure and manpower to control vessels in the high seas; and (c) weak governance at the provincial level.<sup>105</sup> These constraints have made it difficult for the Government to ensure full compliance with the EC's catch certification requirements. They also weaken the ability of the Government to effectively control illegal, unreported and unregulated (IUU) fishing.

Agri-Foods – The Ministry of Health and Ministry of Agriculture regulates (i) food safety, (ii) packaging, (iii) quality assurance, and (iv) registration. On food safety, the Government of Indonesia has ratified the World Trade Organization (WTO) Sanitary and Phytosanitary (SPS) Agreement through Law No. 7/1994. In order to implement the law, specific requirements for nutrition labeling in foods in Indonesia have been established. Under Act No. 7/1996, every label or advertisement of food must

<sup>105</sup> Didik Mohamed Sodik, "Combating IUU Fishing in Indonesian Waters; the need for fisheries legislative reform", PhD Thesis, University of Wollongong, Australia, 2007.

contain accurate information and the ingredients of the product. Regulation 69 provides additional requirements on food labeling and advertisement. The regulation also applies to foods claiming to contain nutrients, including energy, protein fat, and carbohydrate content as well as levels of vitamins and minerals. Nutrition labeling is also mandatory for foods that are required to be fortified or enriched with specific nutrients required by the national legislations.

Consumer Electronics – The Government has not developed a strategy and action plan that would serve as the basis for regulating and supporting the development of the electronics industry. Instead, it relies on fiscal and non-fiscal incentives to promote the industry. Fiscal incentives are covered under Commercial Ministry Decree No. 137/PMK.011/2008, where incentives are provided for the following: (a) industries with Pioneer Status, i.e., high technology companies; (b) infrastructure-related industries; (c) industries involved in the preservation and protection of the environment. Non-fiscal incentives are also covered under Commercial Ministry Decree No. 137/PMK.011/2008 for (a) quality control services facility; (b) laboratories facility; (c) credit schemes; and (d) standard and certification (Standar Nasional Indonesia(SNI)).

Export Processing Zones (EPZs) in Indonesia are concentrated in two main areas: (a) the Kawasan Berikat Nasantara KBN on the outskirts of Jakarta; and (b) an area in Batam Island in the Riau Islands Province of Indonesia. The Batam EPZ was developed with investment mainly from Singapore. The most important industry located there is that of electronics, followed by precision parts. Although its location provides the Batam EPZ with a large potential for investment in consumer electronics, it suffers from legal uncertainty, labor issues, and poor infrastructure. Labor issues relate to the problems with the minimum wage, severance pay and labor unions, while infrastructure conditions are poor in the areas of road quality and electricity.<sup>106</sup> These constraints make competing areas in nearby countries more attractive, notably, the Iskandar Development Region (IDR) in South Johor, Malaysia, as well as Vietnam and China.

Furniture – Indonesia's exports of products from forest industries are currently regulated by Minister of Trade Regulation No. 02/M-DAG/PER/2/2006 on Rules on Export of Products of Forestry Industries, dated 2 February 2006.<sup>107</sup> Products of forestry industries are specified in Attachment I of the regulation. Forestry companies certified as Registered Exporters of Products of Forestry Industry (ETPIK) by the Minister of Trade may export products of forestry industries (arts. 4 to 6). Article 7 specifies the documents necessary to obtain a certificate of ETPIK. Companies that own a certificate of ETPIK may undergo inspection to verify the legality of documents, export and production activities (arts. 8 and 9). Forestry companies certified as ETPIK must submit to the Director General of Foreign Trade annual production plans, realization of production per semester, annual export plans, and export realization per semester (art. 10). Articles 11-14 contain provisions on the suspension, reactivation and revocation of ETPIK Certificates.

An important aspect of the forthcoming regulatory environment for this industry is the EU-Indonesia Action Plan for Forest Law Enforcement Governance and Trade (FLEGT). A cooperation project between the Government of Indonesia and the European Union to promote the role of forests in the sustainable and equitable development of Indonesia is in progress and the Government of Indonesia and the European Union are negotiating a Voluntary Partnership Agreement (VPAs) that would support forest sector reforms in Indonesia and prevent illegal timber and timber products from entering the EU market.<sup>108</sup> So far there have been three Senior Officials Meetings (SOMs) between the EU Delegation and the Government. In the latest meeting held in Jakarta during March 2010, the Delegation conveyed the progress on a proposed new EC "Illegal Logging Regulation", which is expected to be approved as EU legislation by the end of 2010. It will require EU timber importers to take measures to minimize the risk of illegal timber entering the EU market. The draft regulation foresees that timber imported from countries that have concluded a VPA will be considered as legal.

106. See Wong Poh Kam and Ng Kwan Kee, "Batam, Bintan and Karimun – Past History and Current Development : Towards Being A SEZ". Asia Competitiveness Institute, National University of Singapore, August 2009. Available: [http://www.spp.nus.edu.sg/aci/docs/research\\_outputs/BBK\\_Past\\_History\\_and\\_Current\\_Development\\_Towards\\_Being\\_A\\_SEZ\\_24Aug09.pdf](http://www.spp.nus.edu.sg/aci/docs/research_outputs/BBK_Past_History_and_Current_Development_Towards_Being_A_SEZ_24Aug09.pdf)

107. Minister of Trade Regulation No. 09/M-DAG/PER/2/2007 on Provisions on the Export of Products of Forestry Industry. Available: <http://faolex.fao.org/faolex/index.htm>. The the Basic Forestry Act (No.5/1997) and the Forestry Law (No.41/1999) the primary source of guidance for all forest administration and regulations. It enables forest areas to be classified and delineated according to functions (e.g. protection, production, nature reserves and recreational purposes).

108. For details about FLEGT, see <http://ec.europa.eu/environment/forests/flegt.htm>.

Implementation of VPA would give a significant advantage to timber products from VPA partner countries.

Natural Cosmetics – The Minister of Health has issued Regulation No. 1175/MENKES/PER/VIII/2010 on the registration of enterprises involved in the production of cosmetics.<sup>109</sup> Only companies that are registered and licensed are permitted to produce and distribute cosmetic products to domestic and foreign markets. There are two types of licenses: type A allows the production of all forms and types of cosmetic preparations; and type B only allows the production of basic or low-tech, forms of cosmetics preparations. Type A permits have the following requirements as they relate to possible export: (1) cosmetics are produced by a qualified pharmacist that is fully responsible for the cosmetic product; (2) cosmetics are produced in appropriate facilities in accordance with the characteristics of cosmetic products; (3) the facility contains a laboratory division; and (4) the production methods follows the so-called Good Cosmetic Production Method (CPKB). Type B permits have the following requirements as they relate to distribution abroad: (1) cosmetics are produced by a qualified pharmacist that is fully responsible for cosmetic products; (2) cosmetics are produced in and appropriate facility with adequate technology; and (3) the staff of the facility is able to perform appropriate sanitation, hygiene, and documentation based on CPKB.

Indonesia has also become involved since 2003 in the ASEAN Harmonized Cosmetic Regulatory Scheme. Under this agreement, member countries agree to undertake actions leading to the harmonization of the cosmetics industry so that exports of ASEAN member countries are compatible with the domestic regulations of other members. Harmonization is being developed in the following areas: (i) definition of cosmetics; (ii) cosmetic ingredients listings and their publication in the ASEAN Handbook of Cosmetic Ingredients; (iii) cosmetic labeling requirements; (iv) cosmetic claims guidelines; (v) product registration requirements; (vi) cosmetic import-export requirements; and (vii) guidelines for Cosmetic Good Manufacturing Practice.

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109. Ministry of Health. Regulation of Minister of Health No. 1175/MENKES/PER/VIII/2010. 2010 Regarding the Registration for Cosmetic Production License. Jakarta, Indonesia.

# 12 Business Associations Support

## 12.1 SME Knowledge about EU Market Access Requirements

As part of the present study, interviews were conducted with small and medium size enterprises (SMEs) to gather information about their perceptions and awareness of market access conditions in the European Union. The findings of the survey are as follows:

- **Awareness on EU Standards:** Many of the micro and small enterprises interviewed were unaware of EU market access standards. When questioned about specific standards for their industry, they did not recognize the standards or have any knowledge about their meaning. There were also unaware of institutions that offer certifications. In those cases where SMEs were aware of standards, they did not believe the cost of certification was within their reach. They also expressed concerns about being able to understand the standards, despite recognizing the importance of having those standards applied to their products. In general, SMEs see standards and regulations as a constraint instead of a tool to benefit them, and they perceive the standardization process as being inflexible. Furthermore, SMEs were often unaware of how they could find documentation on standards. They did, however, recognize that stricter requirements would lead to better quality products.
- **Awareness on design required by EU customers:** In general, SME producers awareness about the design required of EU customers is rudimentary. There is generally a lack of understanding about the differences between European customer tastes and preferences and those of Asian consumers. Often distributors in Europe must explain to furniture, cosmetics or agri-food producers about European requirements, a situation that is difficult for micro and small enterprises having no overseas networks.
- **Awareness on Government and Association support:** The findings of the survey reveal that SMEs are generally unaware of government programs or support activities of other agencies that would help them access the EU market. Some SMEs are aware of local organizations but usually express skepticism about the benefits that they could derive from their services. As a result, they are reluctant to join the association.

### Highlights of Business Association Support

- SME survey results point to the lack of awareness of EU market access requirements, product design needed for European customers, and available government support programs. Information dissemination by both Government and business associations is therefore an important means of ensuring that SMEs are able to successfully participate in value chains supplying the EU and other markets.
- In the case of fishers, support services from the major institutions are effective, a situation that was supported under the European Union's TSP-I.
- In agri-foods, the three principal organizations support the industry's competence in food safety, processing and nutrition, especially for SMEs.
- In electronics, the multinationals tend to control R&D, although local research centers and universities provide support to the industry.
- In furniture, there is a wide range of public and private organization that could provide an effective vehicle for micro and small scale furniture makers to gain access to the EU market.
- In cosmetics, both public and private organizations help SMEs to understand international safety standards and packaging requirements to enhance their export potential.

## 12.2 Business Support in Focal Industries

### 12.2.1 Fisheries Industry

The four most important institutions supporting business activity in the fisheries industry are (i) the Ministry of Marine Affairs and Fishery; (ii) the Association for Fish Processing and Marketing Companies in Indonesia; (iii) the Shrimp Club Indonesia (SCI); and (iv) the Seafood Service Center in Surabaya. In general, the support services from these institutions are effective, a situation that has been enhanced by the focused activities of TSP-I in developing their capacity.

In the Ministry of Marine Affairs and Fishery (MMAF), the Production Directorate of the Directorate General for Aquaculture provides guidelines and certification for Good Aquaculture Practices (GAP), and technical guidance on fish farming for various fish species, fish feeding and feed production. The Directorate also provides guidance to farmers during field visits. MMAF has a wide network through the provincial fishery laboratories and has direct access to producers, farmers and shipping vessels.

The Association for Fish Processing and Marketing Companies in Indonesia (AP5I) is a processing and marketing association of Indonesian fishery processors. AP5I has been effective in conducting seminars, training, workshops and meetings with business stakeholders, as well as providing information on markets and applicable regulatory legislation. It publishes a newsletter about relevant issues to the industry. There is, however, no website for the Association, which prevents AP5I from having a wider dissemination of its services. It also supports developing human resources in the fields of planning, production, fishing, cultivation, processing and marketing of fishery products. AP5I endeavors to increase the awareness of its members in quality, quality improvement, and product safety standards such as required GMP standards, HACCP food safety management system, and International Organization for Standardization (ISO) standards. AP5I has excellent access to processors and is therefore capable of disseminating information to its members.

The Shrimp Club of Indonesia (SCI) is a shrimp farmers association that was established in 2005 to tackle global issues on shrimp farming and processing. Issues that are closely followed by SCI include dumping, sustainable aquaculture, traceability and food safety. It has 360 members, mainly intensive shrimp farms on the islands of Sumatra, Java, Borneo, Sulawesi, Lombok, Sumbawa and Bali. The SCI promotes healthy shrimp farming without the application of antibiotics and creates awareness about the environmental impact of shrimp farming and provides guidance on the management of effluents. SCI appears to be a suitable cooperation partner for pilot projects with farmer groups and could facilitate nationwide capacity building for farmers.

The Seafood Service Center in Surabaya provides consultancy and training on market information, market access requirements, including those of the European Union, as well as export assistance, export marketing, management training, and diversification into value-added products. The Seafood Service Center provides Training of Trainers on export marketing and development and trends in the European market for fishery products. This center has been cooperating with Dutch, Swiss and Indonesian projects and is probably the only professional private organization in Indonesia, which provides such services. It appears that this organization works quite effectively for its customers.

Based on field interviews and discussions with both the associations and members, there appear to be adequate support services for the industry. Those currently being provided contribute significantly to improvements in the fishery value chain. Capacity building measures could be planned and performed in cooperation with these four institutions.

### 12.2.2 Agri-Foods Industry

There are three organizations providing supporting services to the food industry: (i) Gabungan Pengusaha Makanan dan Minuman Seluruh Indonesia (GAPMMI); (ii) Ministry of Industry (MOI); and Balai Besar Industri Agro (BBIA-MOI). GAPMMI promotes Indonesian food business in an effort to create a conducive business climate for the food and beverage industry. It seeks to strengthen its members' competence in the field of food safety, processing, health and nutrition. It also acts as a spokesman for the food industry before the Indonesian Government. GAPMMI is actively supporting SMEs by supporting their development and providing networking services for them.

In the Ministry of Industry (MOI), the Directorate of Food and Beverage Industry provides support to SMEs working in the fruit juice production sector. One interesting pilot project in Kuningan, West Java, supports farmers and fruit juice producers by building their capacity in Good Agriculture Practices (GAP). The Directorate also provides technical support for the development of SME fruit processing

companies in the area of fruit juice processing technology. Mol has been effective in providing its services through external consultants knowledgeable in best practices for fruit processing.

Balai Besar Industri Agro (BBIA) conducts research on food processing and provides consultancy, training and counseling to companies in the food production sector. BBIA is also an inspection body for the sterilization of food and inspects the temperature and time of the sterilization process. BBIA also provides Hazard Analysis Critical Control Point (HACCP) consultancy and certification.

### 12.2.3 Consumer Electronics Industry

There are several government and private sector institutions supporting the Indonesian electronic industry. The Ministry of Industry (Mol) provides support through training and information dissemination. The National Standardization Agency (BSN) develops national standards that are generally in line with international standards. Research and development (R&D) is provided by research centers, universities, and other institutions. However, the industry is controlled by multinationals with their own support systems. Those companies convey to their component suppliers the necessary information on quality, safety and environmental issues related to the products. Those business associations that exist provide limited support to local producers.<sup>110</sup>

The major research center for supporting the local industry is Balai Besar Bahan dan Barang Teknik (B4T). It is part of the Ministry of Industry and it provides services on testing, calibration, technical inspection, certification, technical training and research. B4T has good relationships with the electronic industry and conducts tests on electronic products and components. It also provides training to enhance technical standards and testing methods, and it supports BSN in developing national standards. It is likely to be the best conduit for capacity building of local producers in the industry.

### 12.2.4 Furniture Industry

There are several government and private institutions supporting the Indonesian furniture industry. The largest business association is Asosiasi Industri Permebelan dan Kerajinan Indonesia (ASMINDO). A regional association exists in Jepara, known as Asosiasi Pengrajin Kecil Jepara (APKJ). ASMINDO supports exporters, finishing companies and mechanized furniture producers, while APKJ helps small-scale furniture producers. In addition, Balai Pengujian Mutu Barang Ekspor Impor (BPMBEI) is a laboratory that provides quality and safety testing for furniture.

ASMINDO represents more than 2000 companies that are engaged in manufacturing and exporting furniture and furniture-related products, wood working and handicrafts. Its main activities involve marketing and promotion Indonesia furniture, securing raw material supply and financing, warehouse management for raw materials, and channeling of financial resources provided by the Ministry of Cooperatives to micro and small enterprises. It also conducts seminars, training and forums for its members on international marketing, export strategies, furniture design and finishing. ASMINDO participates in major international trade furniture shows and organizes the Indonesia Annual Furniture Fair IFFINA (Indonesia Furniture & Craft Fair). APKJ represents over 60 furniture producers in Jepara. It supports collaboration among producers in an effort to improve their bargaining power. It also supports local forest conservation by ensuring the wood used by the members comes from legal sites and is harvested sustainably and efficiently.

The Laboratory for Quality Testing of Export and Import Goods (BPMBEI) provides testing on furniture for various safety parameters. Other existing laboratories are controlled by the Ministry of Trade (Pusat Pelatihan Export Import; Export Import training centre, in Slipi, Jakarta) and under the Ministry of Forestry (Litbang Perhutanan; Forest Research and Development Division). BPMBEI is well-equipped with measurement devices for testing on furniture. However, it does not provide information to Indonesian furniture industry, and it is not well-known to furniture companies.

110. Two associations that have been identified, and neither maintains a web site or provides information about their activities. They are the Indonesian Electronic and Electrical Household Appliances Industrial Association GABEL (Gabungan Industri Elektronika dan Alat-Alat Listrik Rumah Tangga) and the Association of Electric Goods and Services ABE (Asosiasi Perusahaan Jasa dan Barang Teknik Elektronika).

It is apparent that ASMINDO and APKJ could provide important capacity building services in their respective areas. ASMINDO has the resources for country-wide activities, while APKJ focuses on the producer in Jepara. They would both be useful in projects like FLEGT or national quality improvement programs.

### **12.2.5 Cosmetics Industry**

There are three business associations and two government laboratories supporting the cosmetic sector. The business associations are (i) Persatuan Perusahaan Kosmetik Indonesia (PERKOSMI); (ii) Gabungan Pengusaha Jamu dan Obat Tradisional Indonesia (GP JAMU); and (iii) Asian Cosmetic Association (ACA). The government laboratories are (i) BPMBEI of the Ministry of Trade (MoT), which provides quality and safety testing for cosmetics; and (ii) Balai Besar Kimia dan Kemasan (BBKK) of the Ministry of Industry (MoI), which provides testing on packaging for foods and cosmetics, as well as some limited testing on cosmetic products.

PERKOMSI is the largest cosmetics association, with membership covering both large and small producers and distributors. It collaborates with the Government to prepare and apply regulations concerning the cosmetics business, and it helps members to comply with rules and regulations governing cosmetics. It also supports SMEs and SMEs through training and the provision of information on export opportunities, and it plans to extend its services to information about EU regulations in an effort to help SMEs enter EU markets.

GP-JAMU is a small association for producers and suppliers of natural products. It focuses its activities on Indonesian herbs and traditional medicines, and it supports SMEs and farmers of natural ingredients.

# ANNEXES

A project  
implemented by  
**TRANSTEC &  
EQUINOCCIO**



## INDONESIA'S TRADE ACCESS TO THE EUROPEAN UNION: OPPORTUNITIES AND CHALLENGES

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**November 2010**

This report was commissioned and financed by the European Communities.  
The views expressed herein are those of the Consultants,  
and do not represent any official view of the Commission.



## A. FISHERIES



## A. 0. Executive Summary

In the last decade, the expansion of international trade in fishery products has exceeded the growth in total fish production in the world. This rapid expansion reflects the large increase in consumption of marine products in the EU and US markets as well as many other regions of the world like Asia. Among these fast-growing markets, the European Union is not only the world's largest market, but it is among the fastest growing markets for high-value imports like shrimp, tuna, bass and bream. The prospects for these markets continue to be favorable. Overall, the outlook for the global fishery market is robust, and our medium-term forecast is for EU imports to growth by 8 percent annually.

For Indonesia, the rapid expansion of the global fishery market and the European Union's strong market for high-value imports offers a number of excellent opportunities. In the first place, the industry has the chance to reverse the EU market share losses it suffered in the last decade because of external competition from large exporters like Ecuador and China, as well as the internal inertia in addressing EQI hindrances and trade impediment. Secondly, Indonesia's exports could be increased in terms of traditional exports and diversified into various other fish species and processed products that are in high demand abroad, for example, the main exports from aquaculture are shrimp (unfrozen, frozen and canned), crabs (unfrozen, frozen and canned), frog legs (fresh or chilled), ornamental fish (freshwater and mariculture), mollusks (scallops and snails), including capture products like tuna, jelly fish and coral fish as well as fish fat and oil and shrimp crackers. A third opportunity lies in aquaculture growth and development, where opportunities exist for community-based economic activities and rural development, along with greater foreign exchange earnings from exported aquaculture products. Given that two-thirds of Indonesia's territory consists of marine and inland waters with an abundance of natural resources, the development of aquaculture and sustainable capture fisheries has the potential to make the fisheries industry a leading engines of growth and development for the country.

The risks to programs aimed at promoting Indonesia's fishery exports are capacity and institutional constraints at the industry level and exchange rate policies at the macroeconomic level. There are two pressing problems that are internal to the industry. The first is capacity limitations of institutions providing EQI and the resulting limitations that these inadequacies create for fish and fishery exporters attempting to meet EU market access requirements. The issue has been made all the more

important as large multinationals and some nationally large private retailers in Europe introducing their own standards for food safety and quality, environmental sustainability, and social consciousness. In large part, these initiatives reflect the growing concern of the general public and the retail sector in Europe about overexploitation of fish stocks, and the need for certification of aquaculture in general and of shrimp in particular. The second issue is the lack of adequate coordination and collaboration among central and provincial government agencies and the armed forces in regulating the industry and policing EEZ waters to prevent IUU fishing.

The Ministry of Marine Affairs and Fishery (MMAF) has been appointed by the European Union as the Competent Authority for fishery products in Indonesia. In order to establish the status and the efficient functioning of the MMAF as the Competent Authority it must be ensured that all tests used for conformity assessment provide reliable test results that are internationally recognized. Exporters of fishery products rely on test and inspection facilities as well as on the proper application and supervision of suitable quality ensuring practices during the entire supply chain. The efforts of the MMAF in recent years to improve the quality relevant elements have been very successful and have led to a drastic reduction in the number of rapid alerts issued by the European Union. However, certain non-price constraints on Indonesia's exports of fishery products persist. They can be grouped into five categories: (1) insufficient competence in the fishery laboratories and inspection bodies to achieve international quality standards, (2) lack of traceability in the fishery supply chain at the level of farmers and fishery vessels, (3) shortcomings in the implementation and certification of Good Aquaculture Practice and Good Handling Practice in the supply chain, especially at the level of MSEs, (4) weaknesses in the quality management systems of the MMAF and (5) weaknesses in the information flow to SMEs.

While the challenges to the fishery industry appear wide-ranging, the dominant impediments to greater EU market access are concentrated on the supply side. The exchange rate pass-through into the export price of Indonesia in the EU market has been large, but their impact on EU demand for Indonesian fish and fishery products has not significantly impacted trade. In fact, our estimates found that the real cross-rate between the euro and the rupiah has not been statistically significant in determining the EU demand for Indonesian fish and fishery products. Instead, non-price factors appear to have consistently undermined Indonesia's exports to the EU market. These non-price factors reflect (1) supply-chain weaknesses in both internal and external production processes affecting quality levels; (2) inadequate networking capabilities needed to ensure appropriate export services to foreign markets; (3) weak coordination between national, provincial and law enforcement authorities to control IUU fishing; and (4) EQI impediments to EU market access. Efforts to remedy these impediments will require concerted action on: (i) improvements in the performance of those authorities responsible for testing and inspection required for the issuance of health certificates, (ii) traceability improvements in the supply chain, (iii) support to MSEs and SMEs to improve Good Handling Practices and Good Aquaculture Practices, (iv) strengthening support for the management of the MMAF and (v) strengthening support for industry associations.

In an effort to address these issues, the present document suggests some areas of intervention that can be integrated within the Government's strategy and action plan for the industry. They are grouped into broad action areas covering (1) planning and developing the fishery industry; (2) promoting the fish processing industry; (3) strengthening quality control laboratory facilities; (4) combating IUU fishing; (5) lowering costs of shrimp production; (6) developing a stronger image, market information and export promotion strategy, (7) and overcoming EQI impediments to market access.

# A.1. Introduction

## A.1.1 Objective and Coverage

The present Annex on fisheries is one of five industry-specific annexes prepared for the study on *Indonesia's Trade Access to the European Union: Opportunities and Challenges*. It provides a self-contained analysis of the fishery industry and its export potential in the EU market. It has three specific objectives. First, it seeks to identify Indonesia's export opportunities in the EU fishery market, based on the industry's competitiveness and market growth prospects. Secondly, it identifies challenges to the realization of Indonesia's export potential in terms of EU market entry requirements, export quality infrastructure (EQI), the conduciveness of trade policies and regulations, and support being provided to the industry. Finally, it points out a few general recommendations on actions that support the achievement of the industry's export potential to the EU market.

This report consists of the following parts:

- *Chapter 1* presents an overview of the fishery industry in terms of its importance to the Indonesian economy and the pattern of its export development. It also covers the strengths, opportunities, weaknesses and threats (SWOT) facing the industry's development, especially as it relates to Indonesia's exports to the EU market.
- *Chapter 2* analyzes the European Union's market for fishery products and Indonesia's competitiveness in that market. It begins by examining the market in the European Union and assessing its growth prospects. It then examines the major factors determining Indonesia's competitiveness relative to other developing country exporters to the EU market. The chapter ends with an analysis of the relative importance of price and non-price factors in explaining Indonesia's changing market shares in the EU market, and how remedial actions addressing non-price factors could impact on Indonesia's export prospects.
- *Chapter 3* covers EU market access requirements and existing conditions in the Indonesian fishery industry. It examines internal and external constraints along the value chain, especially for small and medium size enterprises (SMEs), the existing EQI system in the industry and support services being offered to enterprises, and trade policies and regulations affecting the industry.
- *Chapter 4* presents a summary of the findings on the Indonesian fishery industry, and it draws on this information to recommend specific actions needed to fully realize the country's export potential in the EU market.

## A.1.2 Importance of the Industry

**Fish Processing Activities:** Fisheries is classified as part of the animal food-producing sector and covers finfish, mollusks, crustaceans and any aquatic animal that is harvested.<sup>1</sup> As capture fisheries declines, an increasing proportion of stocks are being farmed. Fish farming is the principal form of aquaculture and is the fastest growing animal-food producing activity. It now accounts for roughly one-half of all fishery production<sup>2</sup>. Somewhat over three-fourths of global fishery production is destined for human consumption, and the remaining amount is used for the production of fishmeal and fish oil. About one-half of all fish destined for human consumption is in live and fresh forms, and the other half undergoes some degree of processing. About three-fourths of all processed fish is in the form of frozen, cured and prepared or preserved products. Freezing is the main method of processing fish for food use, accounting for one-half of total processed fish for human consumption, followed by prepared and preserved fish (about 30 percent), and cured fish (20 percent).

Indonesia capture fisheries contribute about 60 percent of the gross value of fishery output, and aquaculture accounts for the remaining share. Of the total fishery supply, marine fish account for over

1 Throughout this report, the term industry and sub-sector are used interchangeably and both refer to a subset of activities of the sector to which the industry belongs.

2 Food and Agricultural Organization (FAO) of the United Nations, "The State of World Fisheries and Aquaculture (SOFIA)". Available: <http://www.fao.org/publications/en/>.

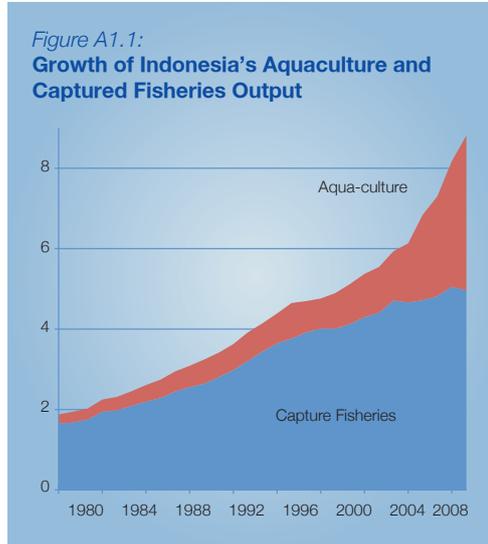
60 percent of the total, crustaceans represent 12 percent and mollusks 3 percent. The remaining products are classified as miscellaneous aquatic animals<sup>3</sup>. Aquaculture in Indonesia is practiced in fresh, brackish and marine water using a variety of species, production facilities and methods. Ten years ago, this type of fisheries contributed less than 19 percent of total output; today its contribution is estimated at well over 40 percent (Figure A1.1).

**Processing Industry:** Modern processing units in Indonesia generally process products for export. They include shrimp, tuna and skipjack, fish fillets, tuna loin and tuna steak. There are several processing operations that have good potential, including (a) freezing, cold storage and ice production; and (b) product processing with value added, to meet the increasing market demand for fishery products that are ready to cook (so-called convenience products). Examples of these products are Individual Quick Frozen (IQF) products, shrimps, breaded fish, and fish balls. Basic processing activities involve simple methods of transformation, such as filleting, salting, canning, drying and fermentation. More advanced value-adding activities involve the preparation of convenience foods and a wider variety of high value-added products in fresh, frozen, breaded, smoked or canned forms. These high value-added activities require sophisticated production equipment, processing methods and, consequently, substantial capital investment.

**Importance of Fishery Industry:** Fish is a staple food in the diet of Indonesian families, and about 90 percent of the country's total fish production is consumed domestically. The remainder is destined for external markets. Although frozen forms of fish and crustaceans dominate exports, Indonesia is increasingly supplying processed products to overseas customers. Globalization of fishery value chains is also growing fast, and large retailers are increasingly controlling international distribution channels. A growing number of producers in Indonesia and other developing countries are therefore linking their export-oriented fishery products with firms located abroad.

Outsourcing of processing operations is also spreading quickly. For example, whole fish from the European Union are being sent to Asia, particularly China as well as India and Viet Nam. These countries fillet and package the product and then sell it back to European distributors. The major impediment to outsourcing to processing operations in Indonesia is sanitary and phytosanitary (SPS) requirements in the EU and other developed market. As Indonesian processing facilities gear up to meet quality and safety standards in Europe, their lower processing costs will compare favorably with EU fisheries that face reduced margins from higher capital and labor costs and the growing scarcity of fish stocks.

**Employment and SMEs** – Approximately 90 percent of Indonesia's fishery industry can be classified as small-scale industry<sup>4</sup>. Fishery activities in Indonesia are highly labor intensive and the country ranks among those having the largest number of fishers and fish farmers, the other countries being China, India, Philippines and Vietnam. More than 2.7 million of Indonesia's population is directly involved in capture fisheries, and another 2.5 million is directly employed in aquaculture activities. Fishery production is concentrated in Java (67 percent of total country area), followed by Sulawesi

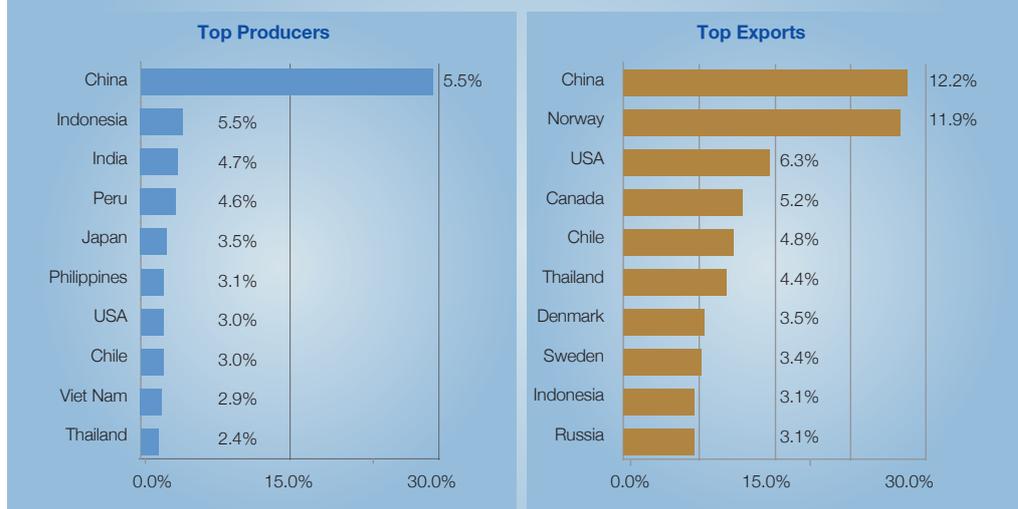


Source: FAO Fisheries and Aquaculture Information and Statistics Service.

<sup>3</sup> Based on information derived from FAO - Fisheries and Aquaculture Information and Statistics Service. Available: <http://www.fao.org/fishery/statistics/en>.

<sup>4</sup> Food and Agricultural Organization (FAO) of the United Nations, "Information on Fisheries Management in the Republic of Indonesia". Available: <http://www.fao.org/fi/oldsite/FCP/en/IDN/body.htm>.

Figure A1.2:

**World's Top Fisheries Producers and Exporters, 2009  
(Percent of world)**

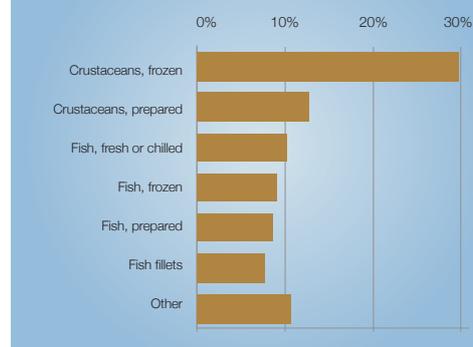
Source: FAO Fisheries and Aquaculture Information and Statistic Service and United Nation, COMTRADE database

(10 percent) and Sumatra (9 percent).<sup>5</sup> Small-scale fish farming in these areas is concentrated in freshwater ponds (54 percent), followed by paddy fields (24 percent), brackish water ponds (16 percent), mariculture (4 percent) and floating cage culture (2 percent).<sup>6</sup> Because of the high participation rate of labor in all types of fishery activities, the Government of Indonesia has placed a high development priority on fishery sector in terms of its national goals for employment creation and poverty alleviation.

**Types of Fishery Exports** – Indonesia's largest category of seafood exports is frozen or prepared crustaceans, which mainly consists of shrimp, crabs, lobsters and prawns. These products account for 43 percent of the country's total exports of fishery products (Figure A1.3). Another 36 percent of Indonesia's seafood exports consists fish exports. The forms of these exports are divided fairly evenly into fresh or chilled, frozen, prepared and fillet fish.

Among individual product exports, shrimps account for 31 percent of all fishery exports and other forms of crustaceans, consisting of crabs, lobsters and prawns, contribute another 19 percent. Tuna accounts for 16 percent of all exports, and other fresh, frozen and processed fish represent 22 percent of the total. Internationally, shrimp, both farmed and wild-

Figure A1.3:

**Indonesia's Types of Fishery exports  
(percent of total exports)**

Source: United Nation, COMTRADE database

5 Based on data from Badan Pusat Statistik of the Republic of Indonesia. Available: [http://dds.bps.go.id/eng/aboutus.php?tabel=1&id\\_subyek=56](http://dds.bps.go.id/eng/aboutus.php?tabel=1&id_subyek=56)

6 In brackish water culture, most (55 percent) of the households involved in fish farming have less than 2 hectare, while 27 percent have 2-5 hectares, 12 percent have 5-10 hectares and only 6 percent have more than 10 hectare of land. In freshwater culture, 64 percent of households in fish farming owned less than 0.1 hectare, 22 percent owned between 0.1-0.5 hectares, 9 percent owned between 0.3-0.5 hectare and only 5 percent owned more than 0.5 hectare. For details, see Food and Agricultural Organization (FAO) of the United Nations, "National Aquaculture Sector Overview: Indonesia". [http://www.fao.org/fishery/countrysector/naso\\_indonesia/en#tcNA0052](http://www.fao.org/fishery/countrysector/naso_indonesia/en#tcNA0052).

caught, is the highest value seafood export, accounting for 16 percent of worldwide exports of all fishery products.

**Major Fishery Export Markets** –The European Union is the world's largest importer of fishery products, accounting for 25 of the world total. Yet the EU market only accounts of 11 percent of Indonesia's total exports (Figure A1.4). The United States and Japan each account for a much lower share (16 percent) of total world imports. Nonetheless, Indonesia exports 35 percent of its fishery products to the United States and another 27 percent to Japan.

There is considerable scope for Indonesia to increase the amount that it exports to the EU market. If it were to expand its share of exports to the EU market to the same proportion as the European Union's share of world imports, Indonesia's foreign exchange revenue from its fishery exports would more than double, expanding from US\$253 million to US\$561 million in terms of the value of those exports in 2009.

**Major Global Competitors** - China has dominated the global seafood markets for both processed and unprocessed fish since 2002. In addition to exports from domestic fisheries sources, China also exports reprocessed imported raw material, adding considerable value in the process. Today, China retains 12 percent of the world seafood market (Figure A1.5)<sup>7</sup>. Indonesia ranks number 10. Other major exporters are Norway (15.5 percent), the United States (6.1 percent), Canada (5 percent), Chile (4.6 percent), Thailand (4.3 percent), Netherlands (3.6 percent), Denmark (3.4 percent) and Sweden (3.2 percent).

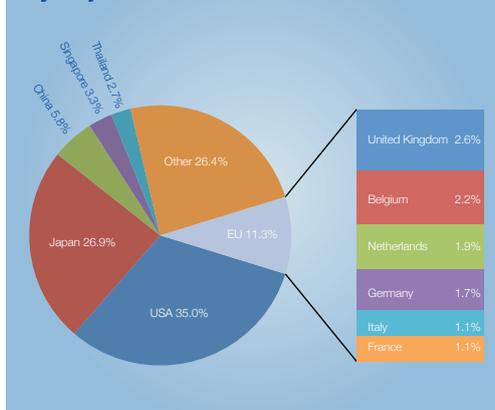
Table A1.1:

**Indonesia Major Fisheries Products, 2009**

	Million US\$	Percent
Shrimps and prawns, frozen	694	30.9%
Crustaceans, prepared or preserved	313	14.0%
Tunas, whole or in pieces	190	8.5%
Fish meat, frozen	184	8.2%
Tunas, fresh or chilled	96	4.3%
Other fish, frozen	83	3.7%
Other fish, fresh or chilled	75	3.4%
Tunas, frozen	66	3.0%
Cuttlefish, octopus and squid, frozen	64	2.8%
Other crustaceans, frozen	54	2.4%
Flat-fish, frozen	40	1.8%
Fish, live	35	1.5%
Fish, dried	32	1.4%
Flat-fish, fresh or chilled	31	1.4%
Salmonidae, frozen (excluding livers and roes)	24	1.1%
Herrings, sardines, whole or in pieces	23	1.0%
Other	2,243	10.6%

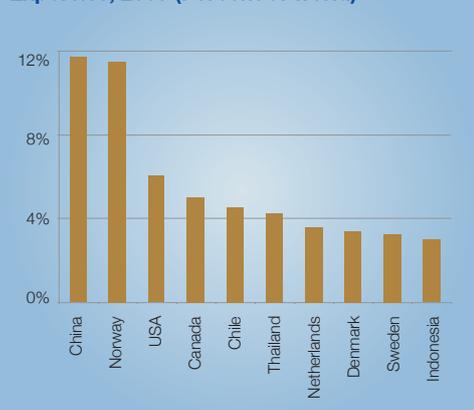
Note: Fishery products are covered under Standard International Trade Classification (SITC) 03.  
Source: United Nations, COMTRADE database

Figure A1.4:  
**Distribution of Indonesia Fishery Export by Major Market in 2009**



Source: United Nations, COMTRADE database

Figure A1.5:  
**World's Top Fisheries Producers and Exporters, 2009 (Percent of world)**



Source: United Nation, COMTRADE database

<sup>7</sup> Statistics reported by China have been subject to question since the early 1990s, which puts into question the reliability of global estimates. For details, see FAO, Fisheries Production Statistics. Available: <http://www.fao.org/fishery/statistics/en>

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### **A.1.3. SWOT Analysis**

Box A1.1 summarize the strengths, weaknesses, opportunities and threats (SWOT) of Indonesia's fishery industry. The focus of the analysis is areas where there is a need for change to ensure that Indonesia realizes its export opportunities in the EU fishery market. The key issues arising from the analysis are as follows:

- Large untapped potential exports to EU market.
- Exports could be increased in terms of traditional exports and diversification into various other fish species and processed products that are in high demand abroad.
- Indonesia could reverse EU market share losses by addressing EQI hindrances and trade impediments.
- Indonesia lacks an export promotion strategy that would lead to a greater access to the EU market.

Box A1.1: Strengths, Weaknesses, Opportunities and Threats (SWOT) of Indonesian fisheries industry

	Supply Chain Structure and Functioning	EU Market	MSEs and SMEs	Institutional Framework
<b>Strengths</b>	<ul style="list-style-type: none"> <li>Large fishery processors are able to supply quality products to EU buyers.</li> <li>Low-cost labor.</li> </ul>		<ul style="list-style-type: none"> <li>Large number of suppliers available</li> <li>system of collectors (middlemen) available</li> <li>Indonesia's climate supports shrimp farming</li> </ul>	<ul style="list-style-type: none"> <li>Large number of fishery laboratories exist</li> <li>Some fishery laboratories have satisfactory results</li> <li>Competent non-fishery laboratories available for cooperation (e.g. BBIA, private laboratories)</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>Poor quality of domestic brood stock undermines survival rates &amp; quality of output.</li> <li>Cost of shrimp feed is higher relative to other countries.</li> <li>Poor management practices at the farm level undermine shrimp-farm productivity.</li> <li>High production costs.</li> </ul>	<ul style="list-style-type: none"> <li>Weak image and poor market information about Indonesian products on the part of European consumers.</li> <li>Lack of export promotion strategy to enhance EU market access.</li> <li>Increased competition from other major suppliers like Ecuador, China and Vietnam.</li> <li>Pricing and weaker currencies have eroded Indonesia's EU market share.</li> </ul>	<ul style="list-style-type: none"> <li>Most farmers do not have sufficient information about Good Aquaculture Practice and EU requirements</li> <li>Antibiotics still used by farmers</li> <li>Hygiene on fishing vessels often insufficient</li> </ul>	<ul style="list-style-type: none"> <li>Weak enforcement of product and process standards, technical and other regulations.</li> <li>Poor coordination and collaboration among central and provincial authorities and law enforcement agencies.</li> <li>Insufficient control of farmers, fishing vessels, ports and landing sites.</li> <li>Insufficient competence of many fishery laboratories and inspection organizations</li> <li>Insufficient metrology &amp; traceability of fishery laboratories.</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>Certification of farmers will increase traceability.</li> <li>Certification and monitoring of middlemen will increase traceability</li> </ul>	<ul style="list-style-type: none"> <li>Indonesia could reverse the EU market share losses of the last decade due to external competition from large exporters and internal inertia in addressing EQI hindrances and trade impediment.</li> <li>Indonesia's exports can be both increased in terms of traditional exports and diversified into various other fish species and processed products that are in high demand abroad.</li> <li>Large opportunity aquaculture growth and development</li> <li>Large untapped potential exports to EU market.</li> <li>Anticipated 8 percent annual growth of EU imports.</li> <li>Shrimp is Indonesia's leading fisheries export and it is also one of the European Union's largest imports.</li> </ul>	<ul style="list-style-type: none"> <li>Existing cooperative and farming groups allow easy access to farmers by processors and distributors</li> <li>Potential for improvement of GAP</li> <li>Farmers are eager to learn</li> </ul>	<ul style="list-style-type: none"> <li>New MMAF organizational structure improve the control system for fishery export</li> <li>Restructuring of laboratories system under MMAF can improve efficiency and quality</li> <li>Associations as AP51 and shrimp club can support farmers and processors.</li> <li>Seafood Service Center has capabilities to support MSEs and SMEs.</li> <li>Laboratories like BBIA, BPMEI, fishery disease laboratories of MMAF and private laboratories can be included in the laboratory network for health certificates</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>Competitiveness of local producers/ exporters may decline</li> </ul>	<ul style="list-style-type: none"> <li>Capacity limitations of institutions providing EQI and the resulting limitations that these inadequacies create for fishery exporters attempting to meet EU market access requirements.</li> <li>Lack of adequate coordination and collaboration among central and provincial government agencies and the armed forces in regulating the industry and policing EEZ waters to prevent IUU fishing.</li> <li>Indonesia's real exchange rate has appreciated relative to comparator countries in the industry. For European importers, these differential movements have made Indonesia's fishery products more expensive than those of other third country suppliers.</li> </ul>	<ul style="list-style-type: none"> <li>Farmers do not have sufficient financial basis for their regular business</li> </ul>	<ul style="list-style-type: none"> <li>Confidence in MMAF may deteriorate</li> <li>Potential widening of import restrictions by European Union</li> </ul>

## A.2. Indonesia's Export Competitiveness In The EU Market

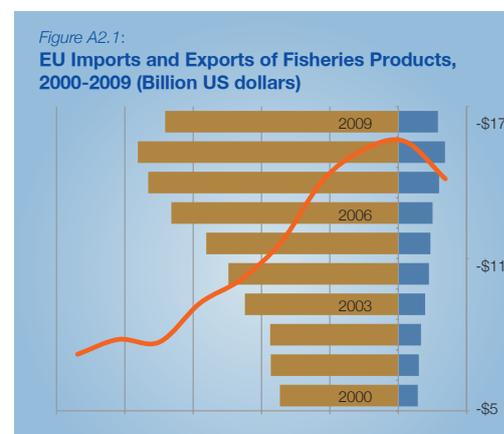
### A.2.1. EU Market Development and Prospects

The European Union is, by far, the world's largest importer of fishery products. In 2009 total EU fishery imports reached US\$17 billion, while US and Japanese imports were each US\$11 billion. Despite the predominance of the European Union in the global market, Indonesia exports much less to the EU market than it does to the United States and Japan. In 2009, for example, fishery exports to the European Union were US\$193 million, whereas exports to the United States reached US\$534 million and those to Japan were US\$519 million.

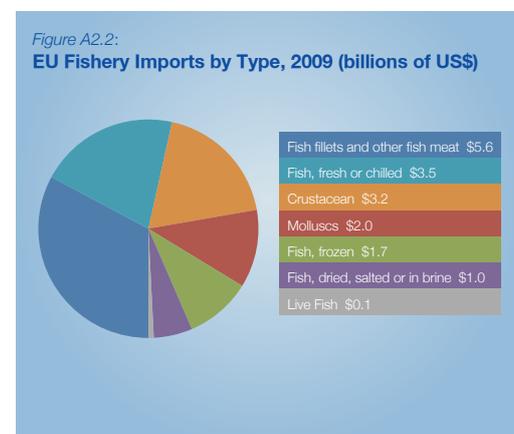
The European Union's trade deficit in fishery products has been growing rapidly, and in the last ten years it has doubled (Figure A2.1). In 2009 the European Union imported US\$17 billion worth of fishery products, which represented 2.5 times the volume of domestic production. Net imports in that year supplied one-half of domestic consumption.<sup>8</sup> Those fishery imports are mainly in the form of processed fish, followed by fresh or chilled fish and crustaceans (Figure A2.2).<sup>9</sup> Together these three types of imports account for 75 percent of all fishery imports. By itself, processed fish represents one-third of all fishery imports. It comprises fresh, chilled or frozen fillets of swordfish, salmon, trout, coalfish, haddock, herring and mackerel. Within these different product types, Indonesia mainly exports fish meat. The most important fishery products imported into the European Union are shrimp and salmon, followed by cuttle fish, octopus, sturgeon, cod and scallops (Figure A2.3). Together these products account for nearly 80 percent of all fishery imports into the EU market. In 2009 Indonesia accounted for 6 percent of frozen shrimp supplied by foreign countries to the EU market.

The major foreign suppliers of fishery products to the European Union are Norway (24 percent of total imports in 2009), China (10 percent), Iceland (7 percent), Vietnam (6 percent), and the United States (5 percent). Together these five countries accounted for one-half of total EU imports in 2009. In frozen shrimp, the major suppliers are Ecuador (14 percent of total imports in 2009), India (13 percent), Argentina (12 percent), Bangladesh (9 percent), Thailand, Vietnam and China (each with 6 percent shares). Together these seven countries supply two-thirds of the EU market. Indonesia is the tenth largest supplier of frozen shrimp and has a 4 percent market share of the EU market.

The markets for fish and crustaceans like shrimp are highly price competitive, and some countries have a competitive advantage because of preferential tariff rates under free trade arrangements (FTAs) with the European Union, or under the unilateral instrument of GSP plus,<sup>10</sup> or the Everything But Arms (EBA) arrangement that include duty-free and quota-free access for products originating in Least Developed Countries (LDCs). Indonesia is a GSP beneficiary with preferential duties on



Source: United Nations, COMTRADE database



Source: United Nations, COMTRADE database

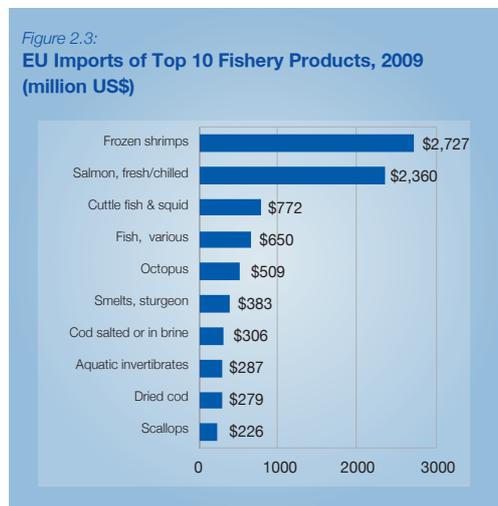
8 Imports relative to consumption data from Food and Agricultural Organization (FAO) data on supply and distribution of fishery products. Available: <http://www.fao.org/fishery/topic/16140/en>. C

9 Under the harmonized system (HS), the fisheries subsector consists of chapter 3 (Fish and crustaceans, mollusks and other aquatic invertebrates) and part of chapter 16 covering prepared or preserved fish (1604) and crustaceans (1605).

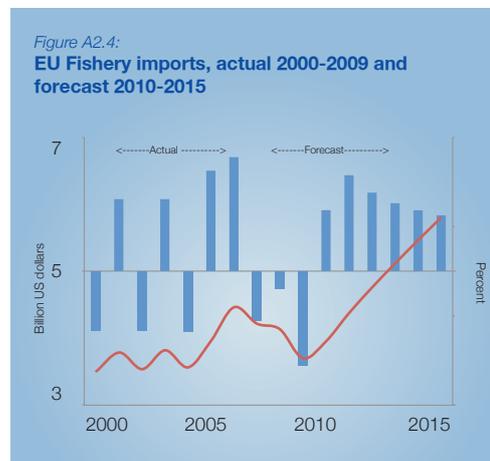
10 Includes Ecuador, Colombia, Costa Rica, Guatemala, Honduras, Sri Lanka, Paraguay, El Salvador, and Venezuela. For the full list of countries qualifying for GSP+ status in 2009-2011, see <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:334:0090:0091:EN:PDF>

fisheries. The GSP rates range from a low of zero for some products to a high of 18 to 19.5 percent in the case of some products like fresh, chilled or frozen sardines, some tunas like long-finned and yellow-fin tuna, and skipjack or stripe-bellied bonito.<sup>11</sup>

Overall import growth of the fishery sector in the last decade has average 8 percent a year. Above-average rates have been achieved in processed fishery imports, which expanded by 50 percent more than the average of all import fishery imports. In contrast, live, fresh and chilled fish and crustaceans have grown at much lower rates. The fastest growing product-level imports are fish and shellfish in their frozen form, including coalfish, eels, albacore, scallops, trout, mackerel, sardines and crabmeat. Imports of fresh and chilled yellowfin tuna have also expanded greatly in the last decade, averaging 38 percent a year. The yellowfin tuna habitat is in tropical and subtropical seas, and is absent from the Mediterranean Sea. Indonesia has the world's largest catch of this species.



Source: United Nations, COMTRADE database.



Source: Projections by the Study Team based on econometric estimates and assumptions about economic activity from IMF, World Economic Outlook database.

The European Union's demand for fishery imports largely reflects its strong response to changes in consumer incomes. Our estimates show that a one percent increase in real GDP of the EU market as a whole has produced a 4.5 percent expansion in fishery imports. Based on these estimates, and expectations about the medium-term prospects for economic growth in the European Union, we expect fishery imports to grow by a robust annual average of 8 percent. Figure A2.2 provides a visual representation of the forecast of total EU fishery imports through 2015. The forecasts are based on assumptions about real GDP growth, fishery prices and exchange rates are taken from the International Monetary Fund's biannual projections.<sup>12</sup> They forecast GDP to grow by 1 percent in real terms in 2010 and by another 1.3 percent in 2011. After 2011 a moderate 2 percent annual real GDP growth is assumed. We assume unchanged constant euro prices for the products and an average exchange rate of US\$1.3 per euro over the medium term.

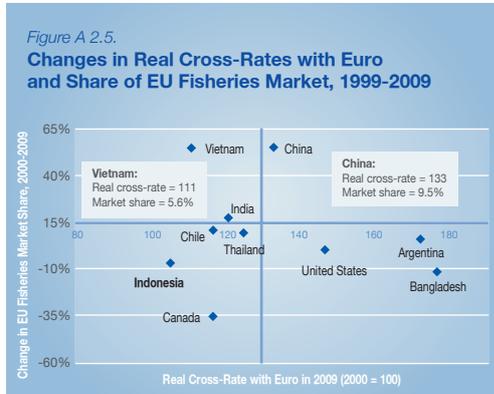
## A.2.2. Indonesia's Export Competitiveness

Indonesia's competitiveness in the EU fishery market, like in other foreign markets, is largely determined by four interrelated conditions: (i) export prices relative to those of competing suppliers to the market; (ii) the magnitude and type of accessible demand; (iii) accessibility and reliability of supporting industries; and (iv) firm strategy and rivalry that affect how various enterprises conduct business.<sup>13</sup>

<sup>11</sup> Based on data provided to the Study Team by the European Commission.

<sup>12</sup> See International Monetary Fund, "World Economic Outlook Update". July 2010. Available: <http://www.imf.org/external/pubs/ft/weo/2010/update/02/index.htm>.

<sup>13</sup> These conditions are often referred to as the Competitiveness Diamond developed by Michael Porter, "Competitive Advantage of Nations". Free Press, 1998.



Source: Calculated from IMF, WEO database, and EU, Eurostats.

**Table A2.1:**  
**Export c.i.f. Price of Fisheries of Top Developing Country Suppliers to EU Market, 1999-2009**

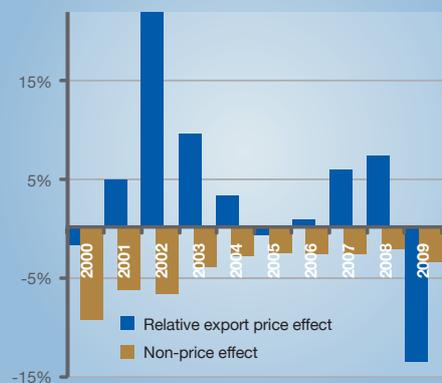
	Shrimp & Other Crustaceans	Fresh & Chilled Fish
China	438	313
Canada	519	194
India	521	442
Ecuador	532	515
Russia	543	153
Vietnam	585	364

*Export Prices:* Foreign demand for Indonesia’s fishery exports is determined by the rupiah-denominated price of exports. From the point of view of European buyers, that price is denominated in euros. The price differential between Indonesia’s exports and those of other competitors to the EU market therefore depends on the product price in each supplying country and the cross exchange rate between the rupiah and the euro, adjusted for inflation in each country. The demand for fishery exports of Indonesia is therefore determined by both the real cross-rate of Indonesia’s domestic currency relative to that of the European Union, and the foreign rupiah-denominated export price.<sup>14</sup> Macroeconomic conditions determine the real cross-rate, while industry-specific conditions in Indonesia determine the rupiah-denominated price of fishery products.

For the first of these determinants, Figure A2.5 shows the relation between changes in the real cross-rate in Indonesia and other major suppliers to the EU market and changes in their market shares. What is most striking about exchange rate developments in the last decade is Indonesia’s loss of one-third of its market share, a situation that has paralleled the rise in the real cross-rates of Indonesia relative to many competing suppliers to the EU market. Notable among the competing suppliers is China, whose undervalued currency has made its products highly price-competitive in the EU market. Its share of the EU market has grown from 5 percent in 2000 to 9.5 percent in 2009. A similar situation occurred with Vietnam, whose market share rose from 1 to 5 percent in the same period. In contrast, Indonesia maintained a relatively stable currency so that the rupiah remained nearly unchanged in real terms vis-à-vis the euro. Its share of the EU market fell as a result of the appreciation of its currency relative to that of other countries. The exchange rate differential have therefore significantly undermined the price competitiveness of Indonesia’s fishery exports in the EU market relative to the same products exported by competing suppliers to that market.

The industry-specific conditions affecting the rupiah-denominated price of fishery products are largely associated with labor and infrastructure-related costs. The cost structure of the fishery industry is reflected in the nominal unit price of product exports in the industry’s relatively

**Figure A 2.6**  
**Price and Non-Price Factors Impacting on Indonesia’s Shares of EU Fisheries Market, 2000-2009**



Source: Derived from Study Team estimates.

14 The real bilateral exchange rate takes the relative price of tradable and non-tradable products as an indicator of a country’s competitiveness level in the foreign trade. The rationale behind this definition is that the cost differential between trading countries are closely related with the relative price structures in their economies. Mathematically, the real exchange rate,  $r$ , is defined as  $r = P_t/P_n = eP^*/P_n$ , where  $P_t$  and  $P_n$  represent the price of tradable and non-tradable products,  $e$  is the nominal exchange rate, and  $P^*$  is the international price of tradables.

competitive global market.<sup>15</sup> Indonesia has a cost advantage in its proximity to large marine and fishery resources and its abundant labor supply, which helps to offset shipping costs to the EU market. Table A2.1 shows the average export price of Indonesia and other foreign suppliers to the EU markets. In shrimp and crustaceans, Indonesia ranks near Thailand in terms of its price competitiveness, but well below China, Canada, India, Ecuador, Russia and Vietnam. In fresh and chilled fish, Indonesia is the highest priced supplier among the comparator countries. These price variations could reflect differences in the product composition of the two groups, as well as quality differences. The more important measure of competitiveness is the impact that those prices have had on the demand for Indonesia's exports, that is, whether changes in the price of Indonesia's exports have affected the EU demand for Indonesian exports relative to that of competing suppliers to the market. This issue is examined in the next section of this chapter.

*Demand Conditions:* Links to overseas consumers exist for some exporters of fishery products that operate in direct collaboration with larger suppliers. Examples are fresh and frozen tuna exporters that operate their own fleet have contract supply arrangements with long line fleet operators, and shrimp processors with a vertically integrated farming operation linked to export activities. These exporters are regulated by the Ministry of Fisheries and Marine Affairs (MMAF), which classifies fish

Box A2.1

### Competitive Analysis of Indonesian Fisheries Industry

	Strengths	Weaknesses
<b>Pricing Conditions</b>	<ul style="list-style-type: none"> <li>● Proximity of marine resources.</li> <li>● Abundance of low-cost labor.</li> <li>● Rapid development of fish farming has led to more stable supplies for processors.</li> <li>● Cost-reducing firm strategies enhance price-competitiveness.</li> <li>● Increased pre-export processing.</li> </ul>	<ul style="list-style-type: none"> <li>● Price volatility associated with shifts in supply and demand conditions.</li> <li>● Real effective devaluations by competing suppliers to EU market.</li> <li>● Strong competition from low-cost producers in other countries.</li> <li>● High costs and delays in the transportation and import/export clearance process.</li> </ul>
<b>Demand Conditions</b>	<ul style="list-style-type: none"> <li>● Increased demand for fish varieties available in Indonesia.</li> <li>● Increasing use of EU-consistent technical and phytosanitary standards.</li> <li>● Increased product innovation by larger processing companies.</li> </ul>	<ul style="list-style-type: none"> <li>● Limited diversification due to specialized activities of fishing vessels and fish farming.</li> <li>● Small producers lack quality standards.</li> <li>● Inconsistent quality standards.</li> <li>● Shifting consumer preferences and uncertainty surrounding those changes.</li> </ul>
<b>Industry Networking</b>	<ul style="list-style-type: none"> <li>● Networking among processing firms.</li> <li>● Close linkages in downstream activities of larger firms.</li> <li>● Strong support from Government</li> </ul>	<ul style="list-style-type: none"> <li>● Lack of clusters of smaller fishing enterprises .</li> <li>● Weak linkages to trucking, logistics, warehousing, software, banking and finance.</li> <li>● Insufficient capital investment and low labor skills relative to other major foreign suppliers.</li> </ul>
<b>Conditions for Conducting Business</b>	<ul style="list-style-type: none"> <li>● Strong competitive environment</li> <li>● Incentives to introduce innovation and branding.</li> <li>● Diversification in aquaculture has increased market opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>● Lack of properly defined industry strategy.</li> <li>● Lack of coordination among central and local government agencies, business sector.</li> <li>● Difficulties in meeting international needs in technical &amp; phytosanitary standards.</li> <li>● Lack of timeframe for trade policy adjustments.</li> </ul>

Source: Based on Competitive Diamond analysis (see Michael Porter, "Competitive Advantage of Nations". Free Press, 1998).

<sup>15</sup> In a competitive market, the firm or industry as a whole will select an output level that equates its marginal cost with its export price.

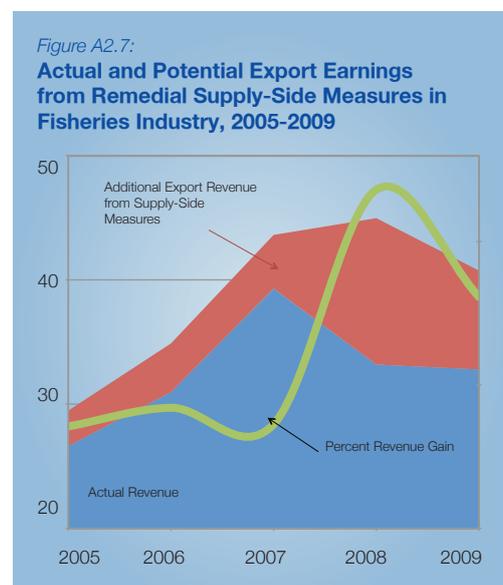
processing operations of enterprises based on their compliance with Good Manufacturing Practices (GMP) and Hazard Analysis Critical Control Points (HACCP) standards. Only establishments that are classified as A are permitted to supply the EU market. In recent years, the industry has been successful in promoting greater domestic processing for export markets. In 2008 regulations promoting domestic fishery processing were issued by the Minister of Marine Fisheries Decree 05/2008 and the Directorate General of Fishery Products Processing and Marketing Decree No 33/2008. This action followed intense lobbying by fish processing and exporting companies in an effort to reduce the large volume of unprocessed fish exported directly by foreign vessels fishing in Indonesian waters.<sup>16</sup>

*Industry Networking:* The fishery industry is composed by the formal sector that operates in a regulated market and often supplies the more than 700 fish processing enterprises in the country.<sup>17</sup> Those processing units include eight fish canneries and about 50 processors of fresh and frozen tuna products. Other types of enterprises are primarily fish freezing, salting and drying processors. For the large number of small vessels and aquaculture producers, there are large numbers of domestic traders and distributors who reconcile domestic and export market with the supplies of fishery products originating from widely dispersed fishery and landing sites. Based on export orders received from their clients, they source the appropriate species, quantities and qualities of their products through their network of suppliers. These so-called middlemen are not regulated or recorded, but form an essential economic activity in the fishery industry.

*Conditions for Conducting Business:* There is a relatively high degree of competition among the larger fish processing firms and that competition is reflected in firm strategies to increase the volume of fish processing within Indonesia. Strong competition from other foreign suppliers like China, Vietnam, and Ecuador and the costs of switching export markets has intensified efforts to retain or expand existing overseas markets. There is little opportunity for enterprises to switch from one type of product within the marine industry to another, either for primary suppliers or processors. For the small producers, the large number of enterprises competing for customers gives rise to considerable rivalry. High storage costs and perishability of marine products intensifies competition for customers.

### A.2.3. Opportunities to Regain Market Shares

Indonesia's share of the EU market has steadily declined since 2000. It began the decade with 5.9 percent of total EU imports from third countries and it ended the decade with a 4.1 percent share. Our estimates suggest that those losses were largely due to non-price factors associated with supply impediments like EQI limitations (Figure A2.6).<sup>18</sup> Export price movements had a positive effect on Indonesia's market shares in the first half of the decade, and a significantly negative impact in 2008. Exchange rate pass-through caused by



Source: Estimated from study team calculations

<sup>16</sup> The regulations may not be WTO-compliant as it could be interpreted as possibly incorporating a de facto ban on fisheries export by foreign entities, insofar as foreign companies would need to establish fish processing plants.

<sup>17</sup> This section draws on European Commission, "Fisheries Partnership Agreement FPA 2006/20". Annex 5: Indonesia Case Study". Brussels, FPA 15/1UU/2008.

<sup>18</sup> Non-price factors (including but not exclusively EQI) are equal to the changes in exports not explained by income and price changes. That's the way it was calculated and that's normal the way that the intercept is interpreted. However, in our case, we broke down the non-price factors further by including a trend variable to capture secular changes that could or could not be associated with EQI. Because of the attribution uncertainty, it was decided not to report the secular (trending) estimates.

the real cross-rate appreciation of the rupiah relative to the euro was not found to have significantly impact on Indonesia's competitiveness in the EU market. Non-price factors, however, had a consistently negative impact on Indonesia's competitiveness through the decade. That negative impact was especially noticeable at the beginning of the decade and in 2009. On average, the non-price effects on Indonesia's export competitiveness in the EU market more than offset improvements in the relative price of the products themselves, thereby producing an overall reduction in Indonesia's share of EU imports from third countries.

To the extent that Indonesia could have overcome its supply impediments on exports and maintained its 5.9 percent share of the EU fishery market that it reached at the beginning of the decade, foreign exchange revenue from the industry would have been nearly 20 percent higher in 2009 than was actually achieved. Figure A2.7 summarizes those calculations. It shows that especially during the Global Financial Crisis of 2008-2009, the additional revenue from supply-related adjustments could have been 18 to 35 percent greater than actual export earnings in the fishery industry. Overcoming those obstacles will require considerable effort on the part of the industry, particularly for EQI requirements. However, the benefits to the industry are considerable, as are the economy-wide impact that would be produced from additional employment and expenditures on downstream and supporting industries. Without those EQI constraints and assuming that all other price and non-price factors were the same as other suppliers, Indonesia's exports would increase by the same proportion as those of EU imports for fisheries, that is, the same as our forecast of 8 percent annual growth of EU fishery imports from third countries.

## A. 3 Challenges for Realizing Indonesia's Exports Potential

### A.3.1. EU Market Access

The key elements of the regulatory environment for the fishery industry are as follows:

- Common Fishery Policy:** The Common Fisheries Policy (CFP) is the fishery policy of the European Union. It sets quotas on the amounts of each type of fish that member states are allowed to catch. The CFP currently has four components: (i) regulation of production, quality, grading, packaging and labeling; (ii) encouraging producers organizations intended to protect fishermen from sudden market changes; (iii) setting minimum fish prices and financing buying up of unsold fish; and (iv) setting rules for trade with non-EU countries. Under the Common Organization of the Markets (COM), a system of trade creation with third countries allows the fish-processing industry to be supplied in a stable manner at competitive prices from countries like Indonesia. The intent is to ensure price stability and guarantee fair prices to producers.
- EC Support to the Domestic Fishery Industry:** EC support for the sustainable development and structural adjustment of the fisheries and aquaculture subsector is provided through the Financial Instrument of Fisheries Guidance (FIFG) (structural measures in the fishery and aquaculture subsector). Assistance is specifically granted for the restructuring of fishing fleets, aquaculture, processing and marketing circuits, port facilities, and the revitalization of areas that depend on fisheries. There is also a Common Market Organisation (CMO) in Fishery and Aquaculture Products that provides financial compensation, carry-over aid, and private storage aid to members of the CMO. It also provides compensatory payment for the domestic tuna industry.
- Control over Illegal Fishing:** Beginning 1 January 2010, a certification scheme applies to marine fishery products.<sup>19</sup> It does not, however, include aquaculture products like freshwater fish and ornamental fish. Otherwise, imports of fishery products must be accompanied by a catch certificate to demonstrate that the products concerned do not originate from illegal, unreported and unregulated (IUU) fishing. The certificate must be submitted by the importer to the competent authorities of the EU member country to which the product is destined at least three working days before the estimated time of arrival at the place of entry into the EU territory. Beforehand, the certificate must be validated by a public authority in the home country of the fishing vessel that caught the fish to ensure that fishing vessels flying its flag comply with international rules on conservation and management of fishery resources. The competent authorities of the EU member country can carry out all of the necessary verifications to ensure the legality of the products.<sup>20</sup>

For Indonesian exporters shipping fishery products to the EU markets, the following are the specific market access requirements:<sup>21</sup>

Box A3.1:

#### EU Market Access in Fisheries

Tariffs:	MFN	GSP
Average	10.8	7.1
Maximum	23.0	19.5
Minimum	0.0	0.0

#### Product-Specific Requirements:

- Control over illegal fishing.
- Health control of fishery products intended for human consumption.
- Health control of fishery products intended for animal consumption.
- Labeling requirements.
- Rules of origin.

Sources: Tariffs provided by European Commission, Trade Directorate; requirements from EC Helpdesk.

19 European Commission, "Commission Regulation (EC) No 1010/2009 of 22 October 2009 laying down detailed rules for the implementation of Council Regulation (EC) No 1005/2008 establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing". Available: <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2009:280:SOM:EN:HTML>

20 It is important to note that each establishment does not have to be visited and inspected by the European Commission. Instead the European Commission relies on a list of approved establishments provided by the Competent Authorities of Indonesia (MMAF).

21 The following information draws on material available at the European Commission's Helpdesk for developing countries. Available: <http://exporthelp.europa.eu>.

1. *Tariffs:* For fishery products, the average MFN rate is 10.8 percent, with a range of 0 to 23 percent; the average GSP rate is 7.1 percent, with a range from 0 to 19.5.<sup>22</sup> For crustaceans, an ad valorem tariff of 11.1 percent applies to third countries, with a range of 6 to 18 percent; the preferential tariff rate for GSP recipient countries is 5.1 percent, with a range of 2.1 to 14.6 percent. Between 2003 and 2008, Indonesia was the beneficiary of an annual tariff quota of 2,832.5 tons of canned tuna exports to the European Union. Under that quota, Indonesia was required to provide an accompanying certification of origin in compliance with article 47 of Regulation (EEC) No. 2454/93. The duty applicable was 12 percent. Since 2009, the applicable tariff has reverted to that of the most-favored nation (MFN) at a rate of 20.5. Under that system, certification of origin is not required.
2. *Specific requirements* cover (a) control over illegal fishing; (b) health control of fishery products intended for human consumption; (c) health control of fishery products intended for animal consumption; (d) labeling requirements; and (e) rules of origin.
  - (a) *Control on illegal fishing:* As mentioned above, Fishery products must only be imported into the European Union when accompanied by a catch certificate as laid down in Council Regulation (EC) No 1005/2008, establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated (IUU) fishing. Foreign suppliers must therefore submit a catch certificate drawn up in accordance with Annex II of the IUU Regulation or Annex IV of its implementing Regulation. It should be submitted by the importer to the competent authorities of the Member State in which the product is intended to be imported, at least three working days before the estimated time of arrival at the place of entry into the territory of the EU. The certificate should be validated by a public authority of the flag State of the fishing vessel which caught the fish concerned, in line with its duty under international law to ensure that fishing vessels flying its flag comply with international rules on conservation and management of fishery resources. The acceptance of catch certificates validated by a given flag State must be subject to the condition that the Commission has received a notification from the flag State concerned certifying that: (i) it has in place national arrangements for the implementation, control and enforcement of laws, regulations and conservation and management measures which must be complied with by its fishing vessels; (ii) its public authorities are empowered to attest the veracity of the information contained in catch certificates and to carry out verifications of such certificates on request from the Member States. The competent authorities of the Member States may carry out all of the verifications they deem necessary to ensure the legality of the products concerned.
  - (b) *Health control of fishery products intended for human consumption:* Imports of fishery and aquaculture products intended for human consumption must comply with general health requirements related to (i) country health approval; (ii) approved establishment; (iii) health certificates; and (iv) health control.
    - (i) *Country Health Approval:* *The European Commission's Health and Consumer Protection Directorate General (DG SANCO)* applies a procedure to assess the candidate's third country compliance with EU Public and Animal Health conditions in which one of the steps is an on-site review by a team of experts of the Food and Veterinary Office (FVO). Once approved, the third country is added to the list of authorized countries for that particular category of product.<sup>23</sup>
    - (ii) *Approved Establishments:* In addition to country approval, fishery and aquaculture products may only be imported into the EU if they have been dispatched from, and obtained or prepared in, establishments (cold store, process plant, factory vessel,

<sup>22</sup> Based on data provided to the Study Team by the European Commission.

<sup>23</sup> The positive lists of eligible countries are published in Commission Decision 2006/766/EC and for a transitional period established under Commission Regulation (EC) No 2076/2005.

registered freezer vessels, production areas, and others) that appear on a list approved by the *Health and Consumer Protection Directorate General (DG SANCO)*.<sup>24</sup>

- (iii) Health certificates: Imports of fishery and aquaculture products into the EU must be accompanied by a health certificate signed by the representative of the competent authority of the exporting third country certifying that the products in question are suitable to be exported to the EU. When fishery products are imported directly from a fishing or freezer vessel, a document signed by the captain may replace the health certificate.
- (iv) Health control: On arrival, the products and the accompanying certificates must be verified and checked by the veterinarian officials, applying the procedures given down by various EC regulations.

Fishery products can only be imported into the European Union if they come from an approved establishment of a third country included in a positive list of eligible countries for the relevant product, are accompanied by the proper health certificates, and have succeeded the mandatory control at the pertinent Member State's border inspection post (BIP). Fresh fishery products landed in the EU directly from a fishing vessel flying the flag of a third country are subject to a different scheme of health control laid down in Annex III of Regulation (EC) No 854/2004 of the European Parliament and of the Council. The European authorities might suspend imports from all or part of the third country concerned or take interim protective measures when products may present any risk for public or animal health as in the case of dangerous diseases outbreaks.

- (c) *Health control of fishery products not intended for human consumption*: Imports of fishery and aquaculture products not intended for human consumption into the European Union must comply with general conditions of public and animal health designed to guarantee a high level of health and safety throughout the food and feed chains and to avoid the spread of infectious diseases which are dangerous to animals or humans. These products can only be imported into the European Union if they come from an approved establishment of a third country included in a positive list of eligible countries for the relevant product and are accompanied by the proper health certifications. However, the European authorities might suspend imports from all or part of the third country concerned or take interim protective measures when products present any risk for public or animal health.

The general health requirements applicable to these products are related to (i) country health approval; (ii) approved establishments; (iii) health certificate; and (iv) health controls.

- (i) Country Health Approval: The European Commission's Health and Consumer Protection Directorate-General (DG SANCO) applies a procedure to assess the candidate's third country compliance with EU Public and Animal Health conditions. Once approved, the third country is added to the list of authorized countries for that particular category of product.
- (ii) Approved Establishments: In addition to country approval, fishery and aquaculture products not intended for human consumption may only be imported into the EU if they have been dispatched from, and obtained or prepared in, approved establishments: processing and storage, oleo chemical, biogas and composting, pet food and technical plants, production areas, and others.
- (iii) Health Certificate: Imports of these products into the EU must be accompanied by a health certificate signed by the representative of the competent authority of the exporting third country certifying that the products in question are suitable to be exported to the EU.

24 Lists of third countries' establishments and areas approved for fishery products and live bivalve molluscs can be found in the Health and Consumer Protection Directorate-General (DG SANCO).

- (iv) Health Control: On arrival, the products and the accompanying certificates must be verified and checked by the veterinarian officials.<sup>25</sup>
- (d) *Labeling for fishery products*: Product labeling applies to processed fish foodstuffs and to fishery products.
- (i) Processed fish foodstuffs: Fishery products marketed in the European Union are subject to the general labeling rules for foodstuffs, general labeling rules for fishery products and specific labeling rules for certain fishery products subject to harmonized marketing standards. Labels of foodstuffs from fisheries must contain the following features: (a) the name under which the product is sold and details about to the physical condition of the product or the specific treatment it has undergone (e.g., freeze-dried, deep-frozen, smoked) must be included where omission of such may confuse the purchaser (b) the net weight of pre-packaged products; (c) the date of minimum durability consisting of day, month and year in that order and preceded by the words “best before” or “best before end” or the “use by” date according to product characteristics; (d) any special conditions for keeping or use; (e) the name or business name and address of the manufacturer, packager or seller established in the European Union; and (f) lot marking on pre-packaged product with the marking preceded by the letter “L”. Besides these mandatory rules, there is also additional information that may be included by the manufacturers on a voluntary basis provided that it is accurate and does not mislead the consumer. For example, nutritional labeling is not obligatory unless a nutritional claim is made on the label or in the advertising material. In this case, nutritional claims must comply with a standardized format.
- (ii) Fishery Products: The following information must be provided on the labeling or packaging of the fishery product, or by means of a commercial document accompanying the goods: (i) commercial and scientific designation of the species. For this purpose, EU member countries publish a list of the commercial designations accepted in its territory; (ii) production method (caught at sea or in freshwater, or resulted from aquaculture) indicated by the harmonized terminology; (iii) catch area, that is, whether caught at sea, caught in freshwater, or reference to the country of origin, and for aquaculture, reference to the country in which the product is farmed.<sup>26</sup>
- (e) *Rules of Origin Applicable to GSP Status*: All fishery products should be wholly obtained in the originating country, that is, Indonesia.

### A.3.2. Value Chain Analysis

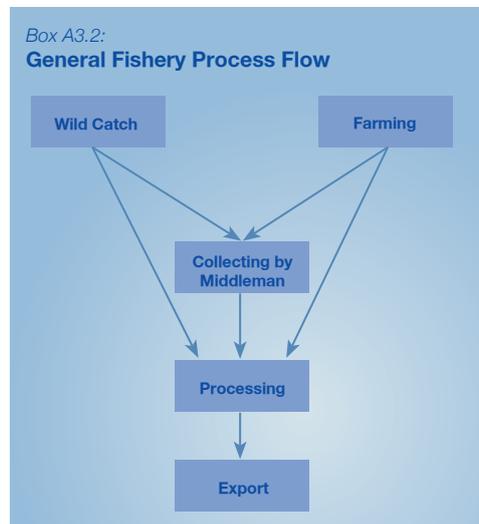
The value chain of the fishery industry can be described in terms of the activities (added value) undertaken by the various participants, such as wild catch, farmers, middlemen and processors. Box A3.2 illustrates the value chain for the fishery process. It shows the relationships between the various participants within the value chain and illustrates the flow of goods: from raw material supply to the final export product. Depending on the product two different value chains are applied. One value chain starts at the sea and is called wild sea catch and the other starts at fish or shrimp farming. The most important export product from wild sea catch is tuna although various fishery products are also caught. The two most important export products generated by farming are shrimp, milk fish and the tilapia fish.

25 In accordance with the provisions laid down in Council Directive 97/78/EC (CELEX 31997L0078), and applying the procedures laid down by Commission Regulation (EC) No 136/2004.

26 Additionally, specific labeling rules for certain fishery products are as follows: (a) country of origin in Roman letters at least 20 mm high; (b) scientific name and trade name; (c) presentation; (d) freshness and size categories; (e) net weight in kilograms; (f) date of grading and date of dispatch; (g) name and address of consignor. Lots must contain products of the same size and uniform freshness. The freshness category, size category and presentation must be clearly and indelible marked, in characters of at least 5 mm high, on labels affixed to the lot. The information provided by labels must be easy to understand, easily visible, clearly legible and indelible and must appear in the official language(s) of the Member State where the product is marketed.

In both value chains the product is collected by middlemen, also called collectors, and sold to the fishery processors. However, some fish processors buy the fish direct from farmers or fishing vessels. The fishery processors prefer direct purchasing as long as the supplier can provide sufficiently large amounts of products. Fresh tuna is always purchased direct from the fishery vessel as the freshness has to be guaranteed and the fish transported immediately. Most fishery processors export their products themselves without involving traders.

Export of fishery products to the European Union requires health certificates for each shipment. The Indonesian government is responsible for issuing health certificates. The European Union has appointed the Indonesian MMAF as the Competent Authority (CA). The structure of the Competent Authority (CA) in the MMAF that issues the certificate is discussed in the following sections. Then the processes and quality issues of the entire value chain of fishery processing are discussed with a special focus on shrimp farming and processing. The case study presented is related to fish farming and processing.



### A.3.2.1 Structure and Responsibilities of the Competent Authority

The food quality system in the Indonesian fishery sector is controlled by the Indonesian government, represented by the MMAF, and is based on agreements between Indonesia and relevant export countries such as the European Union, the United States and Japan. The structure of the Competent Authority in the MMAF described in this chapter has recently been changed. An overview on the new structure can be found in section 3.2.5.

The Directorate General of Fishery Products Processing and Marketing (DGFPPM), as part of the Competent Authority (CA), is primarily responsible for the implementation of the legislation related to food quality assurance and the food safety management of fishery products of Indonesia. The Approval Commission is responsible for providing recommendations for approval and the issuing of certificates. Certification is conducted for Good Aquaculture Practice (GAP), Good Handling Practice (GHdP), Good Manufacturing Practices (GMP) and Hazardous Analysis and Critical Control Point (HACCP). Laboratories conducting the tests required for the health certification for fishery products are supposed to be accredited by the Indonesian accreditation body KAN covering the scope of tests performed. Currently 25 laboratories of the 32 laboratories issuing health certificates are accredited. The remaining seven laboratories are in the process of accreditation.

The Competent Authority on the control of Quality and Safety Assurance of Fishery Products in Indonesia is the DGFPPM as stipulated in the Ministerial Regulation 01/MEN/2007 laying down the Control of Fish Quality and the Safety Assurance System. The CA delegates its authority of official control to the Directorate General of Aquaculture Fisheries (DG-A). This delegated authority includes the verification of compliance by drug monitoring and the installation inspection of aquaculture farms from hatcheries to the harvest of aquaculture products.

For the verification of compliance with requirements regarding wild sea catch involving fishing vessels, freezer vessels and the unloading process from fishing vessels, the CA delegates its authority of official control to the Directorate General of Capture Fisheries (DG-CF). The DGFPPM verifies the compliance of requirements regarding landing areas, transportation, processing and the distribution of fishery products. The CA assigns various tasks related to official control, including inspection, sampling, laboratory testing, surveillance and certification, to the designated Provincial

Fishery Services and Provincial Laboratories and other bodies. The CA carries out verification of the implementation of the specific tasks delegated to DG-A, DGC-F, Provincial Fishery Services, Provincial Laboratories and other bodies in order to guarantee national uniformity and coordination.

### A.3.2.2 Fishery Production Process and Export Quality Infrastructure

Box A3.3 describes the value chain including the testing and inspection elements of the export quality infrastructure.

#### Step 1 – Sea Wild Catch

*Process Description (Box A3.4):* Sea wild catch is the process of catching fish in the open sea. The catch is then stored in ice, sometimes with added salt to further decrease the temperature, and transported to the harbor or landing site for unloading and distribution. The catch is sold at auction or direct to the processor. Tuna is the most important wild catch export product for the European market, but also some other fish species are exported to Europe. The Indonesian fishing fleet consists mostly of small fishing boats. However, seven large freezer vessels are operating in Indonesia. On these freezer vessels the catch is processed on board ready for export.

*EQI Issues:* Quality issues in wild catch are mostly related to temperature and hygienic conditions on board the vessels and at the harbor. On the fishing vessel it has to be ensured that the temperature is always kept close to the temperature of melting ice. Such low temperatures are achieved by using ice or cool storage. It must be avoided that fishery products come into contact with bilge water, sewage, oil, grease and fuel. Equipment and surfaces coming into contact with products should be made of corrosion-resistant material that is easy to clean and to disinfect. Fishing ports and landing sites must be maintained in hygienic conditions.

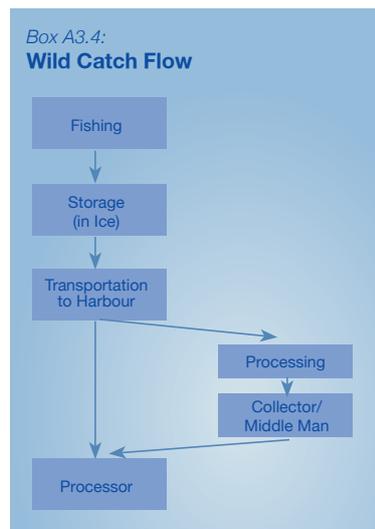
An EC mission final report recommends that sanitary requirements for unlisted fishing vessels providing raw material to the EU listed establishments should be equivalent to the Community ones including HACCP programs. The mission reported cases with insufficient inspection of vessels providing raw material to processors for export to the European Union. At present only a small percentage of the operating fishing vessels are inspected by the relevant Indonesian authorities. Records on fishing vessels are also not sufficient at central and provincial level. Block ice factories supplying fishery vessels sometimes do not have the necessary sanitary standards.<sup>27</sup>

*MSEs:* Quality issues found on small fishing boats are mostly related to hygienic and temperature control. Small fishing boats have problems in complying with the strict hygienic requirements due to insufficient knowledge on hygiene and limited space on the boats. Proper storage of the catch with ice is usually not ensured and hygienic conditions are uncontrolled and therefore not achieved.

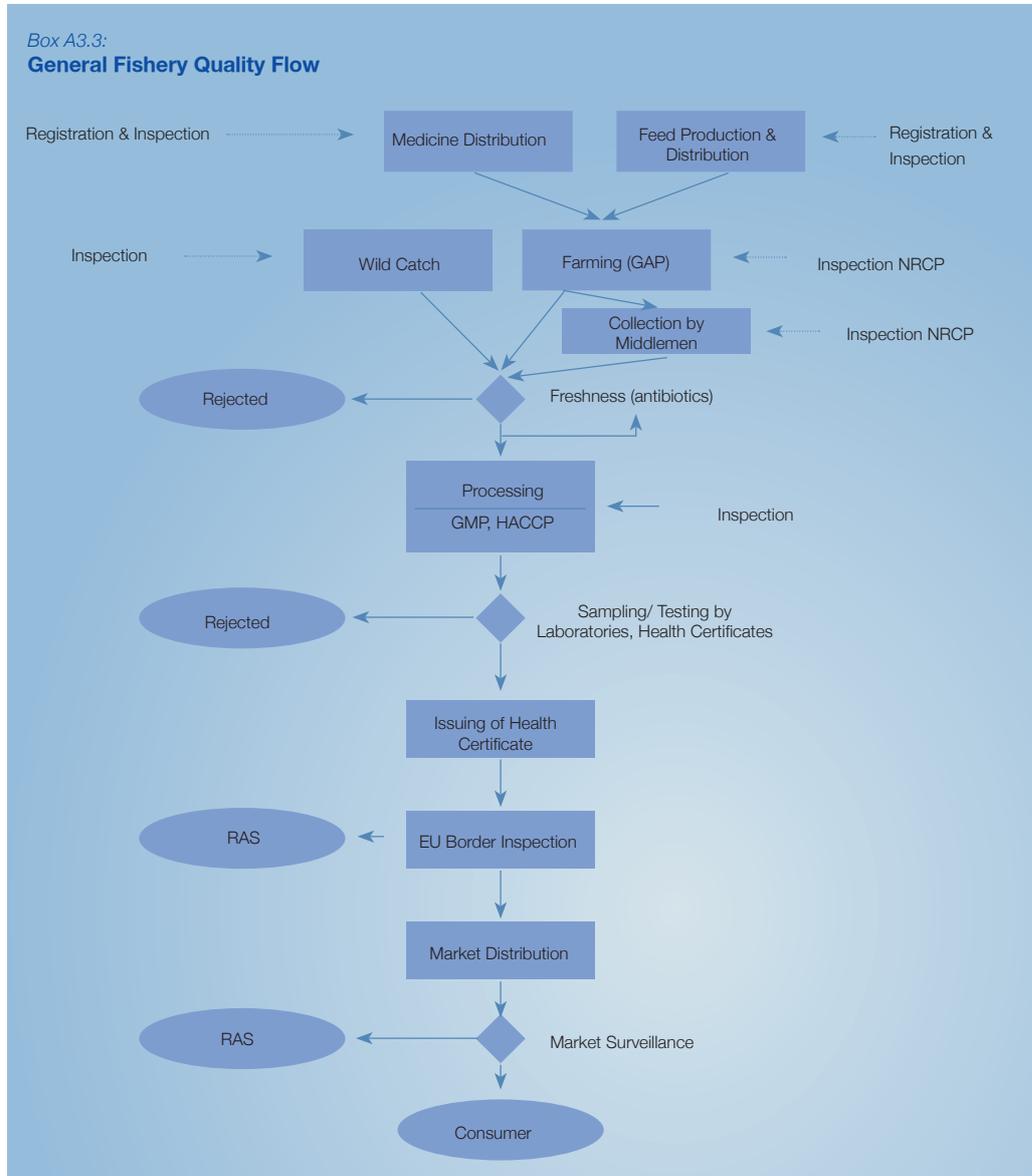
*Conclusion:* Quality and food safety improvements are necessary in fish vessels, fishing ports and at landing sites. Inspection of these facilities by the CA needs to be improved.

#### Step 2 – Shrimp Farming: Hatchery, Nursery and Grow Out

*Process Description (Box A3.5):* Three different kinds of shrimp farming are performed in Indonesia: extensive farming, which is also called traditional farming, semi-intensive farming and intensive farming. Of the two major species of shrimps that are farmed in Indonesia vannamei is produced



<sup>27</sup> Final report of a mission carried out in Indonesia from 23.2.2009 to 6.3.2009 in order to evaluate the control system in place governing the production of fishery products intended for export to the European Union, DG(SANCO)/2009-8044-MR-FINAL, [http://ec.europa.eu/food/fvo/ir\\_search\\_en.cfm](http://ec.europa.eu/food/fvo/ir_search_en.cfm)

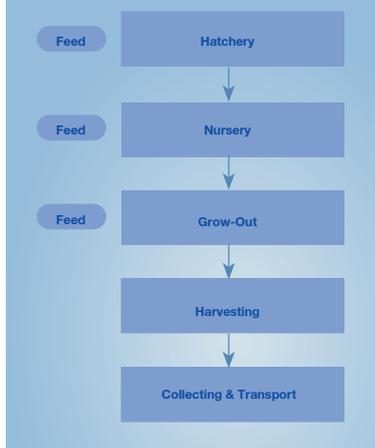


in intensive and semi-intensive farming, while the black tiger shrimp is usually grown in traditional extensive farming. In traditional farming the shrimp is often farmed together with fish like milk fish.

The process starts in the hatchery where the larvae are hatched to the post-larvae status. During the next step, in the nursery, these post-larvae are grown to juveniles within three weeks. In a last step shrimps are grown to maturity during the grow-out phase. The shrimps are then harvested and transported to a collector.

Grow-out operations are classified by stocking densities (the number of seed stock per hectare) and called “extensive” (low stocking density), “semi-intensive” (medium stocking density), “intensive” (high stocking density) and “super-intensive” (highest stocking density). As densities increase, the farms are smaller, the applied technology becomes more sophisticated, capital costs increase and production output per unit of space increases drastically. Farmers conducting extensive farming usually do not feed the shrimps and do not use pumps and aerators but rely on tide changes. In semi-intensive farming pumps are used for water circulation. In intensive farms the ponds are actively managed including aeration and high water exchange to remove waste products and maintain

Box A3.5

**Shrimp Farming Process**

water quality. Intensive feeding of specially designed diets is conducted.

*EQI Issues:* In hatcheries Good Hatchery Practice (GHcP) is applied to ensure that the fish from hatcheries are free of antibiotics and healthy. Specific Pathogen Free (SPF) fry and Specific Pathogen Resistance (SPR) fry can be purchased from the hatcheries.

To ensure the quality and food safety for aquaculture products farmers are required to implement Good Aquaculture Practice (GAP).<sup>28</sup> The aim of GAP is to grow and harvest the products in a controlled environment by rigorous control of sanitation as well as controlled application of feed, fish drugs, chemicals and biological substances in aquaculture. GAP includes the development and use of Standard Operation Procedures (SOPs) regarding pond preparation, seed stocking, feeding, fish health monitoring, feed management, and record keeping.

GAP certification can be achieved through the Directorate Production of Directorate General of Aquaculture of MMAF.

The presence of antibiotics in fishery products is still the major issue regarding export to the European Union. This is indicated by a 20% border inspection for aquaculture products which is imposed by the European Union for exports of aquaculture products from Indonesia.<sup>29</sup> The most important link in the chain of custody of antibiotics is the farming as antibiotics are frequently applied here. Good monitoring and control of the farms will be required to cope with this problem. Farms are spread over a large area and are partly located in remote areas. Additionally, it is almost impossible to trace the shrimps back to the point of farming due to the collection system employed, which involves middlemen.

*National Residue Control Plan:* The Directorate of Fish Health and Environment in the Ministry of Marine Affairs conducts the National Residue Control Plan (NRCP). The Directorate has a Residue Control Team, which does the sampling and provides guidance to the farmers. The team is supported by regional Residue Control Teams in the provinces of the 17 main aquaculture production areas. Samples are taken for testing from shrimp and tilapia farms depending on the amount of export content (1 sample per 100t export per year). The samples are tested in laboratories. However, implementation of the monitoring plan in MMAF has still some limitations. A recent EC mission to Indonesia found shortcomings in planning, implementation and its supervision, and follow-up of NRCP non-compliances.<sup>30</sup> Planning was found to be deficient in the number of samples used, adaptation to previous non-compliances, and the lack of validation in the analytical methods used. Planning implementation had shortcomings in the frequency of samples taken during the year, delayed submission of samples to laboratories, and prolonged storage of samples. Supervision of NRCP implementation was not considered to be effective since no corrective actions were being taken to sample submission delays, and some samples were not being analyzed. Only limited pre-export testing of some veterinary medical products was performed, and follow-up procedures were not always implemented in line with national instructions. The NRCP shortcomings observed during the EC mission are one reason leading to the imposition of border inspection in the European Union on 20 percent of the products sent from Indonesia.

*MSEs:* Extensive traditional farming is usually done by small, family sized businesses. The small farmers lack information on Good Aquaculture Practices and Good Handling Practices, which results

28 See Decree Kep 02/MEN/2007

29 See (Commission Decision C(2010) 2358)

30 See Final Report of a mission in Indonesia in order to evaluate the control of residues and contamination in live animals and animal products, including controls on veterinary medical products, November/December 2009, DG(SANCO) 2009-8191-MR FINAL

in shortcomings in hygiene and sanitation in the farming process as well as in the transport of the shrimp. Farmers do not control the water quality (salinity, pH, and dissolved oxygen) in their farms resulting in low survival rates. Transport of the shrimp from the farmer to the middlemen is often conducted in containers with unhygienic conditions and without the required cooling by the application of ice.

*Conclusions:*

- (1) **Competence of Farmers:** The competence of a large number of fish and shrimp farmers is insufficient in the following areas: production process control, knowledge of diseases and disease prevention, antibiotics, application of medicines and feed, applicable Indonesian and EU regulations, GAP and the handling of products. Systematic flow of information to the small farmers is not provided resulting in insufficient knowledge on Good Aquaculture Practice and Good Handling Practices.
- (1) **GAP Certification of Farms:** GAP implementation and certification will improve the health situation in the farms and will therefore ensure that the farmers attain the required product quality. At present GAP is only implemented in a few farms. Specifically the farmers operating on a small scale still lack knowledge on GAP. MMAF is currently implementing programs aimed at these farmers to achieve GAP certification. Competence of inspectors is apparently not sufficient. Improvement of inspection skills and technical knowledge of GAP is required. It appears that the management system of the Directorate of Production in the MMAF needs to be improved to ensure control of the GAP certification process. It is proposed to integrate the management system for GAP certification into the already established quality management system ISO 9001.
- (1) **National Residue Control Plan:** The management system of the NRCP in the Directorate of Fish Health and Environment requires improvement, especially with regard to the recording system of the NRCP. Cooperation and communication with the provinces could be enhanced.

### **Step 3 – Feed Production and Distribution**

*Process Description:* In intensive farming feeding is the most important factor in aquaculture farming. In intensive shrimp farms over one-half of the production costs are spent on feed. As extensive farms have low stocking densities, feeding is usually not required. However, some extensive farmers use small amounts of feed and fertilizer to stimulate a natural food chain.

*EQI Issues:* The Directorate of Production, Directorate General of Aquaculture is in charge of the feed supply control as well as the control of distribution and usage of fish feed. Control is carried out in accordance with the government regulation Per02/MEN/2010.31 165 types of feed are currently registered by 20 feed providers. However, plenty of feed available in the market is still uncontrolled.

*Conclusions:* Comprehensive feed control is not achieved yet by the Directorate General of Aquaculture. Uncontrolled feed is still available and applied. Cooperation between the national authorities and the local authorities, which do the feed monitoring in the provinces, could be improved.

### **Step 4 – Veterinary Medicines**

*Process Description:* Various medicines including antibiotics are used in fishery farming to prevent or treat diseases. By December 2009 147 products have been registered by 12 manufacturers of drugs and chemicals. These 12 manufacturers are licensed by the Directorate General of Aquaculture. However, many unregistered products from unlicensed producers can be found in the market. The use of veterinary medicine is supposed to be controlled by the Directorate for Fish Health and Environment within MMAF in accordance to government regulations KEP.26/MEN/2002 and KEP.20/MEN/2003.<sup>32</sup>

<sup>31</sup> See Decree of Minister of Marine Affairs and Fishery Per02/MEN/2010 concerning feed production and distribution.

<sup>32</sup> See Decree of Minister No. KEP.26/MEN/2002 regarding Supply, Distribution, Use and Control of Fish Drugs, the Decree of Minister No. KEP.20/MEN/2003 regarding Fish Drugs Classification and Minister Regulation No. PER.15/MEN/2007 pertaining Requirements and Procedures of Fish Drugs Business License Publication.

*EQI Issues:* The application of antibiotics for disease prevention in fishery farming appears to be the significant quality obstacle in veterinary medicine for fish farming. Two major problems have been observed in this regard: (1) The control of drugs and chemicals conducted by the MMAF is still insufficient and (2) it is not ensured that all farmers and medicine distributors have information concerning EU regulations and restrictions on antibiotics.

*Conclusion:* Antibiotics are still used in fish and shrimp farming. The knowledge of farmers about antibiotics and restrictions is insufficient and the control of drugs in fishery farms applied by the MMAF has shortcomings.

### **Step 5 – Collection by Middlemen and Transport to Processor**

*Process Description:* Shrimp farms are usually located in remote areas and most processors do not regard it as economically viable to collect directly from the small farmers. Therefore middlemen, also called collectors, do the collection. The harvested shrimps are either brought to the collection point of the middlemen by the farmers or are collected by the middlemen directly from the farmers. In any case cooling boxes with ice are only used occasionally during transport. The middlemen visually check and sort the shrimps according to quality and sell them to the processors or in a local market.

*EQI Issues:* At present the collection and transport of shrimp and fish from farms is conducted under uncontrolled conditions. The required cooling chain is not properly implemented and it is still common practice by farmers and collectors to increase the weight by storing the shrimp in water (without ice) over several hours (which can increase the weight by up to 10 percent)

Middlemen collect shrimps from several farmers and usually mix the products from different sources making traceability impossible. It appears that the middlemen are most likely the weakest actor in the supply chain in regards to quality assurance. This fact was also detected by the EU mission 2009.

The MMAF promotes the handling of the fishery farming products by the application of Good Handling Practices. Despite the fact that middlemen have been advised to implement GHdP in some areas it is obvious that the implementation of GHdP is still weak and control of the MMAF is insufficient.

*MSEs:* Most middlemen are basically family run MSEs. Hygiene and food safety is still unsatisfactory at the middlemen level. Good Handling Practices is not implemented, ice is not sufficiently used and the weight of the shrimp is increased on purpose by storing the product in water without ice. No systematic information flow to the middlemen is established resulting in insufficient knowledge of Good Handling Practices.

*Conclusion:* GHdP is not well known and not applied by the middlemen and the chain of custody ends at these middlemen. Traceability cannot be achieved due to the common practice of unrecorded collection and mixing of products. The MMAF and the local authorities have also identified the control of the middlemen as a main focus for improvement in the future.

### **Step 6 – Processing**

*Process Description:* Shrimp products for export are frozen shrimps with value added modifications. Typical added value products are breaded shrimps or peeled shrimps, head off shrimps, and semi-peeled shrimps where the last part of the shell at the tail is still attached to the shrimp. The main activities in shrimp processing are washing, peeling, cutting, packing and deep freezing. These production process steps are supported by quality assurance measures such as incoming inspection, in-process inspection, checking of products with a metal detector, and final inspection.

*EQI Issues:* Companies exporting to the European Union need a Company Approval issued by the European Union. Currently 149 exporters are registered and approved. Processing companies exporting to the European Union are required to implement Good Manufacturing Practices (GMP), certified with the "Sertifikat Kelayakan Pengolahan" Grade A (SKP A) and have to be certified for Hazardous Analysis and Critical Control Point (HACCP). The fishery processors are also required to conduct second party audits on their suppliers and must ensure traceability to their sources of raw material.

Quality and food safety has to be controlled at all relevant steps in the production process. Critical control points within fishery processing are commonly related to (1) incoming inspection, (2) hygiene in production area, (3) temperature control, and (4) detection of metal pieces in the product.

(1) During incoming inspection of the supplied fishery product the freshness of the products is checked visually. Antibiotics in shrimps can be detected with the fast screening “Elisa” method. At present only large companies can afford to purchase Elisa equipment and it is consequently very difficult for the smaller processors to detect antibiotic residues at incoming inspection.

(2) Hygiene is an important factor in any food processing industry. Therefore fishery processors have to ensure clean and hygienic conditions and ensure that all persons working in the production area wears plastic boots, special clean clothes and a head cap or hood. Regular hand washing is mandatory. Some companies even use rollers and special blowers to remove dust from the coats before entering the processing area.

(3) Temperature has to be controlled during the entire production process. Storage of products in ice during the entire processing process must be ensured as well as deep-freezing below -18C for finished product.

(4) Products are not allowed to contain any metal pieces. Metal detectors are used at the final inspection to ensure that any metal containing product is sorted out prior to packing.

Fishery processors are required to audit their suppliers in regard to GHdP focusing on hygiene, proper storage and recording for traceability. It has been observed that such second party audits are rarely performed and do not provide sufficient evidence of the use of antibiotics at the farmers end since most processors buy the shrimp from middlemen and consequently audit these collectors. At present most fishery processors lack sufficient knowledge and experience in conducting the required supplier audits.

To summarize the observed EQI issues at fishery processors it can be stated that the proper application of the required GMP and HACCP is not entirely ensured. The EU inspection mission conducted in 2009 revealed shortcomings in hygiene and sanitation issues in several companies. One obstacle appears to be the insufficient competence of the auditors deployed by the local authorities to conduct the certification audits.

Fishery processors also frequently face additional requirements from their buyers. Buyers request additional system certifications such as ISO 22000, Food Safety, Quality and Food Defense Audit (NSF international), BRC Global Standard for Food Safety (BRC), and Marine Stewardship Counsel (MSC) audit on sustainability of sea catch. The expenses for such audits and certifications can add up to several thousand Euros, even up to Euro 100.000 per year.

*SMEs:* SMEs are in a very difficult situation to cope with all the stipulated requirements due to the complexity and the required level of knowledge and experience with HACCP and GMP and the financial means required. Additionally small producers do not have direct access to information on EU regulations and the information channels from the MMAF to the companies are too slow.

*Conclusion:* Three main areas of shortcomings have been identified: (1) control of the shrimp processing at company level (2) control of supplier through second party audit and (3) competence of auditors acting under the provincial authorities. Despite the fact that all fishery product processors exporting to the European Union apply certified HACCP and GMP systems, shortcomings in hygiene and sanitation are still evident and second party audits on their suppliers (middlemen and farmers) are not or not properly conducted. The competence of auditors deployed by the local authorities to conduct the certification audits is insufficient.

### **Step 7 –Issuing of Health Certificates**

*Process Description:* Health certificates for export to the European Union are issued by the provincial fishery laboratories, which are under the authority of the Provincial Governments.

EQI Issues: Fishery products can only be imported into the European Union if they are accompanied by the proper health certificates. The health certificate issued by the provincial authorities certifies that the product has been produced in accordance to the requirements of EU regulations.<sup>33</sup>

Health certificates are issued based on the following requirements:

- Implementation of Good Manufacturing Practice (GMP) / Sertifikat Kelayakan Pengolahan Grade A (SKP A)
- Implementation of HACCP
- Internal audits and second party audits of suppliers
- Traceability of product
- External audit / inspection by the Competent Authority and local inspectors
- Catch certificate for sea catch
- Test certificate

The health certificate is issued based on these documents, which are the result of testing and inspection. At present the competent authority is in the process of shifting the quality and food safety system from end-product control (testing of export goods) to in-process control based on the monitoring and inspection of implemented management measures.

### **Step 8 – Border Inspection**

*Process Description:* Upon arrival the products and their accompanying certificates are verified by officials at border inspection points (BIP). In depth inspections of products, including quality tests, will be performed in a proportion of cases.

*EQI Issues:* The frequency of the border inspections depends on the risk profile of the product and also on the results of previous checks. From 2006 to 2008 a 100% border inspection had been conducted in the European Union for fishery products from Indonesia.<sup>34</sup>

The European Union decided on 16.4.2010 that samples are taken and tested from at least 20% of the aquaculture product consignments imported from Indonesia.<sup>35</sup> The reason for this border inspection are shortcomings in the National Residue Control Plan, fishing vessels and some listed establishments in Indonesia. The consignments are only released after the tests for the detection of residues of antibiotics have shown that they comply with EU regulation.<sup>36</sup> All expenditure incurred is charged to the consignor or the consignee and is currently about Euro 3,000, which must be regarded as a serious burden to Indonesian exporters.

### **Step 9 – Post market Surveillance**

*Process Description:* EU member countries perform regular post market surveillance. The result of this surveillance may yield to increased border inspections or full border inspections. The European authorities might even suspend imports from all or part of the third country concerned or take interim protective measures when products may present any risk for public or animal health - as in the case of dangerous diseases outbreaks.

*EQI Issues:* European Authorities rejected Indonesian fishery exports over the years for several reasons. Table A3.1 shows the number of and the reasons for rejections between 2005 and 2010. In 2005 and 2006 the number of rejects was very high mostly due to carbon monoxide, histamine, heavy metals and antibiotics. The issue of carbon monoxide was solved and does not appear anymore. Rejects due to histamine, heavy metals, and antibiotics are reduced, but still remain.

<sup>33</sup> See regulations (EC) No 178/2002, (EC) No. 852/2004, (EC) 853/2004 and (EC) 854/2004

<sup>34</sup> Based on regulation No. 2006/236/EC, 100% border inspection has been performed in the EU starting 2006. This inspection has been removed dated 30.7.2008

<sup>35</sup> See (Commission Decision C(2010) 2358)

<sup>36</sup> See (EC) No 470/2009

### A.3.2.3 Fishery Testing Laboratories

*Description:* Various laboratories are involved in the testing of fish products such as provincial fishery laboratories, laboratories for fishery diseases under the MMAF, laboratories dealing with aquaculture under the MMAF, Balai Besar Industri Agro (BBIA, Research Center for agriculture industry), private laboratories and the laboratories of fishery companies.

Table A.3.1:

#### Rejections of Indonesian Fishery Products in European Union

Year	Carbon Monoxide	Heavy Metal	Histamine	Antibiotics	Microbiology	Organoleptic	Others	Parasite	TOTAL
2005	25	4	5	6	9	0	6	-	49
2006	3	20	4	9	2	-	-	-	38
2007	2	9	5	3	1	-	-	-	20
2008	-	4	1	1	1	-	-	-	7
2009	-	3	-	4	-	-	-	-	7
2010	1	3	1	2	3	-	-	-	10

Note: 2010 data through September 2010.  
Source: Data from EU delegation Indonesia

*Provincial Laboratories for Issuing Health Certificates:* Thirty-nine provincial fishery testing laboratories are appointed by the competent authority to conduct testing for export health certificates. These institutions also issue the health certificates and conduct inspection. The laboratories are backed up by the national fishery reference laboratory (NCQC, National Center for Fish Quality Control).

*Laboratories used for NRCP (National Residue Control Plan):* The MMAF has appointed seven laboratories to perform testing for the national residue control plan. Three of these laboratories are under the authority of the MMAF, two laboratories are provincial fishery laboratories and two are private laboratories. One of the MMAF laboratories also serves as a reference laboratory.

*Laboratories for fish diseases:* The MMAF runs 46 laboratories for the testing of fish diseases in the provinces, including one reference laboratory. These laboratories, which are different to the provincial laboratories issuing the health certificates, are under the direct authority of the MMAF. At present these MMAF laboratories conduct tests for fish diseases and microbiological parameters only.

*Private and other laboratories:* In addition to the fishery laboratories of the MMAF, other government and private laboratories conduct fish testing in Indonesia - for example PT Sucofindo, Laboratory for Quality Testing of Export and Import Goods / Balai Pengujian Mutu Barang Export dan Impor (BPMBEI)- MOT, and Balai Besar Industry Agro (BBIA)-MOI .

*Laboratories of processors:* Processors often have their own laboratory for quality assurance testing. Some larger shrimp processing companies use Elisa equipment for antibiotic screening of shrimps.

#### EQI Issues:

- (1) Provincial Fishery Laboratories: The laboratories have to perform testing in accordance to EU requirements. Official sampling conducted related to export to the European Union must be based on the procedures as described in detailed rules.<sup>37</sup> Analytical methods used for testing of certain residues in fishery products must be able to detect certain minimum values of content.<sup>38</sup> International standard testing methods have to be used and validated to ensure that results are comparable.

All these laboratories are required to be accredited in accordance with ISO 17025. However, some of the laboratories providing tests for issuing of health certificates are not accredited for

37 European Commission Decision 98/179/EC describes details for sampling and sampling handling until the samples reach the laboratory responsible for analysis

38 The Commission Decision 2005/34/EC sets harmonized standards for the testing by using MRPLs (Minimum required performance limits) as action limits.

the entire scope of the testing performed. Consequently their competence in regards to certain test parameters is not recognized, which creates a serious obstacle especially in respect of the detection of antibiotics and heavy metals in products designated for export.

It has been found that the competence of MMAF appointed fishery laboratories varies significantly and cannot be regarded as universal. The laboratories of DKI Jakarta, Surabaya and Medan appear competent with suitable quality management system implementation. Most laboratories located in remote provinces are found to have a severe lack of competence especially with regard to the analytical measurement of heavy metals, histamine and antibiotics.

Lack of competent personnel is still a major issue in many fishery laboratories. The provincial governments in charge of operating fishery laboratories do not always ensure the required competence of technical staff and management.

The above-mentioned observations became evident during the EU inspection mission conducted in 2009, which discovered shortcomings regarding proficiency tests and the use of standard methods. Proficiency tests for histamine and heavy metals in several official laboratories yielded unsatisfactory results. In addition the analytical method used for histamine detection was not the method provided by the European Union and was not validated against the official EU method.

- (2) Laboratories used for NRCP (National Residue Control Plan): The two main quality issues of the laboratories for NRCP are found to be in accreditation and proficiency testing: (1) Most of the testing laboratories owned by the government and used for testing for NRCP do not have accreditation for the relevant parameters for residue control. (2) No proficiency tests are performed by the reference laboratory although the task of this laboratory includes periodic proficiency tests for each substance.<sup>39</sup>
- (3) Laboratories of Fish Diseases of MMAF: These laboratories are currently restricted to testing of parasites and microbiology and are not able to perform testing on histamine, heavy metals and antibiotics. However, the laboratories have the advantage of being owned and controlled by the MMAF. Thus, the MMAF can influence quality measures in these laboratories by providing personal, financial funds, equipment, training and consultancy.
- (4) Private and other laboratories: The BBIA and the BPMBEI are capable of testing parameters in fish but as they are not acknowledged by the MMAF as official testing laboratories they cannot conduct testing for export to the European Union.
- (5) Laboratories of processors: The laboratories of processors are often found not to be sufficiently familiar with quality assurance application in their laboratory. Proficiency tests are not conducted and certified reference material is usually not used. Traceability to national and international standards is therefore not achieved.
- (6) General Quality Issues in the Laboratories: Provincial fishery testing laboratories still have shortcomings with regard to following elements of laboratory quality management:

*Method verification:* many laboratories have not verified their applied methods

*Quality Assurance:* Control charts for accuracy and precision are not applied; proficiency tests and certified reference materials are rarely used.

*Proficiency Tests:* The number and frequency of proficiency tests provided for fishery products are not sufficient. The Indonesian Institute of Sciences LIPI (Lembaga Ilmu Pengatuhan Indonesia) is currently establishing an institution for Metrology in Chemistry, which shall coordinate proficiency tests for chemical parameters in Indonesia. Under the coordination of the LIPI proficiency tests for fishery products can be performed by the LIPI institute itself or by the NCQC. The LIPI is supported by a project of the German Government administered by Physikalische Technische Bundesanstalt (PTB).

<sup>39</sup> Ministry of Marine Affairs and Fisheries, Directorate General of Aquaculture, Directorate of fish health and environment: National Residue Control Plan 2010

*Certified Reference Material:* Currently not many laboratories are using CRM due to its high cost. The above-mentioned chemical institute of LIPI is designated to produce certified reference material and coordinate the production of CRM in selected other institutions. Once implemented it can be expected that this program will solve the problem with CRM.

*Calibration:* Several laboratories still have problems with the calibration of their equipment. Un-calibrated equipment is frequently found in laboratories and, where calibration is conducted as required, the technical staff is often not able to interpret the calibration certificate.

*Conclusions:* The main issue identified with regard to test laboratories is the lack of competence of testing laboratories and the large amount of fishery laboratories and reference laboratories. Not all laboratories performing testing for health certificates are able to comply with EU requirements for testing of fishery samples. Quality assurance, calibration and method verification still needs improvement. Proficiency tests and certified reference materials are rarely used.

It appears to be quite difficult for the Government to improve all 88 testing laboratories and three reference laboratories in the fishery sector. Sufficient quality is unlikely to be ensured in all of these laboratories and efficiency is questionable.

#### A.3.2.4 In-process Inspection

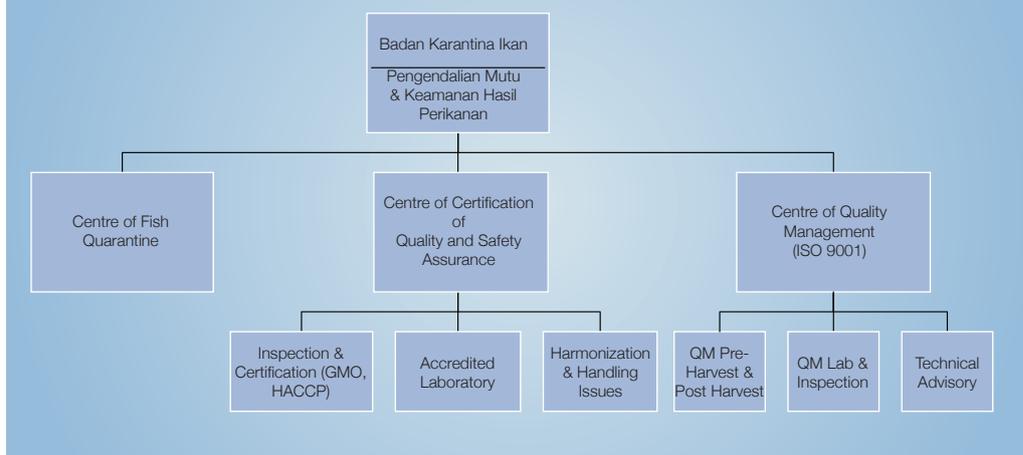
*Description:* The provincial authorities under the supervision of the national authorities conduct Inspection of HACCP and GAP. In-process inspection is supposed to be performed at the levels of farmers, middlemen and processors. However, inspection of middlemen has just been started by some authorities.

*EQI Issues:* During the last EU mission many shortcomings were observed at the level of processors. Some of these shortcomings had not been identified during the official inspection by the provincial authorities. Such issues included measurements related to process control (e.g. temperature), dirty and dusty equipment because of insufficient maintenance, hygiene issues and inadequate definition of critical control points in the HACCP system. The fact that provincial inspectors failed to identify these deficiencies indicates the lack competence of these inspectors.

Inspection by the provincial authorities should ensure reliable and reproducible results. The standard ISO 17020 provides requirements for quality management systems for inspection bodies. Implementation and maintenance of this standard would ensure sufficient competence of these

Box A.3.6:

#### Structure of New Center for Fishery Quality



inspection bodies. However, the inspection bodies of the Provincial Governments are not yet accredited for ISO 17020.

*Conclusion:* Two major shortcomings have been identified: (1) Inspection of farmers, middlemen, fishing vessels and processors is not comprehensive, particularly at the level of the middlemen. (2) The competence of inspection bodies and their inspectors is not ensured through certification according to ISO 17020.

### **A.3.2.5 Organizational Issues**

The MMAF has implemented a quality management system based on ISO 9001 that will control quality issues throughout the entire fishery value chain. Currently the authorities for quality and food safety for fishery products are divided into three different General Directorates that share the responsibilities to control the quality infrastructure of the whole fishery value chain. Suitable and efficient coordination among these General Directorates appears difficult, which leads to shortcomings in quality assurance.

Another obstacle is the fact that the laboratories and institutions issuing the certificates in the provinces are under the local Provincial Government. The MMAF can guide these institutions but has no direct control over them. As already stated, provincial authorities experience difficulties in ensuring the required competence of technical personnel in their laboratories. This problem arises from a very limited availability of well educated people in all provinces outside Java and Bali and the fact that local governments frequently rotate personnel between positions not based on competence but for other reasons.

The MMAF is now establishing a new center (Badan Karantina Ikan Pengendalian Mutu dan Keamanan Hasil Perikanan) where all units related to fishery quality are united. The new structure is shown in Box A3.6.

*Conclusion:* The MMAF is currently undergoing a restructuring process with the aim of achieving a higher efficiency and better quality. The new structure will combine all export quality relevant units in one new center. The existing quality management system (ISO 9001) does not suit the revised structure and will have to be adapted.

## **A.3.3. Industry Support Services**

The four most important institutions supporting actors in the fishery value chain are the Ministry of Marine Affairs and Fishery, the Association for Fish Processing and Marketing Companies in Indonesia, (Asosiasi pengusaha pengolahan dan pemasaran perikanan Indonesia, AP5I), the Shrimp Club Indonesia (SCI) and the Seafood Service Center in Surabaya. Several other associations have been identified but appear to be of comparatively little relevance. However, they shall be listed here: Masyarakat Akuakultur Indonesia, Association of Aquaculture Product Support, Asosiasi Pembenuh Udang Indonesia (APUI), Association for Tuna Fish Companies (ASTUIN), Gabungan Pengusaha Makanan Ternak Indonesia, Asosiasi Pengusaha Ikan Kaleng Indonesia, Indonesian Fisheries Federation, Indonesian Fisheries Federation, Masyarakat Perikanan Indonesia, Komisi Udang Indonesia, and Asosiasi Rantai Pendingin Indonesia.

### **A.3.3.1 Ministry of Marine Affairs and Fishery**

The Production Directorate of the Directorate General for Aquaculture provides a set of well developed brochures on different aquaculture topics. Guidelines are available for Good Aquaculture Practices, GAP certification, technical guidance on fish farming for various fish species, fish feeding and feed production. The Directorate also provides direct consultancy and guidance to farmers during field visits.

### A.3.3.2 Association for Fish Processing and Marketing Companies in Indonesia, Asosiasi pengusaha pengolahan dan pemasaran perikanan Indonesia (AP5I)

AP5I is a processing and marketing association of Indonesian fishery processors, which is involved in the development of the Indonesian fishing industry and has Regional Management Coordinators for the following regions: DKI Jakarta & Lampung, Sumatra, Kalimantan, Sulawesi and Java / Bali. AP5I acts as a forum for export and import companies operating in Indonesia involved in processing and production, distribution, transportation, storage and the marketing of fishery products. Suppliers supporting fishery-related activities such as certification, laboratory, retail sale and packaging are also represented.

AP5I is conducting seminars, training, workshops and meetings with business stakeholders, providing information on markets and applicable regulatory legislation. AP5I is regularly publishing the AP5I Newsletter on the above issues but does not have a website yet. AP5I aims to align the interests of employers and the Government in improving quality, safety and environmental friendliness. The Association also supports developing human resources in the fields of planning, production, fishing, cultivation, processing and marketing of fishery products. Furthermore, it provides advice and input for the Government and other organizations in order to improve the image of the Indonesian archipelago. Lastly, AP5I endeavors to increase the awareness of its members in quality, quality improvement, and product safety standards - such as required GMP standards, HACCP food safety management system, and ISO standards (International Organization for Standardization)

### A.3.3.3 Shrimp Club Indonesia

The Shrimp Club of Indonesia (SCI), a shrimp farmers association, was established in 2005<sup>40</sup> with the aim of tackling global issues in shrimp farming and processing such as dumping, sustainable aquaculture, traceability and food safety.

### Box A3.7: Food Safety in Fisheries

An important feature of the fish-processing industry is that, while the operations are mostly small to medium scale, there is enormous diversity in the species of fish handled. For each type of processing, the fish can be prepared in several ways, from manual methods to fully automated operations, and then packaged in a wide variety of ways depending on the location and market demand. The various levels of progress and scales of operation available in the world increase the differences between species. What may be appropriate in an industrialized fishery is often not suitable for a small-scale artisanal fishery in a developing country. Furthermore, fish preservation and processing may vary according to species.

Each of the many thousands of fish species has its own characteristic composition, size, shape and intrinsic chemistry. Fish is very perishable and several chemical and biological changes take place immediately after capture. Fish requires careful handling and preservation, special facilities such as cold storage and refrigerated transport, and rapid delivery to consumers. Therefore, the research and development of post-harvest systems for handling raw material are important to developing appropriate measures to: (i) increase its shelf life; (ii) reduce physical, organoleptic (sensory) and nutritional losses; and (iii) preserve the quality and safety of the finished products. This is important for ecological, social and economic reasons – to safeguard consumer health and food security and to ensure the sustainability of the industry.

In many developing countries with tropical ambient temperatures, quality deterioration and significant post-harvest losses occur because of inadequate use of ice, long supply chains, poor access to roads and electricity, and inadequate infrastructure and services in physical markets. Market infrastructure and facilities are often limited and congested, increasing the difficulty of marketing perishable goods.

The utilization and processing of fish production have diversified significantly in the last two decades, particularly into high-value fresh and processed products, fuelled by changing consumer tastes and advances in technology, packaging, logistics and transport. These changes include improvements in storage and processing capacity, together with major innovations in refrigeration, ice-making, and food-packaging and fish-processing equipment. Vessels incorporating these improved facilities and able to stay at sea for extended periods have been built. This has permitted the distribution of more fish in live or fresh form. Moreover, improved processing technology enables higher yields and results in a more lucrative product from the available raw material.

**Source:** Food and Agricultural Organization (FAO) of the United Nations, "The State of World Fisheries and Aquaculture (SOFIA)". Available: <http://www.fao.org/publications/en/>.

40 Information received from: [www.shrimpnews.com/FreeNewsBackIssues/FreeNewsNovember200702.html](http://www.shrimpnews.com/FreeNewsBackIssues/FreeNewsNovember200702.html)

The SCI has 360 members, mostly intensive shrimp farms, on the islands of Sumatra, Java, Borneo, Sulawesi, Lombok, Sumbawa and Bali. The SCI promotes healthy shrimp farming without the application of antibiotics and creates awareness about the environmental impact of shrimp farming and provides guidance on the management of effluents.

#### **A.3.3.4 Seafood Service Center in Surabaya**

The Seafood Service Center in Surabaya provides consultancy and training on market information, market access requirements (including EU market requirements), export assistance, export marketing and management training - and the diversification for value-added products. The Seafood Service Center provides Training of Trainers on export marketing and development and trends in the European market for fishery products. This center has been cooperating with Dutch, Swiss and Indonesian projects and is probably the only professional private organization in Indonesia, which provides such services. It appears that this organization works quite effectively for its customers.

*Conclusion:* Industry support services are available and play a significant role in the development of the fishery value chain. The Seafood Service Center works with the fishery industry and has experience in providing training and consultancy. The staff of the Center is very knowledgeable and familiar with the problems in the fishery sector in Indonesia. The Shrimp Club appears to be a suitable cooperation partner for pilot projects with farmer groups and may also facilitate nationwide capacity building for farmers. AP5I has excellent access to processors and is therefore capable of disseminating information to this specific target group. The MMAF has a wide network through the provincial fishery laboratories and has direct access to producers, farmers and shipping vessels. Capacity building measures could be planned and performed in cooperation with these four institutions.

### **A.3.4. Regulatory Framework**

The Government's overall development strategy for the fishery industry is (a) to increase employment opportunities, income and welfare of fishermen and aqua-farmers; (b) to increase foreign exchange earnings by increasing quality and quantity of landings and aquaculture products; and (c) to improve the nutritional standard of the people, especially those in lower-income strata. To that end, the Government has established for the industry a legal and regulatory framework, supported by an institutional structure. The basic law governing fisheries is Law No. 31 of 2004 on Fisheries, which replaces Law No. 9 of 1985. The new law underscores the importance of sustainable use of aquatic resources in the development of fisheries. Under Law No. 22 of 1999 on Regional Administration, provincial governments are held responsible for the management, use and conservation of marine resources within territorial waters.

#### **A.3.4.1 Institutional Structure**

Indonesia's main fishery authority is the Ministry of Marine Affairs and Fisheries (MMAF). It is responsible for marine and fishery sector planning, management and administration in Indonesia. The Ministry comprised six line offices that consist of an Agency for Marine Affairs and Fisheries and five Directorate Generals covering Aquaculture, Capture Fisheries, Coastal and Small Islands, Marine and Fisheries Resource Controls and Capacity Building and Marketing.

Responsibility for local-level marine fishery management rests with the Provincial Marine and Fisheries Service (Dinas Kelautan dan Perikanan Propinsi), which has offices at province, district and sub-district levels. Since the adoption of Law No. 22/1999, the Provincial Marine and Fisheries Services have been given more responsibilities as well as greater autonomy in carrying out their functions, being no longer under the technical supervision of the MMAF.

Notwithstanding these changes, regulation of the fishing industry remains weak. The key problems are (a) confusion over the jurisdiction of MMAF and other enforcement agencies; (b) lack of adequate infrastructure and manpower to control vessels in the high seas; and (c) weak governance at the

provincial level.<sup>41</sup> These constraints have made it difficult for the Government to ensure full compliance with the EC's catch certification requirements. They also weaken the ability of the Government to effectively control illegal, unreported and unregulated (IUU) fishing.

#### A.3.4.2 Implementing Regulations and Compliance

Implementing regulations include (i) Presidential Decree 39 of 1998 restricting the use of trawler nets in many regions; (ii) Minister of Agriculture Decision No. 392 of 1999 establishing fishing zones based on distance from shore; and (iii) MMAF Decision on the regulation of fishing vessel operations in the Exclusive Economic Zone (EEZ) establishes foreign access conditions (joint ventures, purchase in installments and licensing). This last decision was amended in 2007 to prohibit the licensing of foreign flagged vessels for fishing in Indonesia's EEZ.

Enterprises engaged in the fishery business are required under the 2004 Fisheries Law to have a Fisheries Business License (SIUP) for both fishing and aquaculture. Micro and small enterprises are exempt from this requirement. Enterprises that have been granted a SIUP and use foreign vessels in Indonesia's EEZ must apply for a Foreign Vessel Permit (PPKA).

Overall compliance of the laws and regulations is the responsibility of the Directorate General of Surveillance and Control of Marine Resources and Fisheries in the Ministry of Marine Affairs and Fisheries. Its jurisdiction is limited to vessels exceeding 30 gross tons, while provincial governorates are responsible for overseeing smaller vessels. The armed forces are also responsible for law enforcement. Lack of cooperation between these agencies weakens their effectiveness.

#### A.3.4.3 Disease control

The Indonesian quarantine system is regulated by Law No.16 of 1992 on Animal, Fish and Plant Quarantine, as regards the import, export and transfer of animals and plants, including aquatic species. Specific provisions affecting live fish are provided by Decree No. 265 of 1986 from the Ministry of Agriculture on Quarantine Requirements for the Importation of Live Fish into the Territory of the Republic of Indonesia (1986) and Decree No. 245 of 1990 on Quarantine Measures taken on Live Fish Exported from the Territory of the Republic of Indonesia.

#### A.3.5. Case Study of Fish Farming and Processing

PTA is an Indonesian fishery product manufacturer with a foreign shareholder. PTA farms and processes Tilapia fish in two Indonesian provinces, North Sumatra and Central Java. In North Sumatra the farms are located in Toba Lake, while in Central Java reservoirs are used for farming. The company sells most of its products to the United States, however, the second largest export destination is the European Union. PTA conducts its business in an integrated way to ensure compliance with international requirements. The company controls the entire value chain, from breeding of fry to hatchery, farming, processing, packaging and transport to their customers. PTA has developed a unique system of fish hatchery and farming, which includes small farmers. These small farmers can all be classified as MSEs and work independently as subcontractors. They take on fixed price contracts.

**Control of Fish Processing:** PTA has bred a fry with an economically optimized shape (small head, thin skin) and they hold the property rights of this fish fry. PTA sells the fry to contracted hatcheries that grow the fry to a weight of about 20g. These juvenile fish are purchased by PTA and are sold to other selected farmers (MSE) for the grow-out phase. The fish farmers grow-out the fish within six to seven months when the desired size of about 700 – 1000g per fish is achieved. The farmers grow the fish independently and provide all feed but are supervised by the PTA to ensure the correct feed is applied. Finally PTA buys the grown-out fish and transports the fish to its own factory.

41 Didik Mohamed Sodik, "Combating IUU Fishing in Indonesian Waters; the need for fisheries legislative reform", PhD Thesis, University of Wollongong, Australia, 2007.

PTA has developed clear regulations on hatching and farming and monitors its subcontracted hatcheries and farmers. To ensure the quality of the fish, PTA also provides training to these farmers on important issues regarding farming techniques, quality, and food safety issues. PTA provides guidance and supervision to ensure that the MSEs follow all regulations in order to meet the requirements of the customers in the export countries.

**Fish Processing:** The main steps during fish processing are slaughtering, filleting, skinning, trimming, grading, and packing. The fillets are cut to certain sizes and wrapped in food quality packaging material. All packages are checked in a metal detector, packed in larger boxes and labeled. The ready product is stored in the cold storage at -20C.

**Quality Assurance:** Quality assurance is performed during all process steps, from fry development

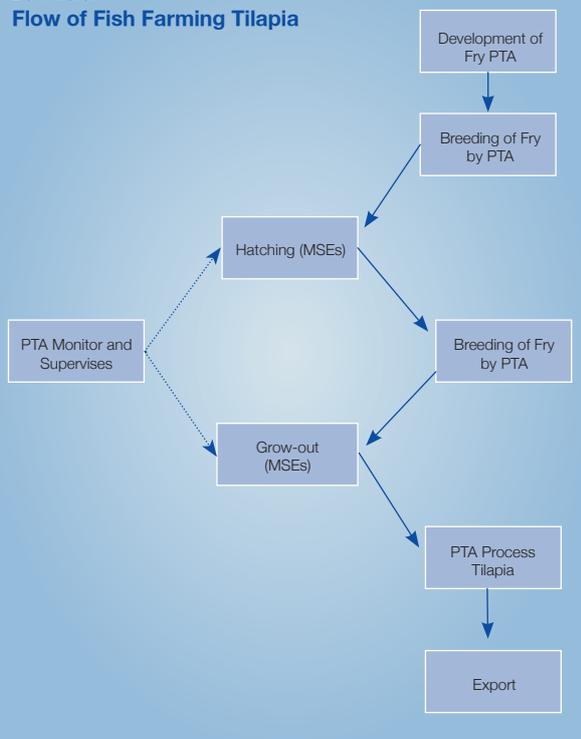
to packaging and storing of the final product. The main elements of quality assurance are traceability, good aquaculture practice, good manufacturing practice, HACCP, and hygiene. During the hatchery and farming steps, the fish are held traceable by recording the amount of fish and feed as well as some other parameters such as survival rate, delivery date, truck identification, source, genetic batch code, date of harvesting and age. Such data supports traceability in the entire value chain. The water of the hatcheries and farming lakes is regularly analyzed for pesticides and drugs.

The processing unit is audited and certified for HACCP, ISO 22000, and BRC Global Standard for Food Safety.<sup>42</sup> Large buyers visit PTA and perform second party audits on quality and corporate social responsibility. Hygiene in the production area is very strict. All personnel and visitors have to wear special clothes, which cover the entire body. Hands have to be washed regularly. PTA also has its own quality laboratory to analyze the quality of the product. Every four months comparison measurements are performed in collaboration with a laboratory of Sucofindo, and every six months the quality laboratory joins a proficiency test offered by other laboratories.

### Lessons Learned from PTA's Experience

The majority of small Indonesian farmers lack the technical capacity and know-how to meet the quality standards required by the European Union. One way to overcome this limitation is to establish capacity building, traceability and quality assurance measures under the direct responsibility of the processing company, which quite often is also the exporter. Processors need to identify their entire supply chain from hatcheries to farmers and middlemen. The establishment of a comprehensive recording system at all stages of the supply chain will ensure traceability. The competence of suppliers can be enhanced by guidance provided by the processor to improve the quality of the raw material provided. However, inspections of all entities in the supply chain and testing of samples will also be essential in controlling the supply chain and ensuring that the quality of materials supplied meets EU standards.

Box A.3.8:  
Flow of Fish Farming Tilapia



## A.4. Summary and Conclusions

In the last decade, the expansion of international trade in fishery products has exceeded the growth in total fish production in the world. This rapid expansion reflects the large increase in consumption of marine products in the EU and US markets as well as many other regions of the world like Asia. Among these fast-growing markets, the European Union is not only the world's largest market, but it is among the fastest growing markets for high-value imports like shrimp, tuna, bass and bream. The prospects for these markets continue to be favorable. Overall, the outlook for the global fishery market is robust, and our medium-term forecast is for EU imports to growth by 8 percent annually.

For Indonesia, the rapid expansion of the global fishery market and the European Union's strong market for high-value imports offers a number of excellent opportunities. In the first place, the industry has the chance to reverse the EU market share losses it suffered in the last decade because of external competition from large exporters like Ecuador and China, as well as the internal inertia in addressing EQI hindrances and trade impediment. Secondly, Indonesia's exports could be increased in terms of traditional exports and diversified into various other fish species and processed products that are in high demand abroad, for example, the main exports from aquaculture are shrimp (unfrozen, frozen and canned), crabs (unfrozen, frozen and canned), frog legs (fresh or chilled), ornamental fish (freshwater and mariculture), mollusks (scallops and snails), including capture products like tuna, jelly fish and coral fish as well as fish fat and oil and shrimp crackers. A third opportunity lies in aquaculture growth and development, where opportunities exist for community-based economic activities and rural development, along with greater foreign exchange earnings from exported aquaculture products. Given that two-thirds of Indonesia's territory consists of marine and inland waters with an abundance of natural resources, the development of aquaculture and sustainable capture fisheries has the potential to make the fishery industry leading engines of growth and development for the country.

The risks to programs aimed at promoting Indonesia's fishery exports are capacity and institutional constraints at the industry level and exchange rate policies at the macroeconomic level. There are two pressing problems that are internal to the industry. The first is capacity limitations of institutions providing EQI and the resulting limitations that these inadequacies create for fish and fishery exporters attempting to meet EU market access requirements. The issue has been made all the more important as large multinationals and some nationally large private retailers in Europe introducing their own standards for food safety and quality, environmental sustainability, and social consciousness. In large part, these initiatives reflect the growing concern of the general public and the retail sector in Europe about overexploitation of fish stocks, and the need for certification of aquaculture in general and of shrimp in particular. The second issue is the lack of adequate coordination and collaboration among central and provincial government agencies and the armed forces in regulating the industry and policing EEZ waters to prevent IUU fishing.

While the challenges to the fishery industry appear wide-ranging, the dominant impediments to greater EU market access are concentrated on the supply side. The exchange rate pass-through into the export price of Indonesia in the EU market has been large, but their impact on EU demand for Indonesian fish and fishery products has not significantly impacted trade. In fact, our estimates found that the real cross-rate between the euro and the rupiah has not been statistically significant in determining the EU demand for Indonesian fish and fishery products. Instead, non-price factors appear to have consistently undermined Indonesia's exports to the EU market. These non-price factors reflect (1) supply-chain weaknesses in both internal and external production processes affecting quality levels; (2) inadequate networking capabilities needed to ensure appropriate export services to foreign markets; (3) weak coordination between national, provincial and law enforcement authorities to control IUU fishing; and (4) EQI impediments to EU market access.

Specific findings on the supply side are as follows:

- *International Recognition of Laboratory Tests* – The Ministry of Marine Affairs and Fishery (MMAF) has been appointed by the European Union as the Competent Authority for fishery products in Indonesia. The MMAF carries out testing for fish diseases and health certificates

through a total of 49 MMAF test laboratories and 39 provincial laboratories. These provincial laboratories are not under MMAF's authority. Many of the laboratories have been accredited by Komite Akreditasi Nasional (KAN), but the scope of accreditation does not always include all parameters tested. Additionally, it is evident that a substantial number of these laboratories do not meet international standard requirements regarding quality management and competence. In order to ensure the status and function of the MMAF as the Competent Authority it must be ensured that all tests used for conformity assessment provide reliable test results that are internationally recognized. Exporters of fishery products rely on test and inspection facilities to ensure the smooth export of their products to the European Union and other markets.

- *Proficiency Testing and Certified Reference Material* – In chemical testing, Certified Reference Materials (CRM) and Proficiency Tests (PT) are used as tools to achieve traceability. At present the utilization of CRM is very limited in Indonesia due to the fact that most CRM are imported and therefore comparatively expensive. Without CRM traceability to national and international reference standard cannot be achieved.

Test results must be traceable and comparable to results provided by any other test laboratory domestically and internationally. It is standard international practice to conduct proficiency tests on selected parameters with a group of test laboratories that serve as indicators for traceability. The need to produce CRM and to conduct regular proficiency tests in Indonesia had already been identified in TSP I.

The Research Center for Chemistry (RCChem) in the Indonesian Institute of Science (LIPI) has recently been appointed as the national metrology institute for chemical reference materials and proficiency tests in Indonesia. RCChem is supported by Physikalische Technische Bundesanstalt (PTB) Germany. It has been decided that a number of laboratories will serve as producers of CRM and providers of PTs, of which the National Center of Quality Control (NCQC) of MMAF is one. At present NCQC does not have the capability to produce CRM and conduct PTs as required.

- *Implementation of GAP in Farms* – A considerable number of fish and shrimp farmers are not applying Good Aquaculture Practices (GAP). Antibiotics are still applied, which endangers export to the European Union and other export markets.
- *Implementation of GHP at Middlemen* – A considerable number of middlemen are not applying Good Handling Practices (GHP), resulting in problems especially with regard to hygiene and an assured cooling chain. Additionally, the common practice of unrecorded collection and mixing does not allow traceability of products.
- *Quality in Processing Companies* – The final report of a mission carried out to evaluate the control systems in place governing the production of fishery products intended for export to the European Union (2009) states that several processing companies have shortcomings with regard to HACCP and GMP. It is also evident that most processing companies do not conduct audits of their suppliers as required.
- *Quality Management System ISO 9001 in MMAF* – The MMAF recently changed its structural organization with the objective of improving and streamlining its operations. Due to this restructuring, the existing quality management system (QMS) in MMAF does not suit the new organization and its operations.
- *Management Processes in MMAF* – It has been observed that the MMAF presently has shortcomings in coordination and control of the provincial authorities in charge for NRCP, inspection control (vessels, farmers, middlemen, and processors), GAP certification, and medicine and feed control. Required recording of inspection results is not ensured.
- *Quality Management System ISO 17020 in Provincial Authorities* – An analysis was recently conducted of the control systems governing the production of Indonesian fishery products for

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export to the European Union.<sup>43</sup> The findings showed that the quality management system of the provincial authorities is not functioning properly and the competence of the used inspectors is insufficient.

- *Information Channels* - There is a large amount of actors involved in the value chain of fishery products consisting of the MMAF, provincial authorities, test laboratories, fish processors and their suppliers. It is currently not ensured that all involved parties are swiftly informed on new or revised EU regulations and on reports of the rapid alert system (RAS) applicable for their operations.

In an effort to address these issues, interventions could be integrated into the Government's strategy and action plan for the industry, along with industry-based EQI activities supported by TSP II or other donor interventions. They would cover specific actions in the following areas: (1) planning and developing the fishery industry; (2) promoting the fish processing industry; (3) strengthening quality control laboratory facilities; (4) combating IUU fishing; (5) lowering costs of shrimp production; (6) developing a stronger image, market information and export promotion strategy, (7) and overcoming EQI impediments to market access.

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43 European Commission, "Fisheries Partnership Agreement FPA 2006/20". Annex 5: Indonesia IUU/2008.



## B. AGRI-FOODS



## B.0. Executive Summary

In Europe, processed foods are becoming an increasingly important part of consumer expenditures as people look for more convenient ways to store and prepare food. Consumers spend 12 percent of their income on food consumption and domestic production supplies about 90 percent of the EU market. The main sub-sectors are processed fruits and vegetables, cereal-based products, processed meats and dairy products. The European Union's fruit subsector is the most dependent on foreign supplies (about one-fourth of domestic utilization). For that reason, imports of fruits tend to predominate in EU imports of processed agri-foods. Processed meat imports into the European Union have grown by an average annual rate of 13 percent a year, outpacing all other food groups by a significant margin. Nevertheless, Indonesia does not supply any meat products to the European Union since it is a large net-importer of those types of products.

In Indonesia the processed foods industry has steadily increased its contribution to the total output value of the Indonesian economy. Its impact on the growth and employment of other sectors has been large because of upstream and downstream linkages to primary sector and input activities and service-related industries. The commodity composition of exports is fairly evenly distributed among cereal, flour and starch preparations; vegetable and fruit preparations; and other types of food preparations. In contrast, the geographic composition of exports is highly concentrated in the ASEAN regional market. The share of exports destined for countries in Europe, the United States and Japan is small compared with the size and agri-food absorption of those markets. The European Union, for example is the world's largest market for these types of products, and Japan is the world's largest net importer of food products.

The challenges to realizing Indonesia's export potential are concentrated in marketing difficulties and supply-side constraints of the existing agri-foods industry. Indonesia's production costs and exchange rate pass-through into export prices have been low, which has reflected favorably on the industry's international price competitiveness. Non-price factors have, however, undermined Indonesia's exports outside the ASEAN region to markets like that of the European Union. Among the most significant factors are (i) a lack of understanding of consumer tastes and preferences, and their distinction from that of Asian customers; (ii) lacking overseas networks with global supermarkets; (iii) difficulties in meeting health controls and packaging and labeling requirements; and (iv) poor

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infrastructure and high logistics costs. Overcoming these challenges will require concerted actions in several areas. The present document suggests that efforts to be oriented to (a) develop an industry strategy for extra-regional markets; (b) promote unique Indonesian products like tropical fruits and vegetable juices; (c) encourage cluster and networking development with supermarket chains; (d) MSE and SME Support and Development;; and (e) development of Food laboratories capacity.

## B. Introduction

### B.1.1. Objective and Coverage

The present annex on agri-foods is one of five industry-specific annexes prepared for the study on *Indonesia's Trade Access to the European Union: Opportunities and Challenges*. It provides a self-contained analysis of the agri-food industry and its export potential in the EU market. It has three specific objectives. First, it seeks to identify Indonesia's export opportunities in the EU agri-food market, based on the industry's competitiveness and growth prospects. Secondly, it identifies challenges to the realization of Indonesia's export potential in terms of EU market entry requirements, export quality infrastructure (EQI), the conduciveness of trade policies and regulations, and support being provided to the industry. Finally, it offers recommendations on actions that support the achievement of the industry's export potential to the EU market.

This report consists of the following parts:

- *Chapter 1* presents an overview of the agri-food industry in terms of its importance to the Indonesian economy and the pattern of its export development. It also covers the strengths, opportunities, weaknesses and threats (SWOT) facing the industry's development, especially as it relates to Indonesia's exports to the EU market.
- *Chapter 2* analyzes the European Union's market for agri-food products and Indonesia's competitiveness in that market. It begins by examining the market in the European Union and assessing its growth prospects. It then examines the major factors determining Indonesia's competitiveness relative to other developing country exporters to the EU market. The chapter ends with an analysis of the relative importance of price and non-price factors in explaining Indonesia's changing market shares in the EU market, and how remedial actions addressing non-price factors could impact on Indonesia's export prospects.
- *Chapter 3* covers EU market access requirements and existing conditions in the Indonesian agri-food industry. It examines internal and external constraints along the value chain, especially for small and medium size enterprises (SMEs), the existing EQI system in the industry and support services being offered to enterprises, and trade policies and regulations affecting the industry.
- *Chapter 4* presents a summary of the findings on the Indonesian agri-food industry, and it draws on this information to recommend specific actions needed to fully realize the country's export potential in the EU market.

### B.1.2. Importance of the Industry

**Industry Coverage** – In agri-foods and beverages, processed products derive from meats, grains and fruits and vegetables.<sup>44</sup> The food industry transforms and adds value to these raw ingredients to produce foods for animal or human consumption.<sup>45</sup> The business network supporting the agri-food industry covers variety of enterprises that deal with every aspect of the food production, sale and delivery system. They include farmers and other raw material and intermediate suppliers, producers, transporters, and distributors to the local, regional and international markets.

**Importance to Indonesia** – The processed foods industry offers an opportunity for Indonesian producers to move into high value-adding activities. In the last decade the industry has steadily increased its contribution to the total output value of the Indonesian economy, notwithstanding recent economy-wide contractions (Figure B1.1). Its share of the economy's total value added rose from 13 percent to more than 16 percent during the decade. Moreover, its impact on the growth and employment of other sectors has been large because of upstream and downstream linkages

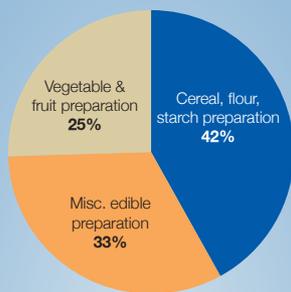
44 Agri-food trade is composed of the following four Harmonized System (HS) chapters: HS 19: preparations of cereals, flour, starch or milk; HS 20: preparations of vegetables, fruit, nuts or other parts of plants; HS 21: miscellaneous edible preparations; and part of HS section 16 covering HS 1601 (sausages, similar products of meat), and HS 1602 (other prepared or preserved meat).

45 Throughout this report, the term industry and sub-sector are used interchangeably and both refer to a subset of activities of the sector to which the industry belongs.

to primary sector and input activities and service-related industries. A multiplier effect occurs because the expansion of these other sectors generates additional revenue for the public and private sectors, which in turn leads to additional demand for food and beverage products. The resulting expansion in the industry needed to meet the additional demand has created feed-through effects in the economy, and additional rounds of demand-generated expansion, well beyond the original increase in the demand for foods and beverages. These effects are particularly important for small and medium size enterprises (SMEs), which tend to predominate in upstream activities.

Figure B1.2. Indonesia's Main Types of Agri-Food Exports, 2009

Composition of Indonesia's Agri-Food Exports

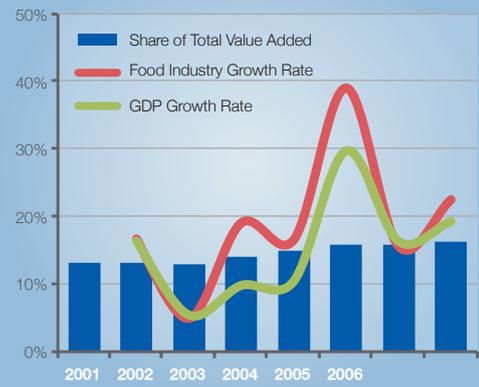


Major Agri-Food Export Products

HS Code	Description	US\$ Million	% of Total
1905	Bread, pastry	136.2	18.6%
2008	Fruit preserved	130.0	17.7%
1902	Pasta	120.3	16.4%
2101	Extracts coffee, tea	97.2	13.3%
2106	Other food preparations	77.1	10.5%
2103	Sauces	60.3	8.2%
2009	Fruit juice	28.8	3.9%
1901	Malt extracts	27.1	3.7%
1904	Foods prep by swell cereal	22.5	3.1%
2003	Mushrooms prepared	19.5	2.7%
	All Agri-Foods	732.3	100.0%

Source: UN, Comtrade database.

Figure B1.1. Value Added of Agri-Foods Industry



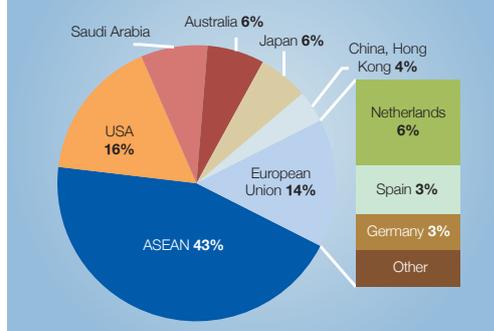
Source: Derived from data from Badan Pusat Statistik. Available: <http://dds.bps.go.id>

**Types of Exports** – Indonesia's exports are fairly evenly distributed among its three major types of agri-foods: (i) cereal, flour and starch preparations (42% of all agri-foods); (ii) vegetable and fruit preparations (25%); and (iii) other miscellaneous preparations (33%). Exports of meat preparations are minimal (0.01%). Among the country's major export products are bread and pastry (18% of all agri-foods); fruit preserves (18%); pastas (16%); coffee and tea extract (13%); and other food preparations (11%). Fruit juices account for 4 percent of all agri-food exports. These and other export products are detailed in Figure B1.2.

**Major Export Markets** – Agri-food exports of Indonesia are highly concentrated in the ASEAN regional market (Figure 1.3). In 2009, 43 percent of this industry's exports were directed at neighboring countries, especially the Philippines, Malaysia, Singapore, Vietnam and Thailand. The EU and U.S. markets each absorbed about 15 percent of Indonesia's agri-food exports. The share of exports destined for countries in Europe, the United States and Japan is small compared with the size and agri-food absorption of those markets. The European Union, for example is the world's largest market for these types of products, and Japan is the world's largest net importer of food products.

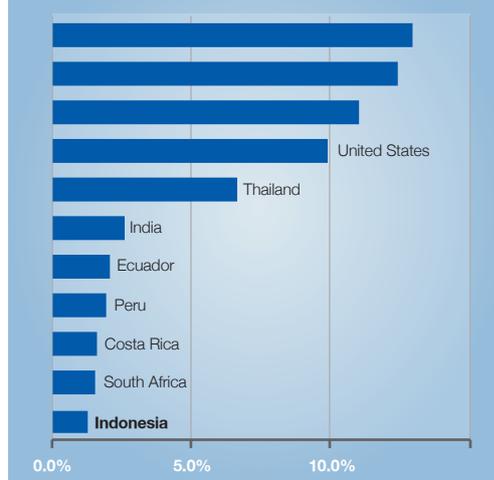
**Major Competitors in EU Market** – Five countries dominate third country competition in the EU market for agri-foods: Brazil, Turkey, China, United States and Thailand. Together these countries account for one-half of the European Union's imports of food products from

Figure B 1.3. Distribution of Indonesian Agri-Food Exports by Major Market in 2009



Source: United Nations, COMTRADE database.

Figure B 1.4. Top Agri-Food Exporters to EU Market in 2009



Source: European Commission, Eurostat database.

Table B 1.1. Intra-Industry (two-way) Agri-Foods Trade between Indonesia and the European Union in 2009

HS	Description	IIT
200190	Vegetables and fruit preserved by vinegar or acetic acid	0.91
200870	Peaches prepared or preserved	0.91
200899	Fruit and other edible parts of plants, prepared or preserved	0.83
200600	Vegetables and fruit preserved by sugar	0.77
190410	Prepared foods obtained by roasting cereals or cereal products	0.77
210390	Preparations for sauces and prepared sauces	0.60
190120	Mixes and doughs of flour	0.57
190532	Waffles and wafers	0.44
200941	Pineapple juice, unfermented	0.43
210690	Food preparations, n.e.s.	0.41
200919	Orange juice, unfermented	0.39
200892	Mixtures of fruits, nuts and other edible parts of plants, preserved	0.33
210111	Extracts, essences and concentrates, of coffee	0.32
190531	Sweet biscuits	0.31
	All 53 Agri-Food Products	0.10

Source: Derived from data in UN, Comtrade database.

Note: The IIT index varies between 0 (complete inter-industry trade) and 1 (complete intra-industry trade). See main text for calculation method.

non-EU suppliers. As a country having a similar profile to that of Indonesia, Thailand has been highly successful in expanding its exports to the EU market because of its good infrastructure, favorable government policies towards foreign investment, tax incentives, and successful promotion of SME food processors.<sup>46</sup> Indonesia's share of the EU market is modest and there is considerable room for growth. EU demand for quality agri-food products is growing rapidly, and sourcing from non-EU producers is outpacing intra-EU sourcing. An important growth area is organic food ingredients and food products. Europe has been unable to supply its population in this sub-sector. China and Brazil are gaining market shares in the organic market, offering products at lower prices and reasonable quality. Direct exports of organic food ingredients to end customers are possible through specialized companies and supermarket chains.

**Two-Way Trade between Indonesia and the European Union** – Since Europe and Indonesia export large quantities of agri-foods to one another, it is useful to ask whether trade occurs in the same types of products. If trade takes place in different types of products, or so-called inter-industry trade, it means that the trading partners are specializing in the types of products in which they have

46 See Royal Danish Embassy, "Thailand Food Industry Outlook". Bangkok, June 2009. Available: [http://www.ambbangkok.um.dk/NR/rdonlyres/E45CC3B4-2457-4B3E-B91A-0971294DB2A4/0/ThailandFoodIndustryOutlook\\_FINAL\\_June09.pdf](http://www.ambbangkok.um.dk/NR/rdonlyres/E45CC3B4-2457-4B3E-B91A-0971294DB2A4/0/ThailandFoodIndustryOutlook_FINAL_June09.pdf)

a comparative advantage, and that changes in specialization within one of the countries will involve transitional adjustment costs to the industry. In contrast, if trade takes place in the same types of products, or so-called intra-industry trade (IIT), there will be less adjustment difficulties because of relatively low labor market adjustment needs.<sup>47</sup> With increased two-way trade between Indonesia and the European Union, for example, resources within the agri-foods industry could move within the industry rather than being displaced by trade.

Calculations of the extent of intra-industry trade in agri-foods between Indonesia and the European Union are shown in Table B1.1. These calculations of intra-industry trade (IIT) are based on narrowly defined goods at the 6-digit level of the Harmonized System (HS) for classifying trade.<sup>48</sup> An index number near 0 indicates that there is inter-industry trade between the two countries, whereas an index near 1 means that intra-industry trade is taking place. In the case of Indonesia-EU trade in agri-foods, the calculations show that, on the whole, inter-industry trade has dominated. These results imply that further opening of trade between Indonesia and the European Union will involve transitional adjustment costs to Indonesia. These transitional adjustments refer to possible movements of labor and capital from one type of agri-foods activity within the industry to another type of activity. In the case of labor, such adjustments often tend to be moderate and can be absorbed by changes in employment that occur naturally in an industrial activity as a result of turnover rates from labor mobility within and across industries.<sup>49</sup> At the individual product level, however, there are 14 products where two-way trade is taking place between Indonesia and the European Union. In those cases, the companies producing those particular products will have a small labor adjustment costs and little need for restructuring.

**Fruit and Vegetable Juices** – The fruit and vegetable juice subsector has one of the fastest growing markets in the European Union, and Indonesia has an abundance of tropical fruits and vegetables that places it in a privileged position. At present, Indonesia's exports are small compared with its potential. As a consequence, the agri-foods industry could exploit the opportunities offered by the EU market by focusing on product developments that address the growing needs of the European consumers. In terms of the aforementioned inter-industry trade potential, an expansion in these types of exports would draw capital and labor to the production of tropical fruits and vegetable juices, and possibly shift that labor and capital from import-substituting industries to activities directed to export markets in the European Union.

### B.1.3. SWOT Analysis

Box B1.1 summarizes the strengths, weaknesses, opportunities and threats (SWOT) of the industry. The focus of the analysis is areas where there is a need for change to ensure that Indonesia realizes its export opportunities in the EU agri-food market. Key issues for the industry are as follows:

- Opportunity to expand and diversify markets from the currently narrow focus on the ASEAN market.
- Organic food ingredients and food products are one of the fastest growing segments of the food EU market.
- Europe cannot supply its population in organic food products and needs to import large quantities from third countries.
- In Indonesia, SME producers have not implemented GMP and are therefore not ready for export.
- Laboratories BBIA and BPBMEI are unable to perform all testing as required by industry

47 This phenomenon is called the smooth-adjustment hypothesis and is widely used to assess the predisposition of countries to benefit from preferential trading arrangements. See Horácio Faustino & Nuno Leitão, "Intra-industry trade and labor costs: the smooth adjustment hypothesis," Working Papers 2009/17, Department of Economics at the School of Economics and Management (ISEG), Technical University of Lisbon, 2009.

48 Calculated for each product  $j$  as follows:  $IIT_j = \frac{|X_j - M_j|}{X_j + M_j}$ , and aggregated using the formula  $\frac{(X_j + M_j)}{(X + M)}$ .

49 For illustration of the magnitude of labor mobility following increased trade induced by the US-Colombia FTA, see Montague Lord, "Partial-Equilibrium and Industry-Shift Analysis of the U.S.-Colombia FTA". Available: [http://www.montaguelord.com/index.php?option=com\\_docman&task=cat\\_view&gid=25&dir=DESC&order=date&limit=5&limitstart=45&mo=06&yr=2010](http://www.montaguelord.com/index.php?option=com_docman&task=cat_view&gid=25&dir=DESC&order=date&limit=5&limitstart=45&mo=06&yr=2010)

Box B1.1. Strengths, Weaknesses, Opportunities and Threats (SWOT) of Indonesian Agri-Foods industry

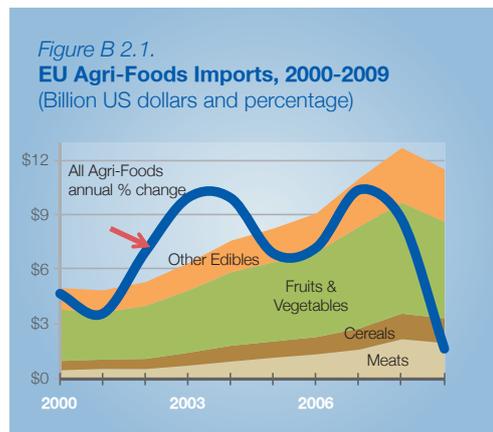
	Supply Chain Structure and Functioning	EU Market	MSEs and SMEs	Institutional Framework
<b>Strengths</b>	<ul style="list-style-type: none"> <li>Various tropical fruits are grown in Indonesia</li> </ul>	<ul style="list-style-type: none"> <li>EU demand for quality agri-food products is growing rapidly, and sourcing from non-EU producers is outpacing intra-EU sourcing.</li> <li>Europe cannot supply its population in organic food products and needs to import large quantities from third countries.</li> </ul>	<ul style="list-style-type: none"> <li>Fruit juice producers for local market are available</li> </ul>	<ul style="list-style-type: none"> <li>Association GAPMMI provides frequent support for SMEs</li> <li>Ministry of Agriculture is implementing several programmes to support SMEs</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>It appears that Indonesia does not have sufficient supply of fruits for export at present</li> </ul>	<ul style="list-style-type: none"> <li>Large competitions from Brazil, Turkey, China, United States and Thailand, which together account for one-half of EU agri-food imports.</li> </ul>	<ul style="list-style-type: none"> <li>Fruits are produced mostly by MSEs which are not able to supply fruit as required by large fruit juice producers.</li> <li>SME producers have not implemented GMP and are not ready for export</li> <li>SMEs do not perform required testing of finished products regularly</li> </ul>	<ul style="list-style-type: none"> <li>Laboratories BBIA and BPBMEI are not able to perform all testing as required by industry</li> <li>Quality assurance in laboratories still lacks Proficiency Tests and Certified Reference Material</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>Opportunity to impact growth and employment of other sectors because of upstream and downstream linkages.</li> <li>Building of sustainable farmer groups and improved handling practices for harvested fruit can provide fruit juice producers with continuous supply</li> <li>Opportunity to add value to agricultural products by processing them for animal or human consumption</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity to expand and diversify markets from the currently narrow focus on the ASEAN market.</li> <li>Direct exports of organic food ingredients to end customers are possible through specialized companies and supermarket chains.</li> <li>Organic food ingredients and food products are one of the fastest growing segment of the food EU market.</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of GMP and HACCP in SMEs will improve potential for export</li> <li>Fruit juice producers for available for local market could be increased for export market.</li> </ul>	<ul style="list-style-type: none"> <li>Laboratories of BPOM and BBIA can serve as reference laboratory for all food laboratories and could provide PT and CRM to ensure traceability of test results</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>Without large fruit farms or functioning farmer groups Indonesia will not be able to increase its fruit juice export</li> </ul>	<ul style="list-style-type: none"> <li>Possible transitional labor market disruptions from opening trade with European Union due to restructuring and associated adjustment costs.</li> </ul>		<ul style="list-style-type: none"> <li>Laboratory results of Indonesian laboratories will only be internationally recognized if traceability is achieved</li> </ul>

## B.2. Indonesia's Export Competitiveness in the EU Market

### B.2.1. EU Market Development and Prospects

The European Union is a net importer of raw agricultural products and a net exporter of processed products. Processed foods are increasing their participation of overall consumer expenditures in the European Union as people look for more convenient ways to store and prepare food. Key product groups include processed dairy products; frozen fruit and vegetables; confectionery industry products; various prepared foods and sauces, including pasta, ice-creams and soups; and processed starch products. Despite high tariffs and relatively strict requirements on imports, EU imports have expanded by an average of 10 percent annually in the last ten years. Over 70 percent of agricultural goods produced in the European Union are transformed into food industry products. Consumers spend 12 percent of their income on food consumption and domestic production supplies about 90 percent of the EU market. The largest sub-sectors are meat, dairy, cereal-based industries and fruit and vegetable juices. The fruit subsector is the most dependent on foreign supplies (about one-fourth of domestic utilization).<sup>50</sup> For that reason, imports of fruits tend to predominate in EU imports of processed agri-foods (Figure B2.1 and Table B2.1).

The European Union is by far the world largest trader of meats, accounting for over 50 percent of total world exports and imports respectively.<sup>51</sup> International trade is largely in the form of frozen, cooked or further processed products. The value of processed meat imports into the European Union has grown by an average annual rate of 13 percent a year, outpacing all other food groups by a significant margin. Nevertheless, Indonesia does not supply any meat products to the European Union since it is a large net-importer of those types of products. Imports of meats are 13 times larger than exports. Over the last decade this trade gap has grown rapidly, indicating that Indonesia is not likely to become a significant exporter of meats to the EU market.



Source: European Commission, Eurostat database.

The average import growth rate of cereals, flour and starches has been 7.6 percent, and that of fruits and vegetables under 4 percent. Less than 5 percent of total world output of fruit and vegetables is traded internationally since they are generally consumed fresh. However, in the higher income countries of Europe, more than half of all consumption is in the form of processed fruit and vegetables, including juices.<sup>52</sup>

Among individual product categories, fruit and vegetable juices are the largest processed agri-food imported into the European Union. It alone accounts for over 18 percent of all agri-food imports. Prepared or preserved meats are the second largest imported product group, representing 17 percent of all agri-food imports. Other major imports are fruits, nuts, and edible plant parts (14 percent), prepared vegetables (13 percent), and concentrates of coffee and tea (7 percent). Bread, and pastries and sauces, condiments and seasonings each accounts for 5 percent of total agri-food imports into the European Union.

50 Based on UN Food and Agriculture Organization (FAO) FAOSTAT database for the latest available year (2007) from commodity balances.

51 Based on UN Food and Agriculture Organization (FAO) FAOSTAT database TRADEstat. Available: <http://faostat.fao.org/site/535/DesktopDefault.aspx?PageID=535#ancor>

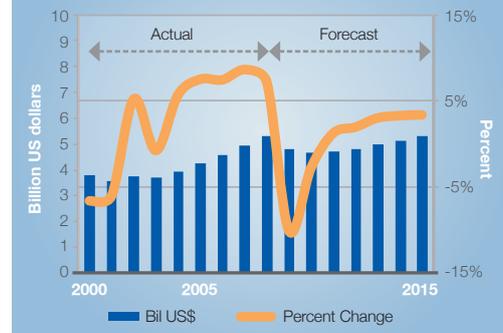
52 J.H.M. Wijnands, B.M.J. van der Meulen, and K.J. Poppe (eds), "Competitiveness of the European Food Industry: An Economic and Legal Assessment". European Commission, 2007. According to this study, producers of processed fruits and vegetables, particularly in the canning industry, are encountering stagnating consumption in high income regions like Western Europe. Under this situation, processors and other chain suppliers have attempted to exploit the increasing consumer preference for freshly processed fruits and vegetables like pre-cut, cleaned, pre-packed or as a ready-to-eat meal. Frozen products appeal to consumers as their nutritional values are almost the same as fresh vegetables and they can be stored for longer periods. Processed vegetables, fresh, canned or frozen, are also widely used in the food services.

**Table B 2.1. Top Agri-Food Imports of European Union in 2009** (Billion US dollars)

HS	Products	2009
2009	Fruit and vegetable juices	\$2.1
1602	Prepared or preserved meat	\$2.0
2008	Fruit, nut, edible plant parts	\$1.6
2106	Other Food preparations	\$1.5
2005	Vegetables, prepared/preserved	\$0.8
2101	Concentrates of tea, coffee, mate	\$0.6
1905	Baked bread, pastry	\$0.6
2103	Sauce, condiments, seasoning	\$0.5
1902	Pasta, couscous	\$0.4
1901	Malt extract, flourpreparations	\$0.4
2001	Vegetables & fruit in vinegar	\$0.3
2002	Tomatoes prepared	\$0.3
2104	Soup preparations	\$0.1
2102	Yeast, baking powders	\$0.1
	Sub-Total	\$11.2
	All Agri-Foods	\$11.5

Source: United Nations, COMTRADE database.

**Figure B 2.2. EU Agri-Food Imports, actual 2000-2009 and forecast 2010-2015**



Source: Projections by the Study Team based on econometric estimates and assumptions about economic activity from IMF, World Economic Outlook database.

Among EU member countries, the largest importers of processed agri-foods are Netherlands (18 percent of all imports), United Kingdom (18 percent), Germany (17 percent), France (10 percent), Italy (8 percent), Spain (7 percent) and Belgium (7 percent). Together these seven countries account for 77 percent of all EU imports of processed agri-foods.

The EU demand for agri-food imports has been strong, particularly in its response to changes in consumer incomes. Our estimates show that a one percent increase in real GDP of the EU market as a whole has produced a 2.1 percent expansion in agri-food imports. Figure 2.2 provides a visual representation of the forecast of total EU agri-food imports through 2015. The forecasts are based on assumptions about real GDP growth, agri-food prices and exchange rates are taken from the International Monetary Fund's biannual projections.<sup>53</sup> They forecast GDP to grow by 1 percent in real terms in 2010 and by another 1.3 percent in 2011. After 2011 a moderate 2 percent annual real GDP growth is assumed. We assume unchanged constant euro prices for the products and an average exchange rate of US\$1.3 per euro over the medium term. Based on these projections for EU economic activity, demand for agri-food imports is projected to grow by 1-2 percent in 2011-2012, and 3.5 percent thereafter.

## B.2.2. Indonesia's Export Competitiveness

Indonesia's competitiveness in the EU agri-foods market, like in other foreign markets, is largely determined by four interrelated conditions: (i) export prices relative to those of competing suppliers to the market; (ii) the magnitude and type of accessible demand; (iii) accessibility and reliability of supporting industries; and (iv) firm strategy and rivalry that affect how various enterprises conduct business.<sup>54</sup>

*Export Prices:* Foreign demand for Indonesia's agri-food exports is determined by the rupiah-denominated price of exports. From the point of view of European buyers, that price is denominated in euros. The price differential between Indonesia's exports and those of other competitors to the EU market therefore depends on the product price in each supplying country and the cross exchange rate between the rupiah and the euro, adjusted for inflation in each country. The demand for agri-

53 See International Monetary Fund, "World Economic Outlook Update". July 2010. Available: <http://www.imf.org/external/pubs/ft/weo/2010/update/02/index.htm>.

54 These conditions are often referred to as the Competitiveness Diamond developed by Michael Porter, "Competitive Advantage of Nations". Free Press, 1998.

## Box B 2.1.

## Competitive Analysis of Indonesian Agri-Foods Industry

	Strengths	Weaknesses
<b>Pricing Conditions</b>	<ul style="list-style-type: none"> <li>Proximity of upstream activities.</li> <li>Abundance of low-cost labor for basic agricultural and processing activities.</li> <li>Cost-reducing firm strategies enhance price-competitiveness.</li> <li>Increased pre-export processing.</li> </ul>	<ul style="list-style-type: none"> <li>Real effective devaluations by competing suppliers to EU market.</li> <li>High logistics costs, including import charges on factor inputs.</li> <li>Cost of meeting EU health controls and food labeling requirements.</li> </ul>
<b>Demand Conditions</b>	<ul style="list-style-type: none"> <li>Increasing use of EU-consistent health standards.</li> <li>Experience in marketing and distribution in ASEAN regional market</li> </ul>	<ul style="list-style-type: none"> <li>Inconsistent quality standards for export market.</li> <li>Regulations difficult to access for SMEs.</li> <li>EU consumer tastes and preferences differ greatly from those of ASEAN consumers.</li> <li>Lack cutting edge knowhow or sophistication for export markets.</li> </ul>
<b>Industry Networking</b>	<ul style="list-style-type: none"> <li>Agricultural and agri-industry geographic concentration.</li> <li>Strong supporting relationships and subcontracting in industrial complexes</li> </ul>	<ul style="list-style-type: none"> <li>Lacking cluster development and collaboration with overseas networks.</li> <li>Weak linkages to trucking, logistics, warehousing, software, banking and finance.</li> </ul>
<b>Conditions for Conducting Business</b>	<ul style="list-style-type: none"> <li>Strong competitive environment</li> <li>Knowledge about requirements in environmental legislation.</li> <li>Clusters disseminate information about business regulations.</li> </ul>	<ul style="list-style-type: none"> <li>Price-based competition for similar products.</li> <li>Lacking attention to design and manufacturing processes.</li> <li>Weak product design feedback loop.</li> </ul>

Source: Based on Competitive Diamond analysis (see Michael Porter, "Competitive Advantage of Nations". Free Press, 1998).

food exports of Indonesia is accordingly determined by both the real cross-rate of Indonesia's domestic currency relative to that of the European Union, and the foreign rupiah-denominated export price.<sup>55</sup> Macroeconomic conditions determine the real cross-rate, while industry-specific conditions in Indonesia determine the rupiah-denominated price of agri-food products.

For the first of these determinants, Figure B2.3 shows the relation between changes in the real cross-rate in Indonesia and other major suppliers to the EU market and changes in their shares of the agri-food market. Notwithstanding the rise in the real cross rates of many competing suppliers to the EU market, Indonesia has managed to increase its share of the agri-foods market by a modest 1 percent during the last decade. China's undervalued currency helped its agri-food exporters to significantly improve their position in the EU market, mainly at the expense of Brazil, whose exchange rate strengthened during this period.

The industry-specific conditions affecting the rupiah-denominated price of agri-food products are largely associated with labor and infrastructure-related costs. The cost structure of the agri-foods industry is reflected in the nominal unit price of product exports in the industry's relatively competitive global market.<sup>56</sup> Table 2.2 shows the average export price of Indonesia and other foreign suppliers to the EU markets. These price variations could reflect differences in the product composition of the two groups, as well as quality differences. The most important measure of competitiveness is the impact that those prices have had on the demand for Indonesia's exports, that is, whether changes

55 The real bilateral exchange rate takes the relative price of tradable and non-tradable products as an indicator of a country's competitiveness level in the foreign trade. The rationale behind this definition is that the cost differential between trading countries are closely related with the relative price structures in their economies. Mathematically, the real exchange rate,  $r$ , is defined as  $r = P_t/P_n = eP^*/P_n$ , where  $P_t$  and  $P_n$  represent the price of tradable and non-tradable products,  $e$  is the nominal exchange rate, and  $P^*$  is the international price of tradables.

56 In a competitive market, the firm or industry as a whole will select an output level that equates its marginal cost with its export price.

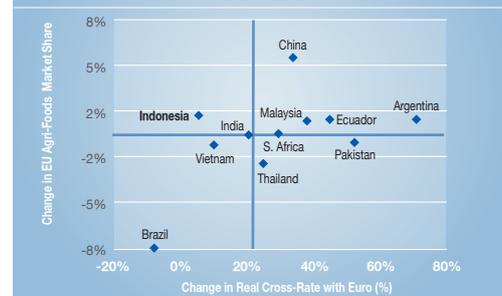
**Table B 2.2. Export c.i.f. Price of Agri-Foods of Top Developing Country Suppliers to EU Market, 1999-2009**

Brazil	63
Vietnam	77
Indonesia	77
China	79
Pakistan	82
Thailand	83
India	85
Malaysia	90
South Africa	100
Argentina	137

Source: derived from data in Eurostat database.  
Note: Average of all types of exports.

**Figure B 2.3.**

**Changes in Real Cross-Rates with Euro & Share of EU Agri-Foods Market, 1999-2009**



Source: Calculated from IMF, WEO database, and EU, Eurostats.

in the price of Indonesia's exports have affected the EU demand for Indonesian exports relative to that of competing suppliers to the market. This issue is examined in the next section of this chapter.

*Demand Conditions:* Indonesia's agri-foods industry is, for the most part, directed to the domestic and ASEAN markets. Consumer tastes and preferences in those markets are vastly different from those in the European Union and the United States. Moreover, ASEAN member country regulations governing marketing, health and packaging are not as strict as those in the European Union and the United States. Despite competitive prices, lack of experience in extra-regional markets greatly reduces the overall competitiveness of Indonesian firms relative to major suppliers of agri-foods from the United States, China, Brazil, and South Africa.

*Industry Networking:* Indonesian producers lack overseas networking capabilities with distributors in EU and US markets. Supermarkets now dominate food sales in developed markets and are rapidly expanding their global presence. At the same time, international mergers and acquisitions and aggressive pricing strategies have concentrated market power in the hands of a few major retailers. Although global sourcing has created new opportunities for the Indonesian agri-foods industry, only large companies are normally able to take advantage of them.

*Conditions for Conducting Business:* Access to the EU agri-foods market is subject to stringent food safety and agricultural health standards of the Economic Commission and EU member country governments. There is also a trend for supermarkets to go beyond mandatory regulations to begin implementing their own private standards.<sup>57</sup> In an effort to harmonize supply chain standards worldwide for good agricultural practice (GAP), several European supermarket chains and their major suppliers have sought to bring conformity to different retailers' supplier standards. The resulting GLOBALGAP (formerly EurepGAP) is now the world's most widely implemented farm certification scheme, and most European companies for agri-food products now demand evidence of EurepGAP certification as a prerequisite for doing business.<sup>58</sup> The standard was developed using the Hazard Analysis and Critical Control Points (HACCP) guidelines published by the United Nations Food and Agriculture Organization (FAO), and is governed according to the ISO Guide 65 for certifications schemes. These standards make it difficult for SMEs to compete because of the time and cost associated with obtaining the required audits. Without the certification, it is impossible to sell to supermarkets.

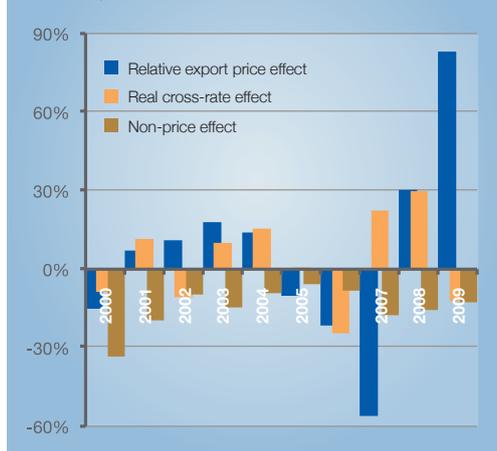
57 Oli Brown, "Supermarket Buying Power, Global Commodity Chains and Smallholder Farmers in the Developing World". Occasional Paper, UNDP Human Development Report, 2005.

58 For details, see the GLOBALG.A.P web site at <http://www.globalgap.net>.

### B.2.3. Opportunities to Regain Market Shares

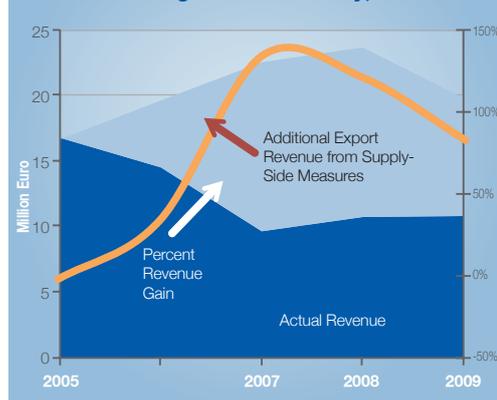
Indonesia's share of the agri-foods market in the European Union has fallen over the last decade. Our estimates of the export relationship for the Indonesian agri-food industry suggest that those losses were almost wholly due to non-price factors associated with supply impediments like EQI limitations (Figure B2.4).<sup>59</sup> Export price movements had a favorable impact on market shares, with the exception of 2007 and, to a lesser extent, at the beginning and end of the decade. On average, non-price factors reduced Indonesia's market share by 15 percent. In contrast, the industry's competitive export prices helped to improve market shares by an average of 6 percent during the period, while the exchange rate pass-through on prices contributed another 3 percent to the industry's penetration into the EU market. The net gains, however, were not enough to offset the negative effects from EQI and other supply-related factors affecting the industry's performance.

Figure B 2.4. Price and Non-Price Factors on Indonesia's Shares of EU Agri-Foods Market, 2000-2009



Source: Derived from Study team estimates.

Figure B 2.5. Actual and Potential Export Earnings from Remedial Supply-Side Measures in Agri-Foods Industry, 2005-2009



Source: Estimated from Study team calculations

To the extent that Indonesia could have overcome its supply impediments on exports and maintained its agri-foods market share at the beginning of the decade, foreign exchange revenue from the industry would have been two-thirds higher than actual revenue for the industry (Figure B2.5). Overcoming EQI obstacles will require considerable effort on the part of the industry. However, the benefits to the industry are considerable, as are the economy-wide impact that would be produced from additional employment and expenditures on downstream and supporting industries. Without those EQI constraints and assuming that all other price and non-price factors were the same as other suppliers, Indonesia's exports would increase by the same proportion as those of EU imports for fisheries, that is, the same as our forecast of 8 percent annual growth of EU fishery imports from third countries.

<sup>59</sup> Non-price factors (including but not exclusively EQI) are equal to the changes in exports not explained by income and price changes. That's the way it was calculated and that's normal the way that the intercept is interpreted. However, in our case, we broke down the non-price factors further by including a trend variable to capture secular changes that could or could not be associated with EQI. Because of the attribution uncertainty, it was decided not to report the secular (trending) estimates.

## B.3 Challenges for Realizing Indonesia's Exports Potential

### B.3.1. EU Market Access

The key elements of the regulatory environment for the processed agri-foods industry are as follows:

- **Common Agricultural Policy:** The Common Agricultural Policy (CAP) protects agriculture throughout the European Union by controlling prices and levels of production and by subsidizing farmers. About 40 percent of the EC budget is directed to this support scheme under the existing farm policy that extends to 2013.<sup>60</sup> The mechanisms used by the CAP to maintain commodity price levels within the European Union and subsidize production are as follows:
  - √ Import duties are applied to specified goods imported into the European Union in order to raise the world market price to the EU target price.
  - √ Import quotas restrict the amount of food imported into the European Union.
  - √ The European Commission maintains the internal market price between the intervention price and target price by purchasing domestic goods when the internal market price falls below the intervention level.
  - √ Direct subsidies are paid to farmers according to land in cultivation. This approach supersedes the previous method of paying farmers for the amount cultivated of a particular crop. Its introduction will be completed by 2011, although some EU member governments will retain control over how the new scheme is introduced.
  - √ Legislative harmonization within the European Union is intended to ensure a level playing field for commodity trade between member countries.
- **Sanitary and Phytosanitary Measures:** Measures related to Sanitary and Phytosanitary (SPS) are intended to protect the health of people, animals and plants. To this end, the European Union applies control standards over food and food product hygiene, animal health and welfare, plant health. It also provides rules on appropriate labeling for these foodstuffs and food products. This policy follows the so-called 'From the Farm to the Fork' approach that ensures a high level of safety for foodstuffs and food products at all stages of the production and distribution chains.<sup>61</sup> This approach applies to food produced within the European Union and those imported from third countries.
- **Environmental Regulations:** The principal components of the environmental legislation relating to the processed foods industry are (a) Integrated Pollution Prevention and Control Directive; (b) directive on packaging and packaging waste; (c) Framework Directive on Waste; and (d) climate change scheme known as the Emission Trading Scheme (ETS). The current ETS is compulsory for large food and drink companies, and is intended to reduce greenhouse gas (GHG) emissions caused by large installations at least cost.
- **Rules of Origin for GSP Status:** The major materials such as fruits, nuts or other parts of plants and animals used in processing should be wholly obtained in the originating country, e.g.,

#### Box B 3.1.

#### EU Market Access for Agri-Foods

Tariffs	MFN	GSP
Average	16.9	12.4
Maximum	40.0	36.5
Minimum	0.0	0.0

#### Product-Specific Requirements:

- Health control of non-animal foodstuffs.
- Health control of products of animal origin for human consumption.
- Plant health control.
- Packaging.
- Rules of origin.

Sources: Tariffs provided by European Commission, Trade Directorate; requirements from EC Helpdesk.

<sup>60</sup> EU Observer, "Parliament sets out demands on CAP reform". 08 July 2010. Available: <http://euobserver.com/9/30449>

<sup>61</sup> For details, see European Commission, "Food Safety: General Provisions". Available: [http://europa.eu/legislation\\_summaries/food\\_safety/general\\_provisions/index\\_en.htm](http://europa.eu/legislation_summaries/food_safety/general_provisions/index_en.htm)

Indonesia. Manufacturing material used in the processing of the product should not exceed 30 percent of the ex-works price of the product for the non-originating materials.

For Indonesian exporters shipping processed agri-food products to the EU markets, the following are the specific market access requirements:<sup>62</sup>

1. Tariffs: Duty rates vary across individual products within each category. For meat preparations, an ad valorem tariff of 16.9 percent applies to third countries, and a preferential tariff rate of 12.4 percent applies to Indonesia. For processed cereals and starches, an ad valorem tariff of 6.4 percent + 24.6 EUR/100 kg and a non preferential tariff quota applies to third countries, and a preferential tariff rate of 7.4 percent applies to Indonesia. For preparations of vegetables, fruit, nuts or other parts of plants, an ad valorem tariff of 10.9 percent applies to third countries 14.4 percent (no preferential rate).
2. Specific requirements cover (a) Health control of non-animal foodstuffs; (b) health control of products of animal origin for human consumption; (c) plant health control; (d) packaging; (e) food labeling rules; and (f) rules of origin. Figure B3.1 provides a visual summary of the health controls. These requirements apply equally to producers within the European Union and to third country suppliers.<sup>63</sup>
  - (a) Health control of non-animal foodstuffs: Compliance is required for (i) general and (ii) specific conditions to public health and protect consumers' interests.
    - (i) General conditions: Basic food law requirements applying to all food imported into the European Union are as follows:
      - Compliance or equivalence: Imported food must comply with the relevant requirements of food law or conditions recognized by the EU to be at least equivalent thereto.
      - Traceability: The regulation defines traceability as the ability to trace and follow food and ingredients through all stages of production, processing and distribution; it also contains general provisions for traceability which cover all food business operators, without prejudice to existing legislation on specific sectors such as beef, fish, genetically modified (GM) food, and others. Importers are similarly affected as they will be required to identify from whom the product was exported in the country of origin. Unless specific provisions for further traceability exist, the requirement for traceability is limited to ensuring that businesses are at least able to identify the immediate supplier of the product in question and the immediate subsequent recipient, with the exemption of retailers to final consumers (one step back-one step forward).
      - Responsibilities of food importers: Food business operators at all stages of production, processing and distribution within the businesses under their control must ensure that foods satisfy the requirements of food law which are relevant to their activities. If a food business operator has reason to believe that imported food is not in compliance with the food safety requirements, it must immediately initiate procedures to withdraw the food in question and inform the competent authorities thereof.
    - (ii) General foodstuffs hygiene rules: The relevant hygiene rules of food which need to be respected by food business operators in third countries are as follows:
      - General obligation on the operator to monitor the food safety of products and processes under his responsibility;

62 The following information draws on material available at the European Commission's Helpdesk for developing countries. Available: <http://exporthelp.europa.eu>.

63 The European Union Emissions Trading Scheme (EU-ETS) applies to large emitters of carbon dioxide (CO<sub>2</sub>) within the European Union. They are required to monitor and annually report their CO<sub>2</sub> emissions, and they are obliged every year to return an amount of emission allowances to the government that is equivalent to their CO<sub>2</sub> emissions in that year. The allocation could cause possible "leakage" (carbon leakage) of emissions outside the European Union by increasing emissions in countries that have weaker regulation of emissions than the regulation in another country or sector.

- General hygiene provisions for primary production and detailed requirements for all stages of production, processing and distribution of food;
- Microbiological criteria for certain products;
- Procedures based on Hazard Analysis and Critical Control Point (HACCP) principles; and
- Approval and registration of establishments.

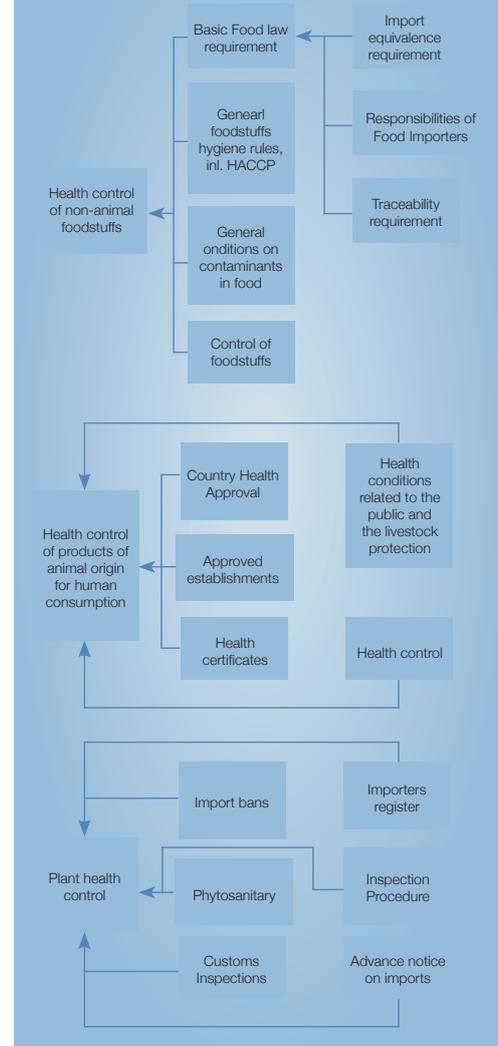
(iii) General conditions concerning contaminants in food: Contaminant substances may be present in food as a result of the various stages of its production and marketing or due to environmental pollution. Since they represent a real risk for food safety, the European Commission has taken the following measures to minimize the risk by setting maximum levels for certain contaminants in foodstuffs:

- Maximum levels of certain contaminants in foodstuffs: Certain foodstuffs (i.e. fruit, vegetables, nuts, cereals, fruit juices, and others) must not, when placed on the market, contain higher contaminant levels than those specified in Commission Regulation (EC) No 1881/2006 (CELEX 32006R1881).<sup>64</sup> This regulation covers four different categories of contaminants: nitrates, aflatoxins, heavy metals (lead, cadmium, mercury) and 3-monochloropropane-1,2-diol (3-MCPD), and others. The maximum contaminant levels relate to the edible part of the foodstuffs but apply also to the ingredients used for the production of compound foodstuffs.

- Maximum levels of pesticide residues in and on food: Member States may restrict the putting on the market within their territories of certain products containing pesticide residues if the quantity of these residues exceeds the maximum levels permitted presenting an unacceptable risk to humans. These limits depend on the toxicity of the substance in question.

- Maximum levels of radioactive contamination of foodstuffs: Council Regulation (EC) No 3954/1987 (OJ L-371 30/12/1987) (CELEX 31987R3954) and Commission Regulation (EC) No 944/1989 (OJ L-101 13/04/1989) (CELEX 31989R0944) lay down the maximum

Figure B 3.1. Health Control Requirements on EU Agri-Food Imports



64 For product listing, see <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2006:364:SOM:EN:HTML>

permitted levels of radioactive contamination of foodstuffs (either immediately or after processing) which may be placed on the market following a nuclear accident or any other case of radiological emergency. There is a list of minor foodstuffs (i.e. those which are consumed least) for which the maximum permitted levels are considerably higher (ten times higher).

- Materials intended to come into contact with foodstuffs: Materials and articles intended to come into contact with foodstuffs must be manufactured so that they do not transfer their constituents to food in quantities which could endanger human health, change the composition of the food in an unacceptable way or deteriorate the taste and odor of foodstuffs. Regulation (EC) No 1935/2004 of the European Parliament and of the Council (CELEX 32004R1935) establishes a list of groups of materials and articles (such as plastics, ceramics, rubbers, paper, glass, and others.) which may be covered by specific measures that include a list of the authorized substances, special conditions of use, purity standards, and others.<sup>65</sup> Specific measures exist for ceramics, regenerated cellulose and plastics.
- Special provisions on Genetically Modified (GM) food: In order to ensure the highest level of protection of human health, EU legislation provides for a single authorization procedure for the placing on the market of food containing, consisting of or derived from Genetically Modified Organisms. An application must be sent to the competent authority of a Member State and then referred to the European Food Safety Authority (EFSA) which carries out a risk assessment. On the basis of the opinion of EFSA, the Commission drafts a proposal for granting or refusing the authorization, which must be approved by the Standing Committee on the Food Chain and Animal Health. The authorized food and feed are entered in the Community Register of GM food and feed.
- Novel foods (i.e. foods and food ingredients that have not been used for human consumption to a significant degree within the EU before 15 May 1997) must also undergo a safety assessment before being placed on the EU market. Companies that want to place a novel food on the EU market must submit their application to the competent body of a Member State for risk assessment purposes. As a result of this assessment, an authorization decision may be taken. The authorization decision defines the scope of the authorization, the conditions of use, the designation of the food or food ingredient, its specification and the specific labeling requirements. Novel foods or novel food ingredients considered by a national food assessment body as substantially equivalent to existing foods or food ingredients may follow a simplified procedure, only requiring notifications from the company.
- General conditions of preparation of foodstuffs: EU legislation lays down the rules relating to treatment of foodstuffs, food ingredients and their conditions of use in order to protect the health of consumers and guarantee the free circulation of foodstuffs in the European Union market. Moreover, specific provisions for groups of foods are laid down in specific Directives. These include compositional requirements, hygiene requirements, list of additives, purity criteria, specific labeling requirements, and others, as follows:
  - √ Authorized food additives and flavorings: The scope of the Directives covers food additives and flavorings used as ingredients during the manufacture or preparation of food and which is part of the finished product. The only substances which may be used as food additives are those included in the approved common lists and then only under the conditions of use mentioned in those lists (e.g. colorants, sweeteners, preservatives, emulsifiers, stabilizers, raising agents, and others).

<sup>65</sup> <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2004:338:SOM:EN:HTML>

- √ Preparation and treatments of certain foodstuffs: There are also rules in relation with the manufacture, marketing and importation of foods and food ingredients that are subject to specific treatments such as Council Directive 89/108/EEC (OJ L-40 11/02/1989) (CELEX 31989L0108) on quick-freezing or Directive 1999/2/EC of the European Parliament and of the Council (CELEX 31999L0002) on ionizing radiation.<sup>66</sup>
  - √ Specific provisions for certain groups of products and for foodstuffs for particular nutritional purposes: Specific provisions are applied to certain groups of products (such as cocoa, sugar, and others.) and to foodstuffs intended for particular nutritional uses (baby foods, dietary foods, gluten-free foods). These may include specific requirements on composition, hygiene, labeling (e.g. declaration of the energy value, carbohydrate, protein and fat content), list of additives, purity criteria, and others.
- (iv) Control of foodstuffs: Regulation (EC) No 882/2004 of the European Parliament and of the Council (CELEX 32004R0882) establishes the EU framework of general rules for the organization of official controls on foodstuffs.<sup>67</sup> The competent authorities in Member States will carry out regular controls on imported food of non-animal origin to ensure they comply with the EU general health rules designed to protect health and interests of consumers. The control may apply to import into the EU and/or to any other stage of the food chain (manufacture, processing, storage, transport, distribution and trade) and may include a systematic documentary check, a random identity check and, as appropriate, a physical check. Besides, Commission Regulation (EC) No 669/2009 (CELEX 32009R0669) establishes that imports of certain food products must be subject to an increased level of official controls at the designated point of entry on the basis of a known or emerging risk.<sup>68</sup> The release for free circulation of these products is subject to the presentation of a Common Entry Document (CED) according to the provisions of this Regulation.
- (b) Health control of products of animal origin for human consumption: Imports of products of animal origin intended for human consumption must comply with the following health requirements related to: (i) Health conditions related to the public and the livestock protection; (ii) country health approval; (iii) approved establishments; (iv) health certificates; and (v) health control. Products can only be imported into the European Union if they come from an approved establishment of a third country included in a positive list of eligible countries for the relevant product, are accompanied by the proper health certificates, and have succeeded the mandatory control at the pertinent Member State's border inspection post (BIP). Compliance with these requirements is closely related to the fulfillment of certain conditions laid down in order to protect public and animal health. However, the European authorities might suspend imports from all or part of the third country concerned or take interim protective measures when products may present any risk for public or animal health as in the case of dangerous diseases outbreaks.
- (i) Health conditions related to the public and the livestock protection: Health requirements check compliance with conditions of public and animal health are designed to avoid transmission of diseases to either the public or the livestock. Such conditions mainly include the following:
- √ General principles and requirements of Food Law established in Regulation (EC) No 178/2002 of the European Parliament and of the Council (CELEX 32002R0178);<sup>69</sup>
  - √ General foodstuffs hygiene rules and hygiene specifications for food of animal origin according to Regulation (EC) No 852/2004 and 853/2004 of the European

66 See <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:1999:066:SOM:EN:HTML>

67 See <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2004:165:SOM:EN:HTML>

68 See <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2009:194:SOM:EN:HTML>

69 See <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2002:031:SOM:EN:HTML>

Parliament and of the Council (CELEX 32004R0852) (CELEX 32004R0852) respectively;<sup>70</sup>

- √ Animal Health conditions laid down in Council Directive 2002/99/EC (CELEX 32002L0099);<sup>71</sup>
- √ Measures to monitor the presence of residues of pesticides, veterinary medicines and contaminants in and on food of animal origin;<sup>72</sup>
- √ Animal welfare requirements, such as the specific provisions for slaughtering animals of Council Directive 93/119/EC (OJ L-340 31/12/1993) (CELEX 31993L0119);<sup>73</sup>
- √ Special provisions on genetically modified (GM) food and novel food according to Regulation (EC) No 1829/2003 of the European Parliament and of the Council (CELEX 32003R1829) and Regulation (EC) No 258/97 of the European Parliament and of the Council (OJ L-43 14/02/1997) (CELEX 31997R0258);<sup>74</sup>
- √ Specific conditions of preparation of foodstuffs;<sup>75</sup>
- √ General conditions regarding materials and articles in contact with food products in accordance with Regulation (EC) No 1935/2004 of the European Parliament and of the Council (OJ L-338 13/11/2004) (CELEX 32004R1935);<sup>76</sup>

(ii) Country Health Approval: The European Commission's Health and Consumer Protection Directorate-General (DG SANCO) applies a procedure to assess the candidate's third country compliance with EU Public and Animal Health conditions in which one of the steps is an on-site review by a team of experts of the Food and Veterinary Office (FVO). Once approved, the third country and/or part of third country is added to the list of authorized countries for that particular category of product. These lists are published in EU legislation.

(iii) Approved establishments: In addition to country approval, most products of animal origin may only be imported into the EU if they have been dispatched from, and obtained or prepared in, establishments (slaughterhouse, cutting plant, process plant, etc) that appear on a list approved by the Health and Consumer Protection Directorate General (DG SANCO).

(iv) Health certificates: Imports of products of animal origin into the EU must be accompanied by a health certificate signed by the representative of the competent authority in the exporting third country certifying that the products in question are suitable to be exported to the EU.

(v) Health control: On arrival, the products and the accompanying certificates must be verified and checked by the veterinarian officials in accordance with the provisions laid down in Council Directive 97/78/EC (OJ L-24 30/01/1998) (CELEX 31997L0078). Applying the procedures laid down by Commission Regulation (EC) No 136/2004 (OJ L-21 28/01/2004) (CELEX 32004R0136), the result of the inspection must be reflected in the Common Veterinary Entry Document (CVED).

(c) Plant health control: The imports into the European Union of plants, plant products and any other material capable of harboring plant pests (e.g. wooden products and containers, soil, and others) are possibly subject to the following protective measures: (i) import bans; (ii) phytosanitary certificate and/or phytosanitary certificate for re-export; (iii) customs Inspection and plant health checks; (iv) importers register; (v) advance notice on imports. These phytosanitary measures

<sup>70</sup> See <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2004:226:SOM:EN:HTML>

<sup>71</sup> See <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2003:018:SOM:EN:HTML>

<sup>72</sup> [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_99v001/au/auxi/eu\\_heahhc\\_develop4.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_99v001/au/auxi/eu_heahhc_develop4.pdf)

<sup>73</sup> See [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_99v001/au/auxi/eu\\_heahhc\\_develop5.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_99v001/au/auxi/eu_heahhc_develop5.pdf)

<sup>74</sup> <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2003:268:SOM:EN:HTML>

<sup>75</sup> [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_99v001/au/auxi/eu\\_heahhc\\_develop7.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_99v001/au/auxi/eu_heahhc_develop7.pdf)

<sup>76</sup> [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_99v001/au/auxi/eu\\_heahhc\\_develop8.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_99v001/au/auxi/eu_heahhc_develop8.pdf)

are intended to prevent the introduction and/or spread of pests and organisms harmful to plants or plant products across the EU boundaries. Those measures enforce the International Plant Protection Convention of the Food and Agriculture Organization (IPPC-FAO), to which EU Member States are contracting parties and which sets out the basic rules and control procedures to secure a common and effective action to protect the countries' agricultural and forestry resources.

The IPPC requires every contracting country to establish a national plant protection organization to inspect growing crops and to report on pests and control them. A complete listing of the national plant protection organizations (NPPOS) can be found at the official website for the IPPC.<sup>77</sup> French Overseas Departments and Spanish Canary Islands, in view of its agricultural and ecological characteristics, may request additional conditions to those laid down in the Directive assuming they are justified on grounds of the protection of health and life of plants in their territories.

Council Directive 2000/29/EC establishes several exemptions for each phytosanitary measure (e.g. plants and plant products for trial, scientific purposes, work on varieties selection; internal transit; small quantities that do not pose a risk of spreading harmful organisms and others.). They are usually granted for a limited period, subject to special import conditions and to a specific license.

- (i) Import bans: Member States must ban the introduction into their territory of:
- Certain particularly dangerous harmful organisms, which are listed in Annex I, Part A to Council Directive 2000/29/EC.<sup>78</sup>
  - Plants and plant products listed in Annex II, Part A, where they are contaminated by the relevant harmful organisms listed in that part of the Annex to the Directive.<sup>79</sup>
  - Plants or plant products listed in Annex III, Part A, where they originate in the relevant countries referred to in that part of the Annex to the Directive.<sup>80</sup>
  - Plants, plant products and other objects listed in Annex IV, Part A, except for those meeting the special requirements indicated in that part of the Annex to the Directive.<sup>81</sup>
  - In relation to wood packaging, the provisions establish that wood packages of any type (cases, boxes, crates, drums, pallets, box pallets and other load boards, pallet collars, and others) must go through one of the approved treatments specified in Annex I to FAO International Standard for Phytosanitary Measures No. 15, bear the corresponding mark as specified in Annex II and be made from debarked wood.<sup>82</sup>
- (ii) Phytosanitary certificate and/or phytosanitary certificate for re-export: Imports of plants and plant products must be accompanied either by an official "phytosanitary certificate" or a "phytosanitary certificate for re-export" (in case the consignment after being dispatched from a third country, has been stored, repacked or split up in another non-EU country). Those documents certify the phytosanitary conditions of plants and plants products, and also that the shipment has been officially inspected, complies with statutory requirements for entry into the EU and is free of quarantine pests and other harmful pathogens. They must be at least in one of the official languages of the EU and must be issued by the designated authorities of the third country of export or re-

77 Available at <http://www.ippc.int/>

78 See list at [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_02v001/eu/auxi/eu\\_heaplant\\_annex1a\\_d2000\\_29.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_02v001/eu/auxi/eu_heaplant_annex1a_d2000_29.pdf)

79 See list at [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_02v001/eu/auxi/eu\\_heaplant\\_annex1a\\_d2000\\_29.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_02v001/eu/auxi/eu_heaplant_annex1a_d2000_29.pdf)

80 See list at [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_02v001/eu/auxi/eu\\_heaplant\\_annex3a\\_d2000\\_29.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_02v001/eu/auxi/eu_heaplant_annex3a_d2000_29.pdf)

81 See list at [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_02v001/eu/auxi/eu\\_heaplant\\_annex4a\\_d2000\\_29.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_02v001/eu/auxi/eu_heaplant_annex4a_d2000_29.pdf)

82 Annex I is available at [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_02v001/eu/auxi/eu\\_heaplant\\_annex1\\_fao15.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_02v001/eu/auxi/eu_heaplant_annex1_fao15.pdf);

Annex II is available at [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_02v001/eu/auxi/eu\\_heaplant\\_annex2\\_fao15.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_02v001/eu/auxi/eu_heaplant_annex2_fao15.pdf)

export and made out not more than 14 days before the date on which the plants, plant products or other objects covered by it have left the country of issuance. Phytosanitary certificates must be issued in compliance with the provisions of the IPPC and taking into account the FAO International Standard for Phytosanitary Measures No 12 on Guidelines for phytosanitary certificates.<sup>83</sup>

(iii) Customs inspection and plant health checks: In addition to the above mentioned certificates, the plants and plant products must, from the time of their entry in the EU, be subject to customs inspections and supervision by the responsible official bodies. The inspections must consist in:

- Documentary checks establishing that the required certificates, alternative documents or marks have been issued or satisfied
- Identity checks establishing that the plants, plant products or other objects conform to the ones declared on the required documents and
- Plant health checks establishing that the plants, plant products or other objects, including their wood packing material if any, comply with the specific requirements and phytosanitary measures specified in Council Directive 2000/29/EC and can be imported into the EU.

The inspections must be made at the point of entry into the EU at the proper Member State's border inspection post (BIP). However, identity checks and plant health checks may be carried out at the place of destination provided that there is satisfaction of specific guarantees and documents regarding transport of plants and plant products determined for each particular case

(iv) Importers register: Importers, whether or not producers, of plants, plant products or other objects must be included in an official register of a Member State under an official registration number.

(v) Advance notice on imports: Member States may require airport authorities, harbor authorities, importers or operators to give, as soon as they are aware of the imminent arrival of a consignment of plants, plant products and other objects advance notice to the customs office of point of entry and to the official body of point of entry. In addition and without prejudice to provisions of Council Directive 2000/29/EC, plants, plant products and any other material capable of harboring plant pests may be subject to emergency measures.<sup>84</sup>

(vi) Inspection Procedure: Imports of plant and plant products can only be done through the authorized points of entry and from the time of their arrival will be subject to the supervision of the officials of the competent authorities under customs surveillance. The importer or its representative must give advance notice of the arrival and submit a request for inspection that should at least contain:

- The "Taric" code (the product identification in the European Integrated Tariff Nomenclature)
- An statement indicating that the consignment contains produce of phytosanitary relevance
- Reference number(s) of the required phytosanitary documentation
- Official registration number of the importer
- The inspections will consist in documentary checks, identity checks and, when judged necessary by the competent officials, also plant health checks. Release from customs can only be done after a favorable result.

83 For details on the standards, see [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_02v001/eu/auxi/eu\\_heaplant\\_fao12.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_02v001/eu/auxi/eu_heaplant_fao12.pdf)

84 For coverage of emergency measures, see [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_02v001/eu/auxi/eu\\_heaplant\\_emergency\\_measures.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_02v001/eu/auxi/eu_heaplant_emergency_measures.pdf)

- (d) Packaging: All foodstuffs marketed in the European Union must comply with EU labeling rules, which aim at ensuring that consumers get all the essential information to make an informed choice while purchasing their foodstuffs. Hence, the applicable labeling provisions are as follows: (i) General rules on food labeling; (ii) specific provisions for certain groups of products:
- Labeling of Genetically Modified (GM) food and Novel Food
  - Labeling of foodstuffs for particular nutritional purposes
  - Labeling of food additives and flavorings
  - Labeling of materials intended to come into contact with food
  - Labeling of particular foodstuffs
- (e) General rules on food labeling: Labels of foodstuffs must contain the following details:
- The name under which the product is sold. No trademark, brand name or fancy name may substitute the generic name but rather may be used in addition. Particulars as to the physical condition of the foodstuff or the specific treatment it has undergone (powdered, freeze-dried, deep-frozen, concentrated, smoked, irradiated or treated with ionizing radiation) must be included where omission of such may confuse the purchaser.
  - The list of ingredients, preceded by the word “Ingredients”, must show all ingredients (including additives) in descending order of weight as recorded at the time of their use in the manufacture and designated by their specific name. In the case of those products that may contain ingredients liable to cause allergies or intolerances, such as alcoholic beverages, a clear indication should be given on the label by the word “contains” followed by the name of the ingredient. However, this indication will not be necessary provided the specific name is included in the list of ingredients.
  - The net quantity of pre-packaged foodstuffs in metric units for liquids and for non-liquids.
  - The date of minimum durability consisting of day, month and year in that order and preceded by the words “best before” or “best before end” or the “use by” date for highly perishable goods.
  - Any special conditions for keeping or use.
  - The name or business name and address of the manufacturer, packager or importer established in the EU.
  - Place of origin or provenance
  - Instructions of use, where appropriate.
  - Lot-marking on pre-packaged foodstuffs with the marking preceded by letter “L”. These particulars must appear on the packaging or on a label attached to pre-packaged foodstuffs. In the case of pre-packaged foodstuffs intended for mass caterers (foodstuffs sold in bulk), the compulsory labeling particulars must appear on commercial documents while the name under which it is sold, the date of durability or use-by-date and the name of manufacturer must appear on the external packaging.

Where foods are pre-packed outside the European Union, the importer must ensure the packaging complies with EU rules on food packaging. Three types of packaging are used for food. Transport or export packaging is the outermost layer, which protects the product during transit. Outer packaging is an intermediate layer, for example a box containing several bags, tins or pouches of product, which is sometimes used to display goods in a retail environment. Sales packaging is the immediate layer of packaging around the goods.<sup>85</sup>

There are a number of requirements in EC Regulation No 1935/2004 that cover packaging for foods and other materials. As well as dealing with packaging in direct contact with food, the

85 This material draws from “Food labeling and Packaging in International Trade”. Available: <http://www.businesslink.gov.uk/bdotg/action/detail?type=RESOURCES&itemId=1080034465&r.s=e&r.l1=1079717544&r.lc=en&r.l3=1079819216&r.l2=1077717216&r.i=1080034743&r.t=RESOURCES>

rules cover packaging capable of affecting food through the migration of its constituents into the food. Key rules include: (i) aluminum is considered safe for food contact, although it may not be suitable for highly acidic foods such as tomatoes and soft fruits; and (ii) plastics are subject to an overall migration limit of 10 milligrams per square decimetre of plastic surface area or per kilogram of food. There are also many specific migration limits that apply to individual substances contained in the regulations, whether they are plastic monomers or plastics additives that are used to achieve a particular technical effect. There are also rules about the use of declarations of legal compliance that apply to packaging moving up and down the supply chain. Other specific rules apply to regenerated cellulose film, ceramics, plasticisers in seals for food containers, certain epoxy derivatives used in coatings, adhesives and plastics when used in contact with food.

Rules apply to contamination from chemicals, including mycotoxin contamination (in, for example, cereals and dried fruit) and radiological contamination from the use of pesticides and animal medicines, as well as nitrates from green, leafy vegetables. The overriding rule is that any packaging materials must not allow their constituents to migrate into the food in quantities that could harm human health or affect the nature or quality of the food. To this end, for those that manufacture or convert packaging materials into particular food packaging, there are also rules about the documentation of good manufacturing practice within the business. Packaging that meets the requirements for food contact is labeled 'for food contact' and may also bear a specific symbol resembling a wine glass and a fork.

New types of packaging material that actively maintain or improve the condition of food, as opposed to simply containing it, are now available. Other materials, known as 'intelligent packaging', monitor the condition of the food. These active packaging materials must comply with regulations on food additives, and these and the 'intelligent' packaging technologies should not be used to disguise problems such as spoilage. Information should be given on the package to help consumers use them safely.

- (f) Rules of Origin Applicable to GSP Status: The major materials such as fruits, nuts or other parts of plants and animals used in processing should be wholly obtained in the originating country, that is, Indonesia. Manufacturing material used in the processing of the product should not exceed 30 percent of the ex-works price of the product for the non-originating materials.

### **B.3.2 Value Chain Analysis**

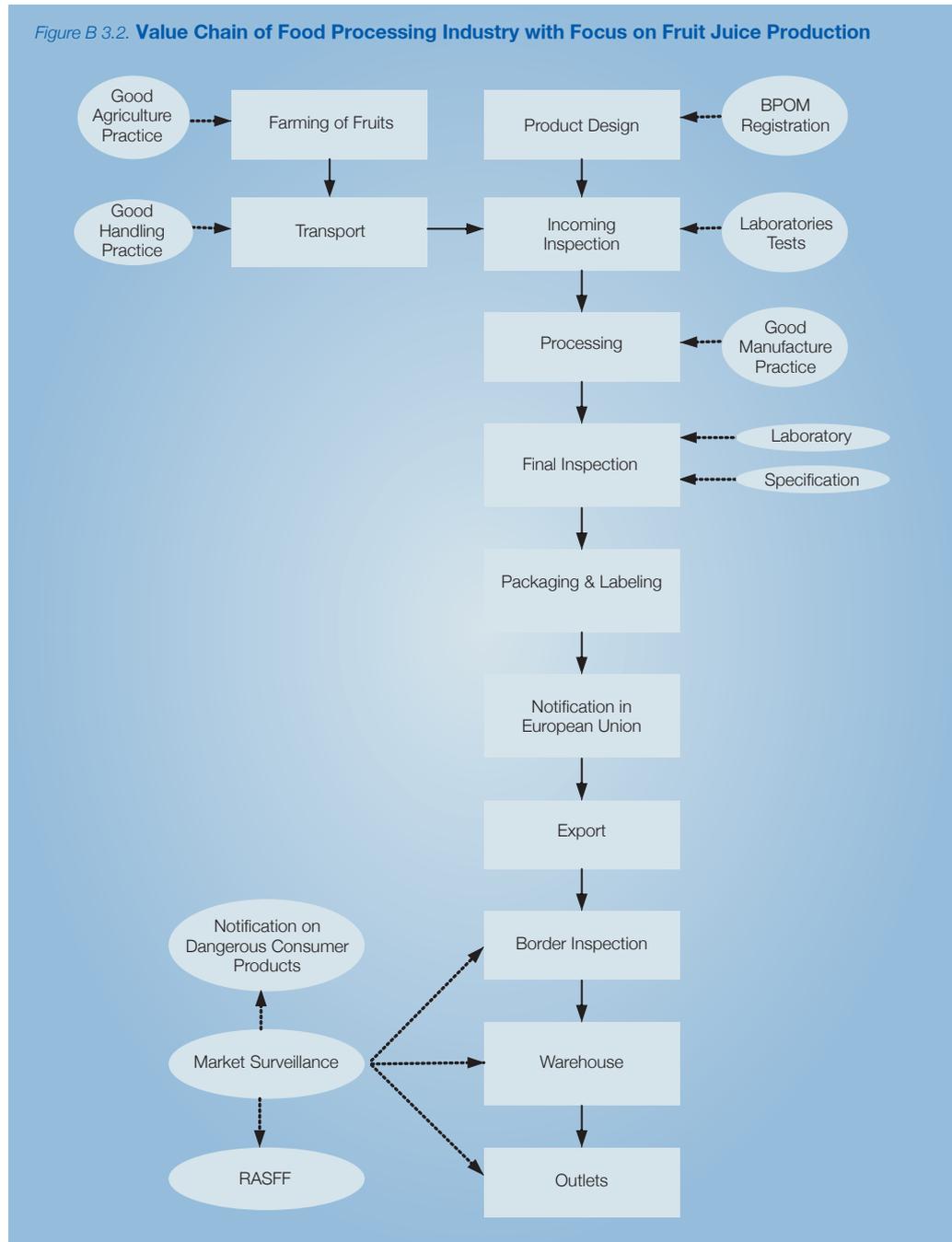
The value chain of the Indonesian food processing industry can be described in terms of the activities starting with the purchase of raw materials through to marketing in the European Union. Figure B3.2 illustrates the value chain for the food processing industry with focus on fruit juice production. The figure shows the relationships between the various actors within the value chain and illustrates the flow of goods from raw material supply to the end consumer. The figure also shows all relevant quality and product safety requirements for conformity assessment. The European Union's non-animal EU food regulations apply to fruit juices. Thus the general EQI issues in the fruit juice supply chain discussed in this section are a relevant example for other food of non-animal origin.

An integrated approach is necessary in order to achieve food safety and quality beginning with primary production (farming) through to the export of the products and the distribution to consumers. Every actor in the food value chain must ensure that food safety is not compromised. The following sections describe how and where the actors in the value chain have to deal with these requirements followed by general issues related to food safety that are important throughout the entire value chain.

#### **Step 1 – Fruit Farming**

Process Description: Fruit farming, also called primary production, includes all steps in the harvesting and pre-processing phase such as removing leaves, washing and sorting up to transport to the processor or middleman. In Indonesia fruit is mostly grown on small farms, which can be classified

Figure B 3.2. Value Chain of Food Processing Industry with Focus on Fruit Juice Production



either as micro scale enterprises (MSEs) or Small and Medium sized Enterprises (SME). Some large farms specialize in certain fruit types e.g. one large farm located in Sumatra specializes in pineapples, which are processed into canned pineapple and pineapple juice.

*EQI Issues:* In farming, which is the first step in the value chain, various safety issues must be considered. Contamination or inadequate product handling will have a negative impact on the end product and therefore must be avoided by applying hygiene regulations in all process steps including storage and transport to the processor.

Good Agriculture Practices (GAP) should be applied in farming to avoid contamination arising from

soil, water, fertilizer, plant protection and biocides. The European Union has a regulation on maximum residue of pesticides in, or on, food.<sup>86</sup> This regulation sets maximum values in fruit juice for patulin and lead (Pb) at 50 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ).<sup>87</sup> Records have to be kept to control hazards, particularly on the use of plant protection products, biocides, and occurrence of pest and diseases - and of the test results. The alteration of the nature of primary products during transport, storage and handling has to be avoided. Therefore storage containers and vehicles must be clean and must be sterilized if necessary. The good health of staff must be ensured.

HACCP (Hazardous Analysis and Critical Control Point) and hygiene are the most frequently applied measures in food safety to ensure stable products. However, since the application of HACCP is generally not feasible for primary fruit producers, the application of Good Agriculture Practices (GAP) is required.

*MSEs and SMEs:* It appears that large Indonesian fruit juice producers are not interested in cooperating with small and medium size farmers since they cannot provide a reliable supply of fruits and are not able to apply Good Agriculture Practices (GAP) such as GLOBALG.A.P.

In order to address this problem the Indonesian Ministry of Agriculture has developed a strategy to improve the agriculture sector in Indonesia that focuses on: (i) increase of production quantity; (ii) reduction of losses due to non-conforming product; (iii) quality and safety of the food and (iv) sustainability of supply.

The Ministry is currently developing a guidebook on Good Agriculture Practices based on GLOBALG.A.P to encourage the implementation of good hygiene practices in MSEs and SMEs.<sup>88</sup> In order to increase the number of farmers applying GAP, the Ministry of Agriculture has developed a certification scheme aimed at small farmers who would like to develop their quality and food safety management. The system has three levels: the lowest level is called Prima 3 and focuses on the management of residues. The second level is Prima 2 and includes the entire Hazardous Analysis and Critical Control Point (HACCP) food safety system. The highest level is Prima 1 and is equivalent to GLOBALG.A.P.

At the same time the Ministry of Agriculture<sup>89</sup> is working on a model for farming groups.<sup>90</sup> The objective being to increase the competitive advantage of small farmers due to economies of scale, to facilitate access for farmers to bank loans and to increase the quality and safety of their produce by implementing a food quality and safety management system. This farming group system has been developed based on the Internal Control System (ICS) of IFOAM.<sup>91</sup> To stimulate the widespread use of this model, the Ministry of Agriculture provides a revolving fund for farmer groups allowing them to access loans up to Rp 100 million for investment. Funds generated by repayment of these loans will then be provided to other farming groups as a revolving fund. In order to participate in this loan scheme farmer groups have to register with their district government. Prior to any loan disbursement the district government will evaluate the performance of the group.

#### *Conclusions:*

It is currently difficult for MSE and SMEs to adapt their activities to ensure that food placed on the market meets the required standard of food safety. By this reason larger fruit processors are reluctant to cooperate with smaller farmers and prefer to operate their own farms or purchase fruit pulp from foreign suppliers

In order to achieve a significant increase in processed fruit or fruit juice originating from Indonesian

86 See Regulation (EC) No 396/2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin

87 See Commission Regulation (EC) No 1881/2006 setting maximum values for certain contaminants in foodstuffs

88 See [www.globalgap.org/cms/front\\_content.php?idcat=9](http://www.globalgap.org/cms/front_content.php?idcat=9)

89 Direktorat Jenderal Pengolahan dan Pemasaran Hasil Pertanian, Departemen Pertanian

90 Pedoman system pengawasan internal (SPI) / Internal control system (ICS) pada penerapan system jaminan mutu hasil pertanian berbasis kelompok, not published yet

91 "Revised IFOAM Producer Manual for Setting Up and Harmonizing an Internal Control System (ICS), May 2004, available at [www.ifoam.org/about\\_ifoam/standards/ics.html](http://www.ifoam.org/about_ifoam/standards/ics.html)

farms for export it will be necessary to improve various aspects of fruit farming in Indonesia. The application of hygiene and GAP in all steps of primary production (farming, pre-processing, storage and transport) will be required. It appears more feasible to approach this goal by forming farmer groups rather than by dealing with a huge number of single MSEs and SMEs. The Indonesian Ministry of Agriculture has set up programs to promote the establishment of farmer groups and to support the application of GAP including certification schemes. It must be noted that the task on hand is of an enormous proportion due to the size and geographical nature of Indonesia, which consists of more than 17,000 islands spread over a vast area.

### **Step 2 – Purchasing of Materials and Incoming Inspection**

*Process Description:* During the purchasing process all material required for processing the finished product, including suitable packaging material, is purchased from selected suppliers. Supplied material is inspected with regard to quantity and quality. The degree and effort for incoming inspection depends on material specifications and to a very large extent on the reliability of suppliers. The inspection of fruits and packaging material is mostly by visual inspection only.

#### *EQI Issues:*

In the purchasing process EQI issues are related to contaminants that are permissible in the product up to a certain concentration specified in EU regulations. It has to be ensured that the raw material purchased does not contain these substances at a level that will exceed the maximum allowed contaminant level in the final product. Processors should also not accept raw materials that are contaminated with parasites or pathogenic micro-organism or are toxic or decomposed. Purchasing documents for such raw materials should reflect these requirements.

In fruit juice production usually only visual inspection is performed, with fruits that appear to be in an unacceptable condition being rejected. Since this procedure does not allow detection of contaminants the risk of exceeding allowed contaminant level in the final product is very high if traceability to the farmers cannot be ensured

*SMEs and MSEs:* Fruit juice producers that are aiming to export to the European Union depend on a reliable supply of fruit that has been farmed under controlled conditions. Since most small and medium size farmers do not apply Good Agriculture Practices (GAP) as required fruit juice exporters prefer to use fruit grown on their own controlled farms. In order to include SMEs and MSEs into the supply chain it will be required to support them in GAP application which appears to be only feasible if they can be convinced to work in groups or cooperatives.

*Conclusions:* Indonesian fruit juice producers, especially those that are exporting their products to the European Union, are facing a serious supply problem, as supplies from small farms are unreliable and uncontrollable. Since most fruit juice producers do not want to get involved in fruit farming and those who do are confronted with limitations on the availability of land for farming, no significant growth in fruit juice export can be achieved as long as the small farmers cannot fulfill the requirements of GAP and traceability.

### **Step 3 – Processing**

*Process Description:* Fruit juice processing is characterized by mainly mechanical activities supported by heating and cooling activities. All ingredients, natural and chemical, are combined in different process steps until the end product is achieved. Heat processes are mostly applied for sterilization. The principal processes of fruit juice production can be described as follows:

Supplied fruit is washed and sorted to distinguish between sufficiently ripe fruit and fruit that will have to be stored for further ripening. All ripe fruit will then be peeled and cut and the seeds are removed. The fruit pieces are then blended to pulp, which is passed through a sieve in order to obtain fruit juice. After sieving the juice goes through a pasteurization process at a temperature of 60-70C. The

juice is then cooled down quickly and stored at cold storage at 15C before it is filled into either bottles or laminated boxes such as the well-known TETRA PAK range. The finished product is then packed in cardboard boxes for storage and transport.

*EQI Issues:* The processing of food products has to be performed under conditions of Good Manufacturing Practices (GMP) and with an established Hazard Analysis and Critical Control Point (HACCP) system.

Hygiene has to be ensured to control hazards and ensure that the food is fit for human consumption. A study has shown that recalls of food are mostly related to failures in GMP.<sup>92</sup> GMP provides hygiene requirements related to various elements: buildings and equipment, sanitation and hygiene, production, warehouses, quality assurance, documentation, internal audit, complaints and product withdrawals. Pest control as well as the number of lavatories and wash basins has to be considered. In all areas where foodstuff is processed it must be ensured that tables, walls, ceilings, doors and equipment are designed in a way that they do not easily accumulate dirt and are easy to clean. All surfaces and items have to be regularly cleaned and, if necessary, disinfected. Special attention has to be given to the cleaning of equipment that comes in direct contact with the product. Adequate potable water supply has to be ensured. Personal hygiene is of utmost importance. Every person handling food in the process area has to maintain a high degree of personal cleanliness and shall wear suitable protective clothing. No person suffering from diseases that can be transmitted by food is allowed to enter the food processing area. Food waste has to be stored separately from products and ingredients and has to be removed from the production area quickly and regularly.

HACCP is a system to control the most important critical control points of a process. In accordance with EU regulations food processors are required to implement HACCP. The implementation of a HACCP system in food processing should be done under consideration of Codex Alimentarius.<sup>93</sup> With HACCP the critical points in production are identified and control measures are established at these points. In fruit juice production the most critical process steps are related to the sterilization process. The sterilization process has to be observed very carefully since the temperature and duration of the heating process are very critical parameters. If the heating time is too short or the temperature too low the product will not be sterilized as intended. The product will deteriorate if the heating time is too long or if the temperature is too high. Therefore careful monitoring and recording to these two parameters is required. After the sterilization process at high temperature the product has to be cooled down to about 15C as quickly as possible to avoid any unintended product alterations during the process.

*SMEs:* SMEs are also often not aware of hygiene problems and the advantages of GMP practices and many regard the HACCP system as too administrative, too complicated and expensive. SMEs are unaware that these systems' requirements are proportional to the business size and nature of its activities, and thus not as demanding for SMEs carrying out a simple process than for large companies with complex processes."

*Conclusions:* At present only large Indonesian fruit juice producers apply GMP and HACCP whilst most SME juice processors do not. Therefore the majority of fruit juice producers cannot ensure sufficient hygiene and product safety.

#### **Step 4 – Final Inspection**

*Process Description:* After the production process is completed the product has to be tested for specifications related to quality and health safety.

*EQI Issues:* During final inspection fruit juices should be tested for pesticides, heavy metal and microbiological criteria in relation to food safety. Certificates on these tests are usually required by EU clients. Additional analyses are conducted regarding acidity, total suspended solids, vitamin C, water

92 See S.Kumar and E.M.Budin, Prevention and management of product recalls in the processed food industry: a case study based on an exporter's perspective, *Technovation*26(2006)739-750

93 See Codex Alimentarius Standard of WHO/FAO: [www.codexalimentarius.net/web/index\\_en.jsp](http://www.codexalimentarius.net/web/index_en.jsp)

content, sum of sugar (saccharose, fructose) and citrate acid.

Testing can be performed in company owned laboratories or in external laboratories. Large companies usually have their own quality laboratory while smaller companies mostly rely on testing in external laboratories.

*SMEs:* Most small and medium size fruit juice producers cannot afford to operate their own test laboratories due to the high cost of analytical equipment and operational costs. SMEs consider testing in external laboratories to be too expensive and therefore many SMEs do not test their products regularly.

*Conclusions:* Due to cost constrains most SMEs do not conduct the required analysis and testing at final inspection and are therefore not able to ensure sufficient hygiene and product safety. These producers do not qualify for export. Only a very limited number of larger fruit juice producers can afford all required test and data for conformity assessment.

### **Step 5 –Packaging, Labelling and Storage**

*Process Description:* The product is packed, labeled and stored in the warehouse. Packaging material is divided into three categories (a) sales packaging or primary packaging (also called wrapping), (b) grouped packaging or secondary packaging, (c) transport packaging or tertiary packaging. All labels applied have to be in compliance with the requirements of the destination market.

*EQI Issues:* EQI requirements are related to three issues: packaging material, labeling, and storage of the product.

- (i) **Packaging Material:** Packaging material must ensure that the products cannot be damaged and that the quality of the product will not deteriorate.

Primary wrapping material, which comes in direct contact with the food, must be of food grade to secure a high level of protection of human health.<sup>94</sup> These wrapping materials have to be manufactured in compliance with good manufacturing practice to avoid endangering human health, bringing unacceptable changes in the composition of food and bringing deterioration in the organoleptic characteristic of the food. When placed on the market the wrapping material has to bear the words “for food contact” and the logo in this respect. Traceability of the material must also be ensured.

For exports to the European Union, Section 3.1 provides information about the packaging and packaging waste requirements. They refer to the prevention of packaging waste and reuse of packaging, recycling and other forms of recovering packaging waste and the reduction of the final volume of such waste.

- (ii) **Labeling:** Labels must ensure that sufficient information is provided

In accordance with EU requirements labels of foodstuff must contain information as described in detail in chapter 3.1. Specific labeling requirements regarding fruit juice require information on the composition of the juice (from one fruit or mixture of fruits), any sweetening of the product and if the product has been obtained entirely or partly from a concentrate.<sup>95</sup> A recent study found that a large percentage of recalls were caused by incorrect labeling and packaging.<sup>96</sup>

- (iii) **Storage:** Products and materials must be stored to ensure that the quality of the product does not deteriorate

Processed fruit juice, as well as ingredients such as fruits, vitamins and sugar, must be stored in such a way that they will not get damaged. The temperature of the product has to be carefully monitored during storage. Fruit juice in particular cannot be stored safely at ambient temperatures and needs cooling throughout storage and transport.

<sup>94</sup> See Regulation (EC) No 1935/2004 on materials and articles intended to come into contact with food

<sup>95</sup> For more details see website [http://europa.eu/legislation\\_summaries/consumers/product\\_labelling\\_and\\_packaging/l21132\\_en.htm](http://europa.eu/legislation_summaries/consumers/product_labelling_and_packaging/l21132_en.htm) and related regulations mentioned on this website

<sup>96</sup> See S.Kumar and E.M.Budin, Prevention and management of product recalls in the processed food industry: a case study based on an exporter's perspective, *Technovation*26(2006)739-750

Conclusions: Packaging material has to be in accordance with EU regulations. Wrapping material that comes into contact with food must be of food grade. Labelling is a major issue for the export of food to the European Union. The EU regulations related to labelling have to be followed strictly to ensure proper marketing in the European Union. Food safety requirements (e.g. low temperature) have to be met during storage and transport.

### **Step 6 – Export to the European Union**

*Process Description:* The exported food must comply with the relevant requirements of the EU food law and has to be registered in the EU Member State of entry. Compliance with all applicable requirements on packaging and labeling has to be ensured.

*EQI Issues:* Food of non-animal origin can enter the European Union without certification by the competent authority of the third country of dispatch and is not subject to a pre-notification procedure on arrival. However, the exporter or its representative has to notify the competent authority in the relevant member state of the European Union. Information required includes certificates related to food safety and quality systems such as ISO 9001, HACCP, GMP, ISO 22000 and product test certificates. The importer is also obliged to notify the competent authority of any significant change after registration. The aim of the notification is to enable the national competent authority in the Member State to perform official control. The details of the registration are determined by each Member State and aim at informing the authority of the importer's address and field of activity.

*Conclusions:* The exporter or representative has to notify the competent body in the destination country before placing a new product on any market in the European Union.

### **Hygiene Requirements**

Since 1993 EU regulations require that all food businesses after primary production (harvesting) must have in place, implement and maintain a management system based on Hazard Analysis and Critical Control Point (HACCP).<sup>97</sup> In 2006 new rules were established in the European Union regarding the hygiene of food of non-animal origin for food business operators. Requirements for producers in the European Union and importers from third countries are described in section 3.1 above. They refer to the obligation of operators to monitor the food safety of products and processes, general hygiene for primary production and post-primary production processes. The processor has to implement Hazard Analysis and Critical Control Point (HACCP) principles to an extent depending on the nature and size of the business.

The process-oriented principle that food business operators throughout the food chain have responsibility for ensuring that food placed on the market meets the required standard of food safety includes the primary production (farmers). Therefore most large food processors and their buyers require Good Agricultural Practice (GAP) from primary producers. Certification of international organizations such as GLOBALG.A.P satisfies this request.

### **Traceability**

In order to be in line with the process-oriented principle in the food industry, traceability must be established at all stages of production, processing and distribution. All food business operators must be able to identify all sources of purchased goods as well as all destinations of goods supplied to others. Traceability is limited so that businesses are at least able to identify the immediate supplier of the product and the immediate subsequent recipient - with the exception of retailers. This principle is called "one step back-one step forward". This information must be provided to the competent authority on demand. All food must also be adequately labeled to ensure traceability.<sup>98</sup>

<sup>97</sup> Council Directive 93/43/EEC on hygiene of foodstuff

<sup>98</sup> See Regulation (EC) 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety

### **Post Market Surveillance**

Process Description: Competent authorities carry out controls of food.<sup>99</sup> Such controls include inspections to food business operators and are also conducted on imported foodstuff. Failure to comply with hygienic requirements can result in withdrawal and/or the destruction of the foodstuff. In extreme cases it may even lead to the closure of the responsible business operator.

Information regarding dangerous products may arise from the market surveillance of the member states or from the producer or distributor. EU member states have to perform market surveillance in their own state. EU member states have to ensure that only products that conform to EU requirements are sold on the market. Appointed inspectors perform market surveys in outlets and warehouses to verify the compliance of the product with all composition, packaging and information requirements. Distributors and producers also play a role in the provision of information and are obliged to inform the EU authorities if they know that a marketed product is dangerous.<sup>100</sup>

### **RASFF**

Rapid Alert System for Food and Feed (RASFF): The aim of the rapid alert system is to notify all member states of direct or indirect risk deriving from food. If a food business operator has reason to believe that the food marketed is not in compliance with the food safety requirements, this operator is obliged to immediately initiate processes to withdraw the food from the market. The business operator has to inform the authorities immediately and to cooperate with them to avoid and reduce risks.<sup>101</sup> The number of RASFF from Indonesia for food from non-animal origin is as follows: 2010 (until October): 5; 2009: 7; 2008: 7; 2007: 6; 2006: 4; and 2005: 8.

### **Certification**

EU regulations require that all food businesses after primary production (harvesting) must have in place, implement and maintain a management system based on Hazard Analysis and Critical Control Point (HACCP). Compliance with this requirement is demonstrated by presenting a current HACCP certificate. Conformity assessment bodies carry out regular inspections or audits and will issue a compliance certificate if all requirements are met. Ministry of Agriculture is only responsible for certification of unprocessed food of non-animal origin.

Several private and government institutions are accredited as certification bodies for HACCP in Indonesia.

### **Voluntary Food Certification**

GLOBALG.A.P.: Established in the 1990s, GLOBALG.A.P (formerly EUREPG.A.P) is a private sector body active in the certification of production processes of agricultural products around the world. GLOBALG.A.P is thus responsible for setting the standards of this voluntary certification. The G.A.P. in the title refers to Good Agricultural Practice (GAP).

The purpose of this private standard is to ensure that consumers are aware of how food is produced in farms, to reduce the negative side-effects of farming on the environment, to minimize the use of chemicals and to guarantee health, safety and animal welfare. The standard sets certain regulations that farmers have to abide by and addresses the entire process. Compliance with regulations and standards is evaluated by third party auditors for certification.

The name of the organization and its standard was amended to GLOBALG.A.P in September 2007 in anticipation of its global approach and application no longer limited only to Europe. Today, GLOBALG.A.P has established itself as the most implemented farm certification system in the world.

<sup>99</sup> See Directive 89/397/EEC

<sup>100</sup> See Directive (EC) 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety

<sup>101</sup> See Regulation (EC) 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety

*SQF*: Safe Quality Food (SQF) was established in 1994 and is administered by the SQF institute that belongs to the Food Marketing Institute. The SQF program is a global food safety and quality management and certification program that provides independent certification. SQF is designed as a food safety program but also covers product quality issues. SQF offers two systems: SQF 1000 for primary production and SQF 2000 for food manufacturing and distribution. The programs provide three levels of certification: Level 1 “food safety fundamentals” covers prerequisite programs including fundamental food safety controls. This level is appropriate for low risk food; Level 2 “Certified HACCP Food Safety Plan”, which in addition to level 1, also includes the HACCP method; Level 3 “Comprehensive Quality Management System Development” adds a documented food safety assessment of the product and its processes to the requirements of Level 1 and 2. This labeling system is widely used by buyers in Europe and other countries to ensure the safety of the products purchased.

*BRC Global Standard for Food Safety*: The Global Standard for Food Safety was developed in 1998 by the food service industry to enable suppliers to be audited by third party certification bodies against a single consistent standard – thus reducing duplication of effort and enabling the retail industry to focus activities on areas of competitive advantage.<sup>102</sup> Standards are available for food processing, storage and distribution and packaging and packaging materials.

*Conclusion*: Many buyers in Europe now require certification for food farming and/or production to ensure safety and quality of the foodstuffs. Despite the fact that these schemes are in principle voluntary, certification becomes a main criterion for acceptance of a new supplier. The selection of the adequate standard is usually determined by the buyer.

### **Testing Laboratories**

Test results are required by food producers and authorities to ensure food safety. Laboratories can provide information about chemical and microbiological purity of products and raw materials. Sampling and testing is conducted for raw material inspection, in-process inspection and the final inspection of products. The authorities performing post-market surveillance take samples from the market, which are also analyzed in laboratories.

Laboratories have the task of analyzing the composition of food products and raw materials. The analysis can include the main components of the material, and also the residues of restricted substances. Analytical methods have to be identified, verified and agreed upon for all the parameters to be analyzed.

In Indonesia the National Agency for Food and Drugs BPOM is in charge for all mandatory food testing required by Indonesian regulations. BPOM has a central reference laboratory in Jakarta and several regional laboratories in the provinces. To date BPOM laboratories only provide services related to conformity assessment for compliance to Indonesian regulations and to providing health certificates for export products. In the near future BPOM will also conduct testing in accordance with ASEAN requirements.

Private and other government laboratories provide testing services to the industry. A private laboratory performing tests on food is Sucofindo, while BBIA (Balai Besar Industri Agro), BBKK (Balai Besar Kimia dan Kemasan) and BPMBEI (Balai Pengujian Mutu Barang Export dan Impor) are government laboratories that provide tests on food products

*Certified Reference Material (CRM)*: In order to ensure traceability of test results all chemical and biological test methods shall be “calibrated” with adequate Certified Reference Materials. At present PPOMN provide pure CRM secunder (INORS), chemical and biological references, to be used for BPOM regional office laboratories or other laboratories in Indonesia and pure chemical CRM secunder for ASEAN (ARS). However, at present matrix based CRM is not produced in Indonesia, neither for chemical nor for biological reference. Therefore all CRM has to be imported at rather high prices and not many laboratories are using CRM due to the high cost. The research center for

<sup>102</sup> See more details in [www.brcglobalstandards.com/standards/food/](http://www.brcglobalstandards.com/standards/food/)

chemicals, RCChem - LIPI is designated to produce certified reference material for chemicals and is coordinating the production of CRM with selected other institutions. Once implemented, it can be expected that this program will solve the problem with CRM for chemicals. At present there is no plan to produce biological CRM in Indonesia and therefore the problems in this area will persist for the time being.

*Laboratories of BPOM:* BPOM has one central reference laboratory and 30 testing laboratories in the provinces. All these laboratories conduct food and cosmetic testing, but also testing of drug/therapeutics products, narcotics and psychotropics, household health care products, cigarettes, traditional medicines and biological products. The BPOM reference laboratory has the task of supporting the testing laboratories. The reference laboratory of BPOM has shortcomings in providing CRM and PT to its testing laboratories but is currently receiving support from PTB in order to become a producer of chemical CRM.

*BBIA:* Balai Besar Industri Agro (BBIA) is conducting tests on food products for the industry. BBIA has a well equipped laboratory but still lacks the capability of analyzing certain parameters (e.g. polyaromatic hydrocarbon, Vitamin A, D, E, B6, B12, Pentotenic acid, Nicotinamide, Folic Acid) and testing with new fast microbiological and chemical analytical methods. BBIA plans to provide proficiency tests for quality laboratories of the industry and is also selected as one future provider of chemical CRM.

*BPMBEI:* Laboratory for Quality Testing of Export and Import Goods / Balai Pengujian Mutu Barang Export dan Impor performs testing for export products. Amongst several other test services such as; testing of textile, toys, footwear, cosmetics, furniture, electric and electronic products, BPMBEI provides testing on food for various safety parameters. BPMBEI is well-equipped with measurement devices for testing food but does not provide information services. The laboratory appears not to be well-known to the food industry.

*BBKK:* Balai Besar Kimia dan Keramik (BBKK) provides testing on food grade packaging material. Testing is performed in accordance with national and EN standards. BBKK also conducts tests of heavy metals in packaging material in accordance with directive 94/62/EC. In its food laboratory BBKK can conduct testing on food for various safety parameters.

*EQI Issues:* EQI issues related to laboratories are twofold - problems to achieve traceability and lack of testing methods. Proficiency tests should be performed by all BPOM testing laboratories and also by all other food laboratories. At present, Proficiency Tests are not always regularly performed for all relevant test methods. In addition, CRM is not easily available and quite expensive and is therefore rarely used to establish traceability.

Indonesian laboratories are currently unable to perform all testing and analysis required by the European Union. For certain parameters the laboratories either lack equipment, properly trained analysts or analytical methods. For some parameters the existing facilities do not allow analysis up to the required detection limit.

*Conclusions:* Indonesian laboratories conducting food testing are confronted with difficulties to ensure the traceability of their test results. These problems arise from the fact that CRM is hardly available and relatively expensive coupled with the lack of proficiency test schemes. BPOM and BBIA are planning to produce chemical CRM within the coming years but a local producer for biological CRM is not likely to be available in the near future. BPOM and BBIA are planning to conduct more proficiency tests for food but may not be able to satisfy the huge demand for that service.

All laboratories dealing with food testing will have to extend their scope on test methods in accordance with requirements of export markets such as the European Union. Required parameters and suitable test methods will have to be identified, applied and verified

### **B.3.3. Industry Support Services**

Three organizations providing supporting services to the food industry sector have been identified:

*GAPMMI* (Gabungan Pengusaha Makanan dan Minuman Seluruh Indonesia), *MOI* (Ministry of Industry) and *BBI-MOI* (Balai Besar Industri Agro).

*GAPMMI* (Gabungan Pengusaha Makanan dan Minuman Seluruh Indonesia) was founded in 1976. The association aims to advance the Indonesian food business and hopes to create a business climate that is conducive to the growth and strengthening of the food and beverage industry through the promotion of healthy competition. *GAPMMI* aims to strengthen its members' competence in the field of food safety, processing, health and nutrition. As a business association *GAPMMI* supports its members through programs that are beneficial for its members. For instance, *GAPMMI* acts as a moderator between the food industry, the Indonesian Government and the international market as well as provides information on the food business, regulations and technology. Additionally, the association offers support and training for members regarding quality improvement and food safety. *GAPMMI* also provides the food industry with support in the fields of technology, management and international marketing.

Companies of any size in the food and beverage business and supporting industries may become members of *GAPMMI*. Other members are supplier companies (laboratory, machinery, packaging, raw materials, and food additives), exporters and importers of food products and raw materials or food distributors and retailers.

*GAPMMI* is actively supporting SMEs on individual basis and by providing discussion fora. *GAPMMI* regularly conducts information seminars on various topics (e.g. seminars on Japanese import requirements coordinated with Japanese representatives are organized several times a year).

*Mol*: The Directorate of Food and Beverage Industry of the Ministry of Industry (*Mol*) provides support to SMEs working in the fruit juice production sector. An example is a pilot project in Kuningan, West Java that supports farmers and fruit juice producers. Farmers are supported by capacity building on Good Agriculture Practices (*GAP*). Fruit processing companies are supported on fruit juice processing technology in an SME industry cluster. The support includes the provision of fruit juice processing equipment and capacity building. *Mol* works in cooperation with external consultants to enhance knowledge on best practices in fruit processing. The consultants train cluster members on processing methods for fruit juice best practices in peeling the fruit, pulping, filtration, mixing, pasteurization, filling into sterilized bottles and storage.

*BBI*: Balai Besar Industri Agro (*BBI*) conducts research on food processing and provides consultancy, training and counseling to companies in the food production sector. *BBI* is also an inspection body for the sterilization of food and inspects the temperature and time of the sterilization process. Such inspection is required for sterilization in the *HACCP* standard. *BBI* provides also *HACCP* consultancy and certification.

### **B.3.4. Regulatory Framework**

*Food Safety*: The Government of Indonesia has ratified the World Trade Organization (*WTO*) Sanitary and Phytosanitary (*SPS*) Agreement through Law No. 7/1994. In order to implement the law, specific requirements for nutrition labeling in foods in Indonesia have been established. Under Act No. 7/1996, every labels or advertisement of food must contain accurate information and the ingredients of the product. Regulation 69 provides additional requirements on food labeling and advertisement. The regulations also apply to foods claiming to contain nutrients, including energy, protein fat, and carbohydrate content as well as levels of vitamins and minerals. Nutrition labeling is also mandatory for foods that are required to be fortified or enriched with specific nutrients as required by the national legislations. The following information is required: (1) serving size; (2) number of serving per pack; (3) energy content per serving; (4) protein content per serving; (5) carbohydrate content per serving; (6) fat content per serving; (7) breakdown of the percentage of energy derived from fat, protein and carbohydrate; (8) percent of dietary allowances of nutrients; (9) amounts of other nutrients for which a claim is made; and (10) other nutrients that are considered relevant for the preservation of good nutritional status.

*Packaging:* Packaging requirements include the following: (1) free from micro-organisms and toxins harmful to the health of consumers; (2) free from any micro-organisms liable to proliferate during storage; (3) able to be kept without deterioration, stable and good commercial value during storage; and (4) a packaging process by which micro organisms are prevented from entering into the package during and after packaging process. Packing must also be sturdy and able to withstand extreme heat, high humidity, and brief periods of storage in the open. All wooden packaging and forest produce must be certified as being free from infestation by insects and fungi. Dutiable goods or restricted imports are not allowed to be packed in the same container as non-dutiable or unrestricted goods. Under Act of Food No.9/1996, any materials that is used as food package but whose impact on human health is not yet known must be examined for its safety by government authorities.

*Quality Assurance:* Quality assurance is required of any foods or beverages to be traded. All food must therefore be laboratory tested before they are circulated. Testing must be performed by a Government accredited laboratory. Government regulation of the Republic of Indonesia Number 28/2004 about Food Safety, Quality, and Nutrition provides the following requirements for internationally traded foods:

- Any food exported out of Indonesian must meet food safety requirement. The responsible ministry of agriculture and fishery can establish the safety requirements. All foods exported from Indonesia for distribution must first be tested and inspected for safety, quality, labeling requirements and nutrition.
- Any person who exports food from Indonesia must be responsible for meeting the food safety, quality and nutrition requirements in the destination country. The responsible minister of agriculture and fishery can evaluate whether the products meet the requirements of the destination country.

*Registration:* Any processed food produced domestically into Indonesia must be registered. A registration approval letter is issued by the appropriate government agency. Domestically produced foods must contain certificates describing the type of food, evaluation procedures, and the procedures for issuing the food production certificate. Processed foods that have a shelf life of less than seven days at room temperature and those imported into the country in small amounts are not subject to the registration requirements.

### **B.3.5. Case Study: Fruit Juice Company**

#### **About the Company**

PTG is one of the top producers of premium pineapples worldwide. The business was started three decades ago as a plantation in Sumatra and was later expanded into processing. 75,000 acres of prime agricultural land are devoted to the cultivation of the smooth cayenne variety of pineapple, chosen for its reliable yield of quality fruit.

From planting to harvesting typically requires a cycle of 36 months. The harvest capacity per day is approximately 15 hectares, with a yield of 70 tones per hectare. PTG exports pineapple slices, chunks, tidbits, crushed pineapple, pineapple juice concentrate and tropical fruit salad to over 50 countries - 55% of which is exported to EU countries. Most of the pineapple concentrate exported to Europe is shipped to Rotterdam. The buyers in Europe process the concentrate by blending it with pineapple concentrate from other countries to optimize parameters such as sweetness and acidity. The pineapple concentrate is also blended with other kinds of fruit juice to produce a mixed fruit juice.

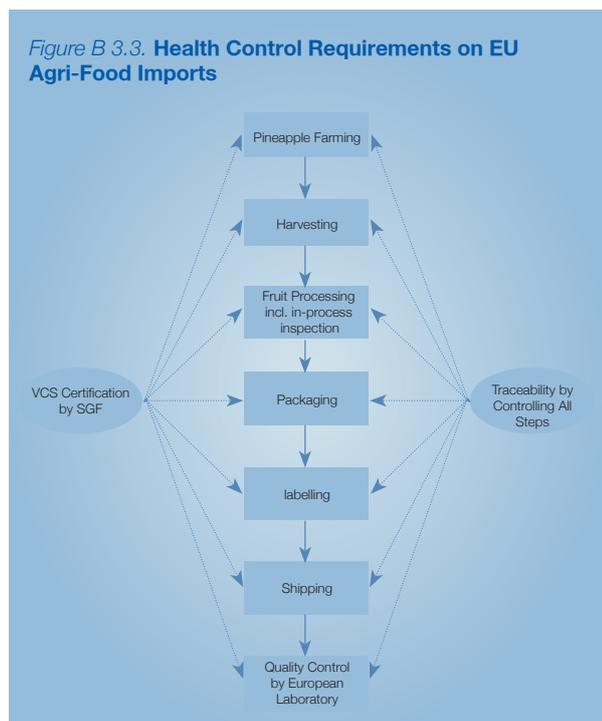
Pineapples are a labor-intensive crop, continuously harvested throughout the year. It takes 18 months to grow a pineapple until it is ready to be harvested. After picking the first fruit, the same plant will grow a second fruit within 12 months. Each plant yields only one pineapple at a time and can be used to grow two fruits in total. After that, the plant is disposed of and replaced by a new

plant. It takes over 27,000 individual plants to cover a single acre and PTG grows cassava and guava amongst the pineapple plants. The total labor force of PTG is 12,000 people.

### Fruit Processing

PTG mainly processes the harvested pineapples into canned fruit products and utilizes the remaining parts of the fruit to produce the pineapple concentrate. There are five main steps in PTG, which are selection, fruit processing, packaging, sterilization, labeling and shipping. Those are conducted in the three plants of PTG; plantation/farming, production plant and packaging plant. The fruit is washed and graded according to size. The pineapples are then machine peeled, producing cylinders of fruit. The core of these fruit cylinders will be removed and the remaining pieces are then selected, trimmed and cut. The fruit juice concentrate is produced from the inner part and the skin of the pineapple that remain after the canned fruit process. The pineapple concentrate is packaged in drums or intermediary bulk containers (1000L), labeled and shipped to Europe. The bulk container is returned from Europe for reuse.

### Quality Issues



Quality control is performed throughout the entire supply chain - from the development of improved seed varieties, through cultivation, harvesting, processing and packaging to final shipment of the finished product (see Figure B.3.3).

It is essential that each pineapple is hand-picked at the peak of ripeness and transported to the processing facility without delay. At PTG, pineapples are processed immediately after harvesting and on average are never in a holding bin for more than three hours. The fruits are visually inspected prior to processing as the quality of the final product depends first of all on the quality of fruits. One major selection parameter is the ripeness of the fruit and color is used as the main indicator of ripeness for pineapples.

The entire production process, from holding bin to sterilization, takes only 30 minutes, capturing the fruit at its

prime to avoid deterioration of the product. After processing the quality parameters to be checked are the level of sweetness, acidity, color, viscosity, and organoleptic (taste and smell). The packaging material must be of food grade quality and the suppliers have to provide certification to that effect.

PTG ensures the quality and safety of its products by controlling the entire supply chain including the farming stage. As the quality of its products depend on the quality of the harvested fruit and, to a high degree on the processing of the harvested fruit without delay, PTG incorporated the farming process into its own business. Most other fruit juice producers buy fruits from small local growers and process them often at remote facilities far away from the farms and therefore have no control over the process. .

### Market Access Requirements

To strengthen its position in the EU market, PTG became a member of the Schutzgemeinschaft der

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Fruchtsaft- Industrie e.V. (SGF)<sup>103</sup>

SGF is an industrial association that promotes industrial self-control for fruit juices in the European markets based on legal and industrial quality and safety standards. SGF is a registered association with headquarters in Germany and has partner organizations all over Europe. Buyers respect this association and accept their recommendations. SGF has implemented a voluntary control system (VCS) on quality assurance at manufacturers, bottlers and their suppliers “from the tree to the bottle and back”.

VCS audits are conducted by IRMA (International Raw Material Assurance) at fruit processors and other supply chain members. The audits on product quality and safety of its members are performed once or twice a year depending on the situation. The auditors visit the plant including farming, production plant, storage facilities and, if required, also the shipment site. The auditors also take samples for testing. If the facility has been found to be in line with the stated requirements certification is provided - almost all European buyers recognize this certificate.

#### *Laboratory Testing*

PTG is conducting some laboratory testing such as pesticide residue, heavy metal, glucose, lactose and migration substances such as plasticizers. PTG has to send its test samples to Germany, USA or Singapore because laboratories in Indonesia are not able to test all the required parameters. In addition, certificates from Indonesian laboratories are generally not recognized by the buyers.

#### *Management System Certification*

PTG is certified for the implementation of Environmental Management System ISO 14001, Social Accountability System SA 8000 and Good Agricultural Process (GAP).

### **Going Green Commitment**

PTG tries to improve its image in Europe by implementing green practices for more than the last 20 years.

*Greening the Soil:* These green practices include greening the soil by planting elephant grass, which is cut down and then mulched into the soil to replenish it. PTG also sows other plants that enrich the soil with nitrogen, potassium and phosphate – all essential nutrients for growing prime pineapples.

*Recycling Pineapple Waste:* Pineapple cultivation yields plant waste of about 160 tons/hectare. Although this organic waste is an excellent organic fertilizer, the fiber from pineapple leaves and stems is tough and requires about six months to compost. PTG found an ideal solution to this problem and is now utilizing the plant waste as cattle feed. Plans are also underway to use methane produced by the cattle to power a biogas generator.

*Soil Conservation:* Soil-erosion is a major issue in the management of large-scale plantations in tropical climates. In order to minimize erosion, PTG has been growing bamboo along the river and slope areas of the plantation since 1988 and today has the largest bamboo plantation in Indonesia with over 200 varieties of tropical bamboo.

PTG also involves its suppliers in the Going Green Program by encouraging them to avoid the use of unnecessary plastic cling-wrapping of cartons and generally reducing the amount of packaging materials used, including the re-design of cartons that are 75% the size of conventional packages.

## **B.4. Summary and Conclusions**

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103 See website of SGF: [www.sgf.org](http://www.sgf.org)

In Europe processed foods are becoming an increasingly important part of consumer expenditures as people look for more convenient ways to store and prepare food. Consumers spend 12 percent of their income on food consumption and domestic production supplies about 90 percent of the EU market. The main sub-sectors are processed fruits and vegetables, cereal-based products, processed meats and dairy products. The European Union's fruit subsector is the most dependent on foreign supplies (about one-fourth of domestic utilization). For that reason, imports of fruits tend to predominate in EU imports of processed agri-foods. Processed meat imports into the European Union have grown by an average annual rate of 13 percent a year, outpacing all other food groups by a significant margin. Nevertheless, Indonesia does not supply any meat products to the European Union because its establishments have not been approved by the European Commission for access to the market.

Indonesia's processed foods industry has steadily increased its contribution to the total output value of the Indonesian economy. Its impact on the growth and employment of other sectors has been large because of upstream and downstream linkages to primary sector and input activities and service-related industries. The commodity composition of exports is fairly evenly distributed among cereal, flour and starch preparations; vegetable and fruit preparations; and other types of food preparations. In contrast, the geographic composition of exports is highly concentrated in the ASEAN regional market. The share of exports destined for countries in Europe, the United States and Japan is small compared with the size and agri-food absorption of those markets. The European Union, for example is the world's largest market for these types of products, and Japan is the world's largest net importer of food products.

Two-way trade between Indonesia and the European Union generally takes place in different types of products. Each trading partner is therefore specializing in the types of products in which it has a comparative advantage. The opening of agri-food trade between Indonesia and the European Union could therefore involve transitional adjustment costs. About 14 of the 53 agri-foods subsectors, however, traded between Indonesia and the European Union is similar. In those cases, the companies producing those particular products will have a small labor adjustment costs and little need for restructuring.

The challenges to realizing Indonesia's export potential are concentrated in marketing difficulties and supply-side constraints of the existing agri-foods industry. Indonesia's production costs and exchange rate pass-through into export prices have been low, which has reflected favorably on the industry's international price competitiveness. Non-price factors have, however, undermined Indonesia's exports outside the ASEAN region to markets like that of the European Union. Among the most significant factors are (i) a lack of understanding of consumer tastes and preferences, and their distinction from that of Asian customers; (ii) lacking overseas networks with global supermarkets; (iii) difficulties in meeting health controls and packaging and labeling requirements; and (iv) poor infrastructure and high logistics costs.

Specific findings on the supply side are as follows:

## ■ MSE and SME Development in Farming

### • Good Agriculture Practices

The process-oriented principle that food business operators throughout the food chain have the responsibility for ensuring that food placed on the market meets the required standard of food safety is currently difficult to achieve for Indonesian MSEs and SMEs. Therefore, larger fruit processors are reluctant to cooperate with smaller farmers and they either grow the fruit on their own farms or purchase fruit pulp from outside Indonesia.

In order to achieve a significant increase in processed fruit or fruit juice originating from Indonesian farms for export it will be necessary to improve various aspects of fruit farming in Indonesia. The application of hygiene measures and GAP in all steps of primary production (farming, pre-processing, storage and transport) will be required.

### • Development of Farmer Groups

Forming farmer groups to address the challenge of implementing GAP in MSEs and SMEs appears much more feasible than by dealing with a large number of individual MSEs and SMEs. The Indonesian Ministry of Agriculture has established programs to promote the forming of farmer groups based on the Internal Control System (ICS) of IFOAM to support the application of GAP - including certification schemes.

## ■ Development of SME Food Processors

### • Good Manufacturing Practices in SMEs

According to standard regulations the production of processed food including fruit juice has to be conducted in accordance with Good Manufacturing Practices (GMP). At present the vast majority of Indonesian food producers do not apply GMP and can therefore not ensure sufficient hygiene and product safety.

### • Development of GMP Sector Strategy for SMEs

Pilot projects, such as training for SMEs, as proposed above, are single events that provide assistance to a small number of beneficiaries. The training courses, and the experiences gained from such pilot projects, could be leveraged and developed to reach a far larger target group.

## ■ Development of Food Laboratories

### • BBIA and BPMBEI

Balai Besar Industri Agro (BBIA) is conducting tests for the industry on food products. BBIA has a well equipped laboratory but still lacks the capability to analyze certain parameters (e.g. polyaromatic hydrocarbon, Vitamin A, D, E, B6, B12, Pentotenic acid, Nicotinamide, Folic Acid). The industry also demands testing with new, fast microbiological and chemical analytical methods that BBIA is currently not able to provide.

Balai Pengujian Mutu Barang Export dan Impor (BPMBEI) has instruments and facilities for food testing. However, the competence of BPMBEI to perform analytical testing of food products in accordance with international standards needs to be assessed

### • Proficiency Tests and Certified Reference Material

In chemical testing certified reference materials (CRM) and proficiency tests (PT) are used as tools to achieve traceability. In Indonesia at present the utilization of CRM is very limited due to the fact that most CRM are imported and therefore comparatively expensive. Without CRM traceability to national and international reference standard cannot be achieved.

Test results must be traceable and comparable to results provided by any other domestic or international test laboratory. It is standard international practice to conduct proficiency tests (PT) on selected parameters with a group of test laboratories that serve as indicator for traceability. The need to produce CRM in Indonesia and to conduct regular proficiency testing has already been identified in TSP I.

The Research Centre for Chemistry (RCChem) in the Indonesian Institute of Science (LIPI) has

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recently been appointed as the national metrology institute for chemical reference materials and proficiency tests in Indonesia and is supported by Physikalische Technische Bundesanstalt (PTB) of Germany. It has been decided that a number of laboratories will serve as producers of CRM and providers of PTs including BPOM and BBIA of MMAF. At present BPOM and BBIA do not have the capability to produce CRM and conduct PTs as required. BPOM should serve their local laboratories in the provinces while BBIA should serve the quality laboratories of the food processing industry

We suggest that GOI and donors' efforts to overcome existing constraints be oriented to the following types of activities (a) develop an industry strategy for extra-regional markets; (b) promote unique Indonesian products like tropical fruits and vegetable juices; (c) encourage cluster and networking development with supermarket chains; (d) MSE and SME Support and Development; and (e) develop Food laboratories capacity.

## C. ELECTRONICS



## C.0. Executive Summary

The European Union is a net importer of electronic components. The market is by far the largest of all the focal sectors, with EU imports of US\$280 billion. Despite the strong growth of the industry, demand is highly responsive to income changes, causing fairly large year-to-year growth variations. Requirements to access the EU electronics market mainly relate to (i) the International Electrotechnical Commission (IEC) regulations for safety; (ii) EC regulations on Electro Magnetic Compatibility (EMC); (iii) Restriction of Hazardous Substances (RoHS); and (iv) (WEEE) regulations for the environment.

The European Union is Indonesia's largest export market for consumer electronic products. Important export markets are Germany, Netherlands, Belgium and the United Kingdom. There is considerable diversification of exports among other important markets like Poland, France, Italy, Spain and a number of other countries in the eastern part of Europe. However, Indonesia's exports of consumer electronics are heavily concentrated in a few basic types of products.

Electronics is Indonesia's largest contributor to foreign exchange earnings from manufactured exports. It accounts for nearly one-fifth of total manufacturing exports, with consumer electronics leading industrial electronics by a two-to-one ratio. Development of the industry dates back to the 1970s when Japanese established joint ventures with Indonesian firms to access the domestic market in the period of import-substitution policies. When Indonesia adopted an export-oriented industrialization strategy in the 1980s, foreign electronics companies designated the country as one of their export bases, as a means of exploiting the low production costs in the country.

In recent years the industry has experienced strong but uneven growth. The industry's output has begun to surge again as multinational electronics enterprises relocate from China in response to rising labor costs in that country. These large output variations in the Indonesian electronics industry have impacted on the growth and employment of other sectors. The effect has been particularly large because of upstream and downstream linkages to input activities and service-related industries.

The main supply-side challenges for Indonesia's electronics industry are the international recognition of certification and testing. Electronic goods exported to the European Union must fulfill the CE-market requirement showing that the manufacturer has taken all necessary measures to ensure that the product complies with the applicable safety legislation. Although many international and

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national companies produce electronic products in Indonesia, only one Indonesian service provider (Sucofindo) is currently internationally recognized as a certification body with a supporting laboratory. The scope of products for which this institution has been accredited is also limited to 3 out of a total of 19 product groups. If Indonesia is to become internationally competitive, it must increase the number internationally recognized certification bodies. The only scheme for international recognition in the electronic industry is the Certification Bodies (CB) scheme. However, the scheme does not cover testing and certification in accordance with the EU directives for RoHS, WEEE and EMC. Indonesia is currently preparing a selected group of test laboratories and certification bodies for the CB scheme under the coordination of BSN. The successful application of the scheme would reduce the cost and time for certification.

# C.1. Introduction

## C.1.1. Objective and Coverage

The present annex on electronic equipment is one of five industry-specific annexes prepared for the study on Indonesia's Trade Access to the European Union: Opportunities and Challenges. It provides a self-contained analysis of the electronic equipment industry and its export potential in the EU market. It has three specific objectives. First, it seeks to identify Indonesia's export opportunities in the EU electronic equipment market, based on the industry's competitiveness and growth prospects. Secondly, it identifies challenges to the realization of Indonesia's export potential in terms of EU market entry requirements, export quality infrastructure (EQI), the conduciveness of trade policies and regulations, and support being provided to the industry. Finally, it points out a few general recommendations on actions that support the achievement of the industry's export potential to the EU market.

This report consists of the following parts:

- *Chapter C1* presents an overview of the electronic equipment industry in terms of its importance to the Indonesian economy and the pattern of its export development. It also covers the strengths, opportunities, weaknesses and threats (SWOT) facing the industry's development, especially as it relates to Indonesia's exports to the EU market.
- *Chapter C2* analyzes the European Union's market for electronic equipment and Indonesia's competitiveness in that market. It begins by examining the market in the European Union and assessing its growth prospects. It then examines the major factors determining Indonesia's competitiveness relative to other developing country exporters to the EU market. The chapter ends with an analysis of the relative importance of price and non-price factors in explaining Indonesia's changing market shares in the EU market, and how remedial actions addressing non-price factors could impact on Indonesia's export prospects.
- *Chapter C3* covers EU market access requirements and existing conditions in the Indonesian electronic equipment industry. It examines internal and external constraints along the value chain, especially for small and medium size enterprises (SMEs), the existing EQI system in the industry and support services being offered to enterprises, and trade policies and regulations affecting the industry.
- *Chapter C4* presents a summary of the findings on the Indonesian electronic equipment industry, and it draws on this information to recommend specific actions needed to fully realize the country's export potential in the EU market.

## C.1.2. Importance of the Industry

**Industry Coverage** – The electronics industry produces a wide range of products, about half of which are for mass market consumption like mobile phones, televisions and personal computers (PCs); the other half are embedded in manufacturing processes, information technology (IT), and transportation equipment.<sup>104</sup> Our focus is on consumer electronics, which are the products of greatest importance to Indonesia, in terms of both exports revenue and domestic production of component for multinational enterprises.<sup>105</sup> Market data for these products cover wholesale, retail and international trade.<sup>106</sup>

<sup>104</sup> Throughout this report, the term industry and sub-sector are used interchangeably and both refer to a subset of activities of the sector to which the industry belongs.

<sup>105</sup> The report covers consumer electronics under the Standard International Trade Classification (SITC) codes 775 (household-type electrical and non-electrical equipment; 761 (monitors and projectors); 762 (reception apparatus for radio-broadcasting); and 763 (sound recording or reproducing apparatus). The HS codes for consumer electronics are 8418 (refrigerators); 8422 (dishwashers); 8450 (washing machines); 8509 (electro-mechanical domestic appliances); 8519 (sound recording or reproducing apparatus); 8528 (television receivers); 8528 (reception apparatus for radio-broadcasting); and 8540 (television components).

<sup>106</sup> Wholesale and retail trade is based on the European Union's Classification of Economic Activities in the European Community (NACE), which has correspondence to the International Standard Industrial Classification of all Economic Activities (ISIC), available at <http://unstats.un.org/unsd/cr/registry/regot.asp>. The NACE (revision 1.1) code for wholesale trade in consumer electronics is 5143, and for retail trade it corresponds to 5245.

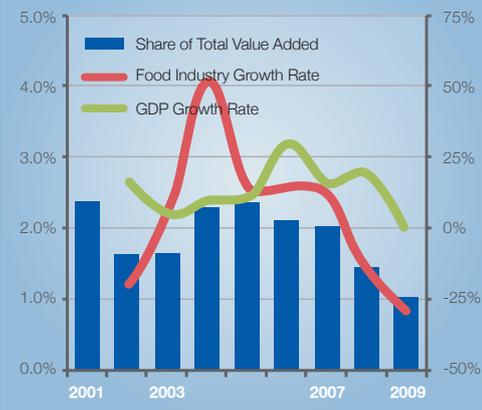
**Importance of Subcontracting** – The electronics value chain is highly dependent on Electronic Manufacturing Services (EMS), which provide components to Original Equipment Manufacturers (OEM), that is, the brand name companies. Since the early 1990s large consumer electronics manufacturers have sold off portions of their manufacturing activities in an effort to outsource to lower cost suppliers.<sup>107</sup> These subcontracting arrangements have been made possible by clearly distinct stages in the electronics value chain, and the global standardization of manufacturing processes.<sup>108</sup> OEMs are not tied to a particular location for sourcing electronics components.<sup>109</sup> Instead, global production networks farm out production to diverse geographical locations to take advantage of lower costs and thereby obtain higher margins and profits.

**Importance to Indonesia** – Electronics is the largest contributor to Indonesia's foreign exchange earnings from manufactured exports. It accounts for nearly one-fifth of total manufacturing exports, with consumer electronics leading industrial electronics by a two-to-one ratio. Within the Indonesian economy, the industry contributes nearly 6 percent to gross domestic product (GDP), a ratio that remained between 2000 and 2008. There are currently 235 electronics companies operating in Indonesia, most of which produce basic rather than cutting edge technology-based products. Some of the well-known OEMs with production bases in the country are Panasonic, Sanyo, Epson, Sharp Samsung and LG. Panasonic's latest relocation in 2010 was a lithium coin battery factor from Japan, and it plans to relocate more factories to Indonesia in the near future.<sup>110</sup> Both the Government and the private sector would like to increase the domestic content of electronics products from the OEMs. But major obstacles remain from poor infrastructure, particularly road, electricity and logistics.

Development of the industry dates back to the 1970s when Japanese companies established joint ventures with Indonesian firms to access the domestic market in the period of import-substitution policies. When Indonesia adopted an export-oriented industrialization strategy in the 1980s, foreign electronics companies designated the country as one of their export bases, as a means of exploiting the low production costs in the country. Subcontracting arrangements under these circumstances have grown as countries like China increasingly adopt the subcontracting mechanism with Indonesian

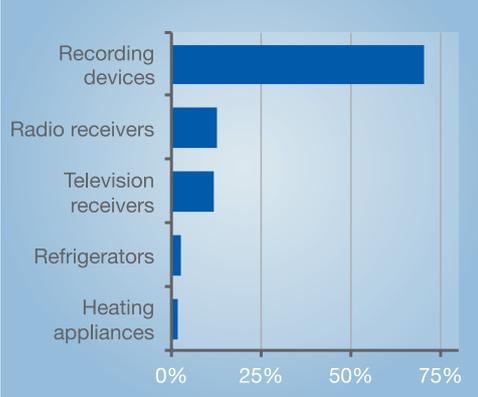
Figure C 1.1.

**Value Added of Electronics Industry**



Source: Derived from data from Badan Pusat Statistik.  
Available: <http://dds.bps.go.id>.

Figure C 1.2. Indonesia's Major Exports of Consumer Electronic Products, 2009



Note: Based on Standard International Trade Classification.  
Source: UN, COMTRADE database.

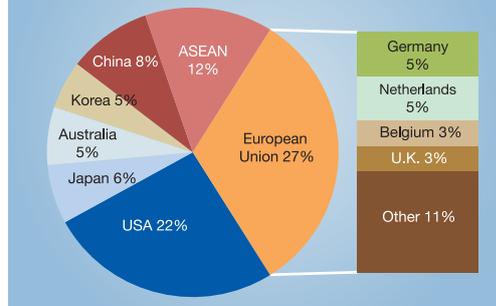
<sup>107</sup> The terms outsourcing and subcontracting are used interchangeably. Offshore activities refer to the international dimension of contract manufacturing. Technically, the terms 'slicing up the value chain' and 'production fragmentation' refer to the phase preceding subcontracting. Only after the production process has been separated into distinct activities can they be outsourced or subcontracted.

<sup>108</sup> See Estudes Conseil, "World Electronics Industries 2008-2013". April 2009. Available: [http://www.decision.eu/doc/brochures/exec\\_wei\\_current.pdf](http://www.decision.eu/doc/brochures/exec_wei_current.pdf).

<sup>109</sup> See UNCTAD, "Strengthening participation of developing countries in dynamic and new sectors of world trade: Trends, issues and policies in the electronics sector". Geneva, September 2005. Available: [http://www.unctad.org/en/docs/c1em28d2\\_en.pdf](http://www.unctad.org/en/docs/c1em28d2_en.pdf)

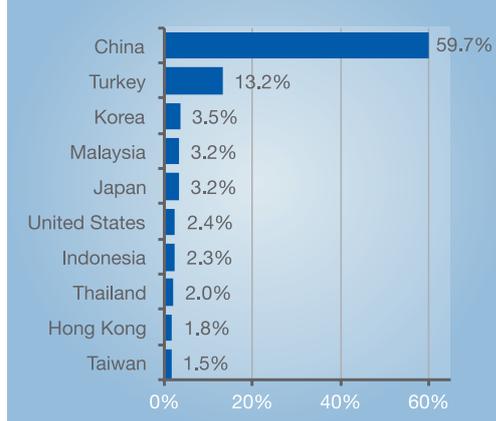
<sup>110</sup> The Jakarta Post, "Indonesia on track to become electronics production base". 28 August 2010.

Figure C 1.3. Distribution of Indonesian Consumer Electronics Exports by Major Market in 2009



Source: United Nations, COMTRADE database.

Figure C 1.4. Top Third Country Suppliers to EU Consumer Electronics Market in 2009



Note: Based on Standard International Trade Classification.  
Source: Economic Commission, Eurostat database.

Belgium and the United Kingdom. There is considerable diversification of exports among other important markets like Poland, France, Italy, Spain and a number of other countries in the eastern part of Europe. The United States is the second largest export market followed by that of the ASEAN member countries. Within the Asian region, the most important markets are the Philippines, Malaysia, Thailand, Vietnam, and Singapore for both the domestic market and transshipments to other markets.

**Major Competitors in EU Market** – The EU market for consumer electronics is dominated by China's products (Figure C1.4). Almost 60 percent of all non-EU products imports originate in China. Turkey, with 13 percent of the market, is the only other country with a significantly large market share. Although Indonesia is the seventh largest non-EU supplier of consumer electronics to the market its 2 percent market share is small.

firms to produce competitive low cost products for both the domestic and export markets.

In recent years the industry has experienced strong but uneven growth. Annual growth rates ranged from a low of -29 percent in 2009 to a high of 54 percent in 2004. More recently, the industry's output has begun to surge again as multinational electronics enterprises relocate from China in response to rising labor costs in that country. These large output variations in the Indonesian electronics industry have impacted on the growth and employment of other sectors. The effect has been particularly large because of upstream and downstream linkages to input activities and service-related industries. The multiplier effect occurs because the expansion of these other sectors generates revenue, which in turn impacts on the demand for electronics products.

**Types of Exports** – Indonesia's exports of consumer electronics are heavily concentrated in a few basic types of products. About 70 percent of exports are in the form of sound-recording and video-recording apparatus. Television and radios account for 12 percent of exports each. There is a small amount of refrigerator (3 percent) and heating units (2 percent) exported. Other minor exports are electric shavers and dishwashers.

**Major Export Markets** – The European Union is Indonesia's largest export market for consumer electronic products (Figure C1.3). Important export markets are Germany, Netherlands,

### C.1.3 SWOT Analysis

Box C1.1 summarizes the strengths, weaknesses, opportunities and threats (SWOT) of the industry. The focus of the analysis is areas where there is a need for change to ensure that Indonesia realizes its export opportunities in the EU electronic equipment market. Key issues for the industry are as follows:

- The proposed CB scheme competence is not comprehensive for all products.
- Lack of skilled workers for the electronics industry.
- Strong competition in EU market from larger suppliers like China, Korea, Vietnam and Thailand.
- Concentration in electronics products with low to mid-level technologies.

Box C 1.1. Strengths, Weaknesses, Opportunities and Threats (SWOT) of Indonesian Electronics Industry

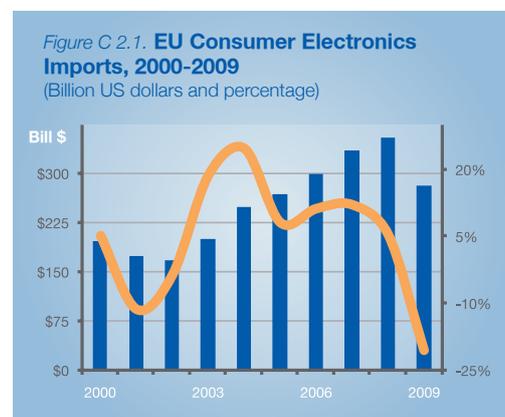
	Supply Chain Structure and Functioning	EU Market	MSEs and SMEs	Institutional Framework
Strengths	<ul style="list-style-type: none"> <li>■ Good functioning supply chains governed by international companies</li> </ul>	<ul style="list-style-type: none"> <li>■ Competitive cost structure of Indonesian firms relative to EU producers.</li> <li>■ Strong and growing EU consumer demand for electronic products in all sectors.</li> <li>■ Relatively low market access requirements for third country products.</li> </ul>	<ul style="list-style-type: none"> <li>■ SMEs are flexible and can adjust production quickly to various specifications</li> </ul>	<ul style="list-style-type: none"> <li>■ Several laboratories available and increasing capabilities</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>■ 70% of parts and components are imported to ensure compliance with regulations.</li> <li>■ Lack of skilled workers in electronic industry</li> </ul>	<ul style="list-style-type: none"> <li>■ Indonesia is not competitive relative to large EU suppliers like China, Korea, Vietnam and Thailand.</li> <li>■ Exports to EU market are largely medium-tech products lacking sophistication</li> <li>■ Indonesia lacks technological sophistication and highly skilled labor force</li> </ul>	<ul style="list-style-type: none"> <li>■ SMEs have to comply with all EU requirements but are not familiar with them</li> <li>■ SMEs do not have staff that understands EU directives</li> </ul>	<ul style="list-style-type: none"> <li>■ Proposed CB scheme competence not comprehensive for all products</li> <li>■ Unfavorable labor and infrastructure conditions in Batam EPZ.</li> </ul>
Opportunities	<ul style="list-style-type: none"> <li>■ Information for suppliers on requirements could improve capabilities</li> <li>■ Local producers could improve market share with about EU requirements for electronics and packaging.</li> </ul>	<ul style="list-style-type: none"> <li>■ Development of export strategy for EU market, targeting wider market and more high-tech products</li> </ul>	<ul style="list-style-type: none"> <li>■ SMEs could increase their market share of supplied components for export products or even export their components if they were able to provide compliant products and the required documentation</li> </ul>	<ul style="list-style-type: none"> <li>■ National laboratories can be developed to international recognition in CB scheme</li> </ul>
Threats	<ul style="list-style-type: none"> <li>■ Competitiveness of Indonesia's producers may deteriorate if prices of imported components increase and domestic sourcing is unavailable.</li> </ul>	<ul style="list-style-type: none"> <li>■ Footloose industry could readily exit if political, economic and social conditions deteriorate.</li> </ul>	<ul style="list-style-type: none"> <li>■ Competitiveness may deteriorate if market standard cannot be met</li> </ul>	<ul style="list-style-type: none"> <li>■ Possible failure to upgrade national laboratories to level of international standards.</li> </ul>

## C.2. Indonesia's Export Competitiveness in the EU Market

### C.2.1. EU Market Development and Prospects

The European Union is a net importer of electronic components. The market is by far the largest of all the focal sectors covered by this study. Imports in 2009 were US\$280 billion. However, demand is highly responsive to income changes. As a result, year-to-year growth has varied widely, from a surge of 25 percent in the value of imports in 2004 to a 21 percent contraction in 2009 (Figure C2.1). The largest EU importers are Germany, France, United Kingdom and Italy, which together account for one-half of all electronics imports into the European Union.

The top EU electronic product imports are fairly evenly distributed between mass market applications in home appliances, data processing uses, audio and video, and in industry applications for medical, automobile, defense, and telecommunications (Table C2.1). Together these 20 imports represent 85 percent of all electronics imports. Indonesia accounts for 0.9 percent of these imports, of which it primarily supplies video recording equipment (25% of total), radio and television transmitters (18%), and radio and television parts (11%).



Source: European Commission, Eurostat database.

**Table C 2.1. Top 20 EU Electronic Product Imports, Total and from Indonesia in 2009**  
(billion US\$ and percent)

HS	Product	Total		Indonesia	
		Billion US\$	% of Total	Billion US\$	% of Total
8517	Electric apparatus for line telephony	43.1	22.1%	0.04	2.6%
8541	Diodes, transistors	17.8	9.1%	0.01	1.0%
8542	Electronic integrated circuits	15.6	8.0%	0.06	4.1%
8529	Parts for radio & tv	13.1	6.7%	0.17	11.3%
8528	Television receivers & monitors	9.7	5.0%	0.13	8.8%
8525	Radio and TV transmitters	8.8	4.5%	0.27	17.8%
8544	Insulated wire, optical fibre cable	7.8	4.0%	0.02	1.3%
8504	Electric transformers	7.5	3.9%	0.14	9.2%
8536	Electrical switches, connectors	6.1	3.1%	0.07	4.9%
8516	Equipment with heating element	5.7	2.9%	0.01	0.5%
8523	Recording media	5.2	2.7%	0.01	0.6%
8501	Electric motors and generators	3.4	1.7%	0.01	0.7%
8520	Electronic recording equipment	3.3	1.7%	-	0.0%
8534	Electronic printed circuits	3.3	1.7%	0.00	0.2%
8518	Audio-electronic equipment	2.9	1.5%	0.03	2.2%
8531	Electric sound or visual equipment	2.8	1.4%	0.01	0.8%
8543	Electrical machinery nes	2.8	1.4%	0.02	1.4%
8507	Electric accumulators	2.6	1.4%	0.10	6.4%
8526	Radar, radio navigation apparatus	2.5	1.3%	0.01	0.5%
8521	Video recording apparatus	2.5	1.3%	0.39	25.6%

Source: United Nations, COMTRADE database.

There are extensive opportunities for EQI support directed at moving Indonesia from low to medium-tech products with favorable market prospects in the new EU member states of Eastern Europe to high-tech components in the high-income Western European economies. Trade compatibility between Indonesia's existing products exports and EU imports is the highest of any sector, although there are relatively fewer types of products currently exported among Indonesian exporters that match the European Union's top 1000 imported products. However, this situation can be interpreted not so much as a negative factor, but as pointing the way towards downstream opportunities in the sector.

The EU demand for consumer electronics imports has been strong, particularly in its response to changes in consumer incomes. Our estimates show that a one percent increase in real GDP of the EU market as a whole has produced a 2.4 percent expansion in consumer electronics imports. Figure C2.2 provides a visual representation of the forecast of total EU consumer electronics imports through 2015. The forecasts are based on assumptions about real GDP growth, consumer electronics prices and exchange rates taken from the International Monetary Fund's biannual projections.<sup>111</sup> They forecast GDP to grow by 1 percent in real terms in 2010 and by another 1.3 percent in 2011. After 2011 a moderate 2 percent annual real GDP growth is assumed. We assume unchanged constant euro prices for the products and an average exchange rate of US\$1.3 per euro over the medium term. Based on these projections for economic activity within the European Union, demand for -electronics imports is projected to grow by an average annual rate of 2 percent in 2010-2011, followed by a more robust growth of 4-5 percent thereafter.

## C.2.2. Indonesia's Export Competitiveness

Indonesia's competitiveness in the EU electronics market, like in other foreign markets, is largely determined by four interrelated conditions: (i) export prices relative to those of competing suppliers to the market; (ii) the magnitude and type of accessible demand; (iii) accessibility and reliability of supporting industries; and (iv) possibility of fragmentation or relocation of some or all parts of production-process activities and footloose foreign investments.<sup>112</sup>

*Export Prices:* Foreign demand for Indonesia's electronic equipment exports is determined by the rupiah-denominated price of exports. From the point of view of European buyers, that price is denominated in euros. The price differential between Indonesia's exports and those of other competitors to the EU market therefore depends on the product price in each supplying country and the cross exchange rate between the rupiah and the euro, adjusted for inflation in each country. The demand for electronic equipment exports of Indonesia is accordingly determined by both the real cross-rate of Indonesia's domestic currency relative to that of the European Union, and the foreign rupiah-denominated export price.<sup>113</sup> Macroeconomic conditions determine the real cross-rate, while industry-specific conditions in Indonesia determine the rupiah-denominated price of electronic equipment.

Figure C 2.2. EU Consumer Electronics Imports, actual 2000-2009 and forecast 2010-2015



Source: Projections by the Study Team based on econometric estimates and assumptions about economic activity from IMF, World Economic Outlook database.

111 See International Monetary Fund, "World Economic Outlook Update". July 2010. Available: <http://www.imf.org/external/pubs/ft/weo/2010/update/02/index.htm>.

112 These conditions are often referred to as the Competitiveness Diamond developed by Michael Porter, "Competitive Advantage of Nations". Free Press, 1998.

113 The real bilateral exchange rate takes the relative price of tradable and non-tradable products as an indicator of a country's competitiveness level in the foreign trade. The rationale behind this definition is that the cost differential between trading countries are closely related with the relative price structures in their economies. Mathematically, the real exchange rate,  $r$ , is defined as  $r = P_t/P_n = eP^*/P_n$ , where  $P_t$  and  $P_n$  represent the price of tradable and non-tradable products,  $e$  is the nominal exchange rate, and  $P^*$  is the international price of tradables.

**Table C 2.2. Export c.i.f. Price of Consumer Electronics of Top Suppliers to EU Market, 1999-2009**

Russia	327
Korea	372
China	403
India	404
Brazil	439
Thailand	464
Malaysia	612
<b>Indonesia</b>	<b>759</b>
Canada	1,325
U.S.A	1,404
Japan	2,490

Source: derived from data in Eurostat database.  
Note: Average of all types of exports.

markets. These price variations could reflect differences in the product composition of the two groups, as well as quality differences. The more important measure of competitiveness is the impact that those prices have had on the demand for Indonesia's exports, that is, whether changes in the price of Indonesia's exports have affected the EU demand for Indonesian exports relative to that of competing suppliers to the market. This issue is examined in the next section of this chapter.

*Industry Networking:* The development of the global electronics industry is largely driven by technology diffusion and capability development of countries like Indonesia within global production networks. In these networks, OEMs allocate, or outsource, production, marketing and distribution activities in different countries in such a way as to benefit from input and production costs, technological activities, marketing, logistic, and other differences. The networks therefore operated through a the fragmentation of activities among different countries.<sup>114</sup> This phenomenon can, of course, only occur in those instances where various phases of the production process are physically separable. While this fragmentation has had a dramatic effect on Indonesia's production, employment, exports and technological activities, the system is effectively footloose, meaning that it is independent of resources other than capital, and skilled and unskilled labor. Changes in entry or exit of activities in a country can therefore take place quickly, depending on a country's regulatory and fiscal (tax) environment, and relative factor costs of EMS located in other countries.

*Demand Conditions:* Specialization of countries in various phases of the production and distribution process leads to what is called two-way trade for a country like Indonesia. Imports of component parts may be assembled and exported to foreign markets, thereby appearing in aggregated trade

For the first of these determinants, Figure C2.3 shows the relation between changes in the real cross-rate in Indonesia and other major suppliers to the EU market and changes in their shares of the consumer electronics market. Despite Indonesia's strong currency and China's large penetration into the EU electronics market, exporters were able to maintain their share of the market. The United States suffered the largest losses in market shares, notwithstanding the declining value of the US dollar.

The industry-specific conditions affecting the rupiah-denominated price of electronic equipment are largely associated with labor and infrastructure-related costs. The cost structure of the consumer electronics industry is reflected in the nominal unit price of product exports in the industry's relatively competitive global market.<sup>114</sup> Table C2.2 shows the average export price of Indonesia and other foreign suppliers to the EU

**Figure C 2.3. Changes in Real Cross-Rates with Euro and Share of EU Electronics Market, 1999-2009**



Source: Calculated from IMF, WEO database, and EU, Eurostats.

<sup>114</sup> In a competitive market, the firm or industry as a whole will select an output level that equates its marginal cost with its export price.

<sup>115</sup> The phenomenon of fragmentation is also termed segmentation, production sharing, integrated production, outward processing, and vertical specialization.

statistics as though Indonesia is importing and exporting the same types of products. For example, the components of television receivers have the same 2-digit trade classification as the finished television products. It therefore appears as though a country like Indonesia is trading the same product, when in fact the country is importing parts and assembling them into the final product before shipping it to foreign markets.

*Conditions for Conducting Business:* Location of production activities depend on political, social and economic stability, good infrastructure, efficient export processing zones (EPZs), access to markets and inputs, and efficient regulatory procedures. The higher the technology involved in the electronics product, the higher the skill level that is needed of workers, as well as technical and managerial capabilities. More mature industries in Indonesia contain a greater proportion of local content than emerging industries, for which there is need of efficient local suppliers, service providers and institutions for training, quality testing, certification, and other EQI requirements of the industry. These EQI requirements explain why OEMs locate in medium-wage economies like Indonesia rather than low wage ones like Laos, Myanmar, or countries in Africa, where skills, capabilities and infrastructure are lacking and regulatory procedures are complex. At the same time, the global electronics industry remains highly mobile and relocation of industries from one country to another occur regularly. In Indonesia, for example, Sony Electronics Indonesia relocated to Thailand and Malaysia in 2003 because of more favorable investment environments in those countries. In another instance, Fairchild and NSC relocated their semiconductor production network from Indonesia after the Government rejected their efforts to improve production efficiency by scaling down their labor force.<sup>116</sup>

#### Box B 2.1.

### Competitive Analysis of Indonesian Consumer Electronics Industry

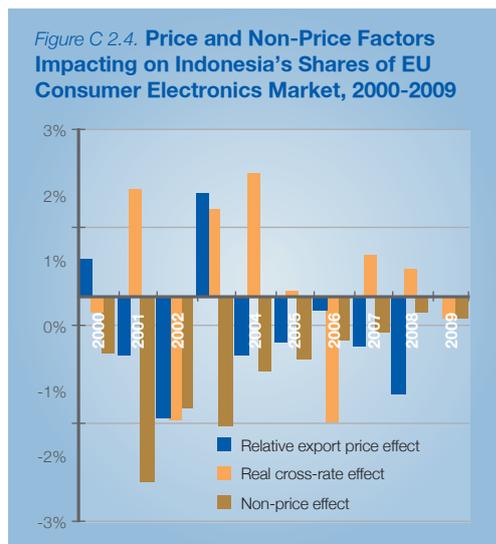
	Strengths	Weaknesses
<b>Pricing Conditions</b>	<ul style="list-style-type: none"> <li>Stable real cross-rate with euro.</li> <li>Low-cost manufacturing for mass products.</li> <li>Relatively skilled labor.</li> </ul>	<ul style="list-style-type: none"> <li>Real effective devaluations by competing suppliers to EU market.</li> <li>Low-cost EMS in other countries.</li> <li>Poor infrastructure and high logistics costs.</li> </ul>
<b>Demand Conditions</b>	<ul style="list-style-type: none"> <li>Fragmentation of consumer electronics industry.</li> <li>Increasing use of EU-consistent environmental standards.</li> <li>Large market for medium to low end consumer electronics in eastern EU countries.</li> </ul>	<ul style="list-style-type: none"> <li>Dominance of medium to large enterprise companies.</li> <li>Difficult for SMEs to provide EMS activities.</li> <li>Limitations of institutions providing training, quality testing and certification.</li> <li>Lack of technically-specialized skilled workers.</li> </ul>
<b>Industry Networking</b>	<ul style="list-style-type: none"> <li>Growing proportion of local content for consumer electronics.</li> <li>Strong supporting relationships and subcontracting in industrial complexes</li> </ul>	<ul style="list-style-type: none"> <li>Dependence on multinationals.</li> <li>SME lack networking with OEMs.</li> <li>Weak linkages to trucking, logistics, warehousing, software, banking and finance.</li> </ul>
<b>Conditions for Conducting Business</b>	<ul style="list-style-type: none"> <li>Strong competitive environment</li> <li>Knowledge about requirements in environmental legislation.</li> <li>Adequate disseminate information about business regulations.</li> </ul>	<ul style="list-style-type: none"> <li>Price-based competition for similar products, especially China.</li> <li>Footloose industry could easily exit country if political, economic and social conditions change relative to other countries with EMS activities.</li> </ul>

Source: Based on Competitive Diamond analysis (see Michael Porter, "Competitive Advantage of Nations". Free Press, 1998).

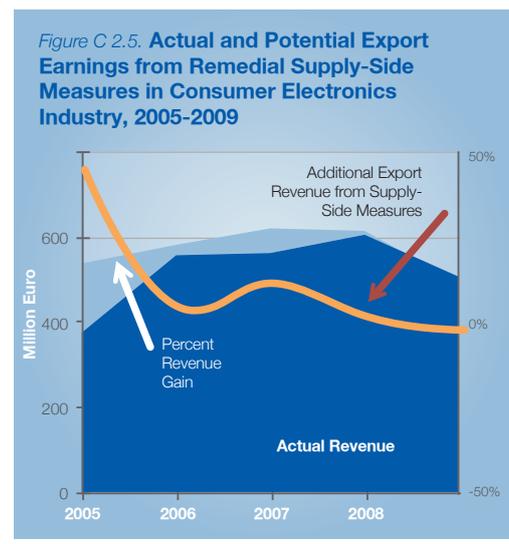
116 Anne Booth, "The Indonesian Economy in the Nineteenth and Twentieth Centuries: A History of Missed Opportunities". Basingstoke: Macmillan and New York: St. Martin's Press, 1998.

### C.2.3 Opportunities to Regain Market Shares

Indonesia's share of the EU consumer electronics market has improved modestly in recent years, although considerable scope for improvement remains. Our estimates of the export relationship for the Indonesian consumer electronics industry suggest that there has been a reduction in the earlier negative effects from non-price factors associated with supply impediments like EQI limitations (Figure C2.4).<sup>117</sup> The improvement in supply conditions is likely to be associated with the increased influence of multinational enterprises in the country, and improved EQI conditions in the components industry. The extent of possible outsourcing will depend on four factors: (i) the technical divisibility of production processes, mentioned in the previous section; (ii) the factor intensity of the production process and the extent to which Indonesia has a cost-advantage in those factors; (iii) the technological complexity of each process and whether Indonesian EMS are capable of providing that technology; (iv) the value to weight ratio of the product, which for consumer electronics tends to be high; and (v) the regulatory and fiscal (tax) policies and the Government's industrial strategy.<sup>118</sup> The last factor is particularly important since large shifts in government policies and regulations have affected investment interests of both local and multinational firms. In addition to China, Vietnam is seen as an attractive location because of the government's business friendly attitude. One study on the Indonesian consumer electronics industry has found that firms considered Vietnam as a favorable prospective destination for fragmentation because of its relatively strong investment incentives, infrastructure, and access to market.<sup>119</sup> The Indonesian electronics sector therefore faces stiff competition from possible EMS activities in other countries, a situation that underscores the need to establish a favorable investment climate supported by a strong EQI system. In the past, Indonesia encourage local electronics consumption through import-substitution policies aimed at local contents requirements. However, the requirements were abandoned in the mid-1980s as part of a series of deregulation measures introduced at that time. At present, the Government offers some incentives to electronics consumption by abolishing the luxury sales tax for electronics goods. However, the investment climate remains fairly neutral compared with the more positive investment incentives offered by countries like Malaysia and Thailand.



Source: Derived from Study team estimates.



Source: Estimated from Study team calculations

117 Non-price factors (including but not exclusively EQI) are equal to the changes in exports not explained by income and price changes. That's the way it was calculated and that's normal the way that the intercept is interpreted. However, in our case, we broke down the non-price factors further by including a trend variable to capture secular changes that could or could not be associated with EQI. Because of the attribution uncertainty, it was decided not to report the secular (trending) estimates.

118 For details, see Sanjaya Lall, Manuel Albaladejo and Jinkang Zhang, "Mapping Fragmentation: Electronics and Automobiles in East Asia and Latin America". QEH Working Paper Series – QEHWPS115. Working Paper Number 115, 2004.

119 See Siwage Dharma Negara, "Fragmentation of Electronics and Textile Industries from Indonesia to CLMV Countries". IDE-JETRO, Japan. Available: [http://www.eria.org/pdf/research/y2009/no7-3/h\\_Chapter%205%20Siwage%20\(edited-fany\).pdf](http://www.eria.org/pdf/research/y2009/no7-3/h_Chapter%205%20Siwage%20(edited-fany).pdf)

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In recent years, export price movements have eroded the industry's position in the EU market, largely because of China's more competitive prices in that market. The exchange rate pass-through on the demand for Indonesia's exports produced mixed results, with market share gains in half of the years and losses in the other. To the extent that Indonesia could have overcome its supply impediments on exports and maintained its share of the EU consumer electronics market that it reached at the beginning of the decade, foreign exchange revenue from the industry would have been nearly 10 percent higher in 2009 than was actually achieved (Figure C2.5). Without those EQI constraints and assuming that all other price and non-price factors were the same as other suppliers, Indonesia's exports would increase by the same proportion as those of EU imports for consumer electronics, that is, the same as our forecast of around 4.5 percent annual growth of EU consumer electronics imports from third countries.

## C.3. Challenges for Realizing Indonesia's Export Potential

### C.3.1 EU Market Access

The key elements of the regulatory environment for the electronics industry are as follows:

- Requirements in the electronics sector concern environmental and health-related problems associated with growing volumes of post-consumer waste from electrical and electronic equipment (EEE). These issues have resulted in significant environmental policy initiatives and in 2003 the Economic Commission adopted two directives to address these concerns. The first is the Directive on Waste Electrical and Electronic Equipment (WEEE); and the second is the Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS). The WEEE and RoHS Directives aim to substantially reduce the amount of electrical and electronic equipment entering incinerators and landfills and to eliminate the hazardous substances these products contain. The European Community does not impose the requirements of its directives directly on companies or consumers, but rather on its member states. As a consequence, it is the responsibility of the member states to implement policies to ensure compliance with the directives. They set a minimum standard and member states can choose to implement more restrictive policies. If member states fail to implement the minimum standards, the Commission can impose penalties on them.
- For exporting countries like Indonesia, it is more effective and cost-efficient to combine adjustment to external requirements for exported EEE with adjustment to domestic needs for sound national collection and management of EEE waste, a process that extends further than mere recycling.
- For GSP status, the material used in the manufacturing process cannot exceed 30 percent of the ex-works price of the product for the non-originating materials under the rules of origin.

For Indonesian exporters shipping electronics products to the EU markets, the following are the specific market access requirements:<sup>120</sup>

1. *Tariffs*: The ad valorem tariff average of 2.8, ranging from 0 to 14 percent; the average tariff rate ranges from 0 to 7 percent and averages 1.7 percent.
1. *Specific requirements* on technical standards covering (a) essential requirements; (b) conformity assessment; (c) CE marking; (d) market surveillance; (e) marketing requirements; and (f) rules of origin.
  - (a) *Essential requirements*: The essential safety requirements protect against risks arising from the use of the electrical equipment and risks which may be caused by external influences on the electrical equipment, including not just electrical ones but also mechanical, chemical and any other risk (noise, vibrations and others).<sup>121</sup>
    - Harmonized standards: The technical specifications to meet the essential requirements are not described in the Directive. However, products are presumed to conform to

#### Box C 3.1.

#### EU Market Access for Electronics

Tariffs	MFN	GSP
Average	2.8	1.7
Maximum	14.0	7.0
Minimum	0.0	0.0

#### Product-Specific Requirements:

- Essential requirements.
- Conformity assessment.
- CE marking.
- Market surveillance
- Marketing requirements
- Rules of origin

Sources: Tariffs provided by European Commission, Trade Directorate; requirements from EC Helpdesk.

120 The following information draws on material available at the European Commission's Helpdesk for developing countries. Available: <http://exporthelp.europa.eu>.

121 See [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_02v001/eu/auxi/eu\\_stdlovol\\_annex1\\_d2006\\_95.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_02v001/eu/auxi/eu_stdlovol_annex1_d2006_95.pdf)

the essential safety requirements where they have been manufactured in accordance with:

- The harmonized standards drawn up by the European Committee for Electrotechnical Standardization (CENELEC) on the basis of the essential requirements set in the Directive;<sup>122</sup>

In the absence of harmonized standards, the international rules issued by the International Electrotechnical Commission (IEC) are applicable.<sup>123</sup>

The manufacturer may construct the product without applying harmonized or international standards but, in such a case, the product will not benefit from presumption of conformity and the manufacturer must include in the technical documentation a description of the solutions adopted to meet the essential safety requirements.

- (b) *Conformity assessment:* Before a product is placed on the EU market, the manufacturer must ensure and declare conformity of the electrical equipment with the provisions of the Directive in order to affix the CE marking. The manufacturer must affix the CE marking to each product and draw up a written declaration of conformity.<sup>124</sup> The manufacturer must compile the technical documentation (covering the design, manufacture and operation of the product) which enables to assess whether the electrical equipment complies with the requirements of the Directive. This documentation, together with a copy of the declaration of conformity, must be kept at the disposal of the competent national authorities for inspection purposes for a period of 10 years from the date of manufacture of the product. The contents of this documentation are detailed in Annex IV to the Directive<sup>125</sup> Where neither the manufacturer nor his authorized representative are established within the EU, the importer or the person first placing the product on the EU market is responsible for making available the technical documentation.
- (c) *CE Marking:* All electrical equipment marketed in the EU must be provided with a CE conformity marking, as depicted in Annex III to the Directive, which symbolizes the conformity of the equipment with the essential requirements. CE stands for *Conformité Européenne*, a French term that can be literally translated into English as *European Conformity*. It must be affixed on the product, on the packaging, the instructions for use or the guarantee in a visible, easily legible and indelible way before being placed on the market.<sup>126</sup> The Directive provides for procedures and sanctions established by the Member States for cases where the CE mark has been affixed unduly. European directives under CE marking are applicable for the European Union. Several technical regulations are compatible with international technical regulations such as the Low Voltage (73/23/EEC), which is based on internationally IEC standards. These standards are equivalent to standards used in other countries like the UL standards of Underwriters Laboratories, which are used in the United States.
- (d) *Market surveillance:* Each Member State establishes authorities to be responsible for checking that products placed on the market meet the requirements of the applicable directives and that the affixing and use of the CE marking is correct. Market surveillance can be done by testing products, checking administrative and technical documentation and visiting factories. Products complying with the Directive enjoy free circulation within the EU. However, in case a Member State finds that the CE Marking has been affixed unduly, the manufacturer or his authorized representative established within the EU must make the product conform to the essential safety requirements. Otherwise, the Member State

<sup>122</sup> For details, see <http://www.cenelec.eu/Cenelec/Homepage.htm>

<sup>123</sup> See <http://www.iec.ch/>

<sup>124</sup> [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_02v001/eu/auxi/eu\\_stdlovol\\_annex3\\_d2006\\_95.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_02v001/eu/auxi/eu_stdlovol_annex3_d2006_95.pdf)

<sup>125</sup> See [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_02v001/eu/auxi/eu\\_stdlovol\\_annex4\\_d2006\\_95.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_02v001/eu/auxi/eu_stdlovol_annex4_d2006_95.pdf)

<sup>126</sup> See [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_02v001/eu/auxi/eu\\_stdlovol\\_annex3\\_d2006\\_95.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_02v001/eu/auxi/eu_stdlovol_annex3_d2006_95.pdf)

must restrict or forbid the placing on the market of this product, or even remove it from the market.

- (e) Marketing requirements for electrical and electronic equipments: In order to prevent the production and disposal of hazardous waste and to promote reuse, recycling and other forms of recovery of such waste, the placing on the European Union market of electrical and electronic equipment (EEE) is subject to the following requirements:
- Restriction of hazardous substances (RoHS): Electrical and electronic equipment as well as electric light bulbs and luminaires in households placed on the market after 1 July 2006 must not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE) in amounts exceeding the set of maximum concentration values: (i) 0.01 % by weight in homogeneous materials for cadmium; and (ii) 0.1 % by weight in homogeneous materials for all other substances.
  - Waste electrical and electronic equipment (WEEE): Directive 2002/96/EC of the European Parliament and of the Council establishes the manufacturers and importers (termed “producers” under the Directive) responsibility regarding WEEE management, specifically referred to the following aspects:
    - The design and production of EEE must facilitate reuse and recycling of WEEE
    - EEE placed on the market must be appropriately marked with the symbol shown in Annex IV to Directive 2002/96/EC in order to facilitate its separate collection.<sup>127</sup> Where necessary, the symbol may be printed on the packaging, on the instructions for use and on the warranty.
    - Importers must set up individual or collective systems for the collection, treatment and recovery of WEEE and meet the recycling targets established by the Directive.
    - When placing EEE on the market, importers must provide for a guarantee for the financing of the collection, treatment, recovery and sound disposal of waste arising from their products.
    - Importers must provide information for users and treatment facilities on the reuse and treatment for new EEE within one year of placing it onto the market.
    - Importers are required to register with the competent authority appointed by the Member State and have data reporting obligations relating to the amount and categories of EEE put on the market and relevant levels of recycling achieved.
  - (f) Rules of Origin Applicable to GSP Status: In electronics, the material used in the manufacturing process should not exceed 30 percent of the ex-works price of the product for the non-originating materials.

### C.3.2 Value Chain Analysis

Large multinational companies dominate the Indonesian electric and electronic equipment sector. Approximately 70 percent of all components are imported and the main value addition is achieved by assembling in Indonesia. Packaging and certain components and parts such as cables and plastic boards are supplied by Indonesian manufactures.

The value chain of the sector relies on a network of dependable parts and components suppliers, each expected to ensure the compliance of all supplied products and material. Relevant EQI issues are the international IEC regulations for safety,<sup>128</sup> the European EMC regulations on Electro Magnetic

127 See [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_02v001/eu/auxi/eu\\_spweee\\_annex4.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_02v001/eu/auxi/eu_spweee_annex4.pdf)

128 See [www.iec.ch](http://www.iec.ch)

Compatibility<sup>129</sup>, RoHS<sup>130</sup> and WEEE<sup>131</sup> environmental regulations. All electric and electronic equipment designed for cooling or freezing, which use refrigerant gas (ammoniac and fluorinated hydrocarbon), must comply with the Montreal Protocol Regulation CE 2037/2000. At present Indonesian producers of parts and components for the electric and electronic equipment industry face difficulties in fulfilling those requirements and in providing the required records and compliance certificates. These companies are usually only able to produce “simple” components like plastic parts. The more sophisticated components like electronic components or mechanical components need a higher level of competence in research and production, which remains limited in Indonesia. These limitations are also related to the lack of qualified workers in the electronic industry in Indonesia.

Electronic products provided by local producers (OEM) often have difficulties in fulfilling EC safety and environmental regulations. Thus, local laboratories providing testing within the CB scheme would support these companies in achieving the quality required by international buyers.

In summary, the relevant quality parameters in electric and electronic equipment production are (i) design in compliance with technical specifications, (ii) compliance of technical and environmental requirements for all components, (iii) final inspection of product, (iv) product packaging and (v) product approval and marking. The following section describes how and where companies must deal with these requirements in the production process.

### C.3.2.1 Electronics Production Process and EQI

The following chart presents the value chain including the testing and inspection elements of the export quality infrastructure. Figure C3.1 illustrates the general process in electric and electronic equipment production and the relevant key quality checkpoints.

#### Step 1 – Design

*Process Description:* The design process aims to create a new product that fulfills customer demands and is in compliance with applicable regulations. The design phase is of utmost importance to ensure that all applicable requirements on safety, environmental aspects, packaging and labeling are taken into account as well as the availability of required components and the cost involved in production.

*EQI Issues:* During the design phase four major issues related to quality, safety and environment have to be considered: IEC standard requirements regarding safety, RoHS and WEEE requirements on environmental issues and EMC for electromagnetic compatibility.

While designers are usually quite familiar with safety and EMC aspects they are recently forced to take environmental issues more into consideration. To be in compliance with the EU RoHS directive the design of electronic equipment using hazardous substances should be avoided. To be in line with the EU WEEE directive any design should also take into account the dismantling and recovery of components and materials for potential re-use and recycling. Through specific design features or manufacturing processes, producers should not prevent waste electrical and electronic equipment from being reused. These standards and regulations are discussed in detail below.

*Conclusions:* The design phase is of utmost importance to ensure that all applicable requirements on safety (IEC standards), electromagnetic compatibility (EMC), environmental aspects (RoHS and WEEE) and requirements on packaging and labeling may be fulfilled.

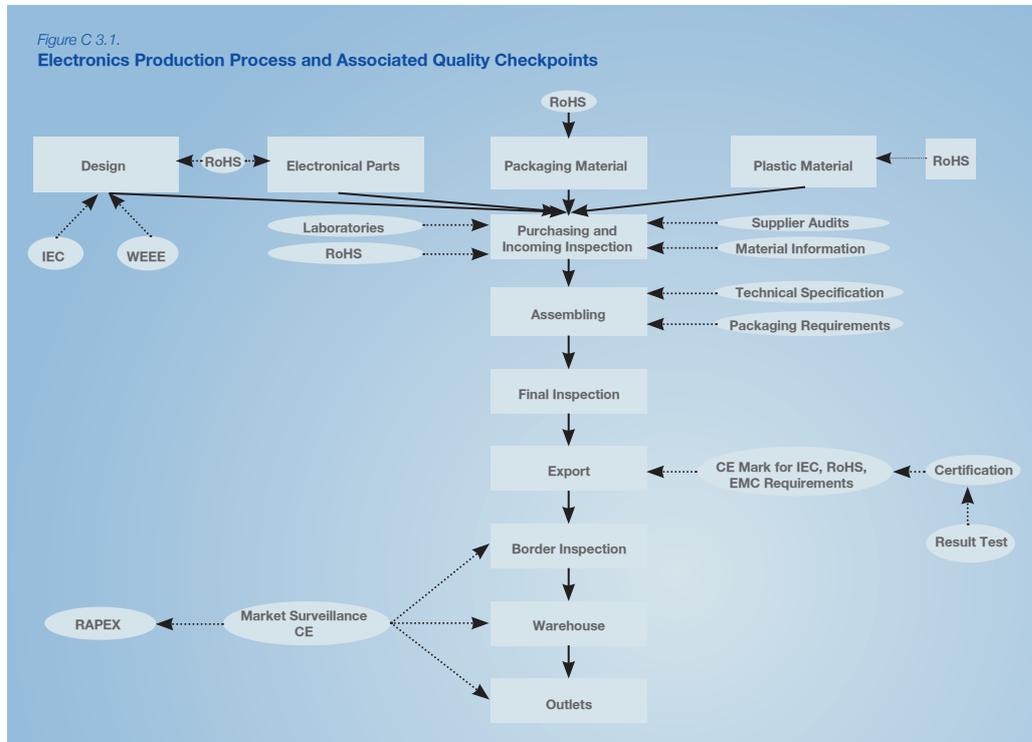
#### Step 2 – Purchasing

*Process Description:* During the purchasing process all components and materials as well as packaging material required for the assembly of the product are purchased.

129 For information see directive 2004/108/EC on the approximation of the laws of the Member States relating to the electromagnetic compatibility

130 For more information see directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment

131 For more information see directive 2002/96/EC on waste electrical and electronic equipment (WEEE)



*EQI Issues:* In the purchasing phase, in order to be in compliance with RoHS, it has to be ensured that the raw material and components purchased fulfill IEC safety requirements and do not contain hazardous substances. To achieve this suppliers that can provide test results and Material Safety Data Sheets (MSDS) on the material and components must be selected. Supplier audits are conducted to allow producers to verify that the supplier undertakes the correct quality management and assurance measures. In some cases, producers include clauses in their contracts and agreements with suppliers to ensure that they control adherence to standards.

Suppliers of packaging material are also expected to provide all the required information on packaging material. The aim is to control the entire supply chain to ensure that the specifications of all materials and components are met.

In cases where suppliers are not in a position to provide all the required test results and MSDS on the materials and components the producer of electric and electronic equipment must conduct all the required tests and analyses during incoming inspection.

*SMEs:* SMEs supply material and components as well as packaging material for the final product. Information on EQI issues and technical regulations are provided by the buyer.

*Conclusions:* Purchasing plays an important role with regard to quality, safety and environmental specifications of products and packaging. Non-conforming raw materials will result in non-compliant end products. Electronic companies try to monitor and control the supply chain to ensure conformity with all product and packaging specifications.

### **Step 3 – Incoming Inspection**

The level of effort required to undertake incoming inspections of raw material and components for production depends to a large extent on the reliability of suppliers and their capability to provide the required records and documentation on material and components supplied. All producers try to limit incoming inspection efforts to a minimum in order to save cost. Therefore, it is common practice to select and supervise suppliers that can ensure the desired quality including safety and environmental issues and provide the required documentation. For materials and components purchased from

such suppliers incoming inspection efforts are reduced to a visual check and count combined with an evaluation of the documentation provided. Occasional sampling and testing may be conducted as a mean of supplier evaluation. In cases when supplies have to be purchased without the required documentation, the producer is obliged to conduct an extensive incoming inspection and testing in accordance with accepted sampling methods. The sampling must be performed using valid statistical methods and the subsequent tests on safety and environmental issues may even require destructive analyses resulting in total loss of the samples.

#### **Step 4 – Assembly**

*Process Description:* During the assembly phase materials and components are assembled to produce the final product. In-process quality control steps are required, particularly with regard to electrical safety.

*EQI Issues:* During assembly, in-process control has to be performed at all relevant or critical phases. Particular attention has to be paid to areas with high voltage components and earthing Quality management systems such as ISO 9001 are often implemented and maintained to achieve reliable process control. During assembly no particular control measures are applied with regard to EMC and environmental aspects (RoHS & WEEE) as these issues have been considered and controlled during design, purchase and incoming inspection.

*Conclusion:* Quality aspects are controlled in assembly according to a quality plan that defines the required control and test methods at relevant steps in the process. Quality management systems (usually based on ISO 9001) are applied to ensure that all elements of quality planning, testing and recording are properly applied.

#### **Step 5 – Final Inspection and Packaging**

*Process Description:* Final inspection is the last step in the value chain before the product is packed and shipped. During final inspection the performance of all the required functions of the product are checked according to specifications. Tests concerning electrical safety and environmental compliance are not usually performed as these aspects have been covered in earlier stages. The products are then packed and supplied with user manuals.

Packaging material is divided in three categories (a) sales packaging or primary packaging, (b) grouped packaging or secondary packaging, (c) transport packaging or tertiary packaging. For exports to the European Union the EU directive 94/62/EC on packaging and packaging waste is applicable. The EU directive concerns the management of packaging and packaging waste with a first priority on the prevention of packaging waste. Additional fundamental principles of the directive are the reuse of packaging, recycling and other forms of recovering packaging waste and, hence, the reduction of the final disposal of such waste. To facilitate collection, reuse and recovery including recycling, packaging must indicate the nature of the packaging material(s) used. Packaging must bear the appropriate visible marking on either the packaging itself or on the label.

*EQI Issues:* During the final inspection the appearance and all the desired functions of the product are checked according to specifications. Tests with regard to electrical safety and environmental compliance are usually not performed as these aspects have been covered in earlier stages. The packaging material must ensure that the product cannot be damaged. For export into the European Union the packaging material must comply with EU directive 94/62/EC on packaging and packaging waste

*Conclusions:* Final inspection does not require extended testing since all relevant aspects concerning safety and environmental issues have been completed in earlier phases of the production process.

#### **Step 6: Placing the Product on the Market**

*Process Description:* Before placing any electric and electronic equipment on the market the

producer is obliged to demonstrate the compliance of the equipment with all applicable regulatory requirements. This process requires type approval on design and finished product, compliance of components and materials used, marking of the product and packaging material.

*EQI Issues:* Before placing a new product on the EU market all applicable requirements of regulations have to be fulfilled. These requirements apply to importers and also to producers within the European Union. The most important regulations are described in the following sections.

### **C.3.2.2 Safety Standards**

Low voltage electrical equipment to be placed in EU markets has to be in compliance with the requirements of directive 2006/95/EC to ensure the safety of persons, domestic animals or property<sup>132</sup>. The directive covers products such as electrical appliances, lightning equipment, electric wiring, appliance couplers and cord sets, and electrical installation equipment.

The Member States have to ensure that only products that have been constructed in accordance with good engineering in safety matters may be placed in the market. The CE conformity marking must be affixed by the manufacturer or his representative in the European Union to the electrical equipment and/or packaging or guarantee certificate. The CE marking is explained below.

The main elements of the safety objectives for electrical equipment designed for use within certain voltage limits include:

- The equipment and its components must be made in such a way that they can be safely assembled and connected
- Persons and domestic animals are protected against the danger of physical injury or other harm which might be caused by direct or indirect contact
- No danger can be caused by temperature or radiation
- Persons, domestic animals and property are protected against non-electrical dangers caused by the electrical equipment
- Sufficient insulation
- The electrical equipment must be resistant to mechanical and non-mechanical influences (such as environmental conditions) in such a way that no persons, domestic animals and property could be endangered
- The electrical equipment shall not be a danger in the event of foreseeable overload.

The technical specifications to meet these requirements are not described in the Directive itself. However, products can be assumed to conform to the directive when they have been manufactured in accordance with the harmonized standards of the European Committee for Electro-technical Standardization (CENELEC)<sup>133</sup>. In the absence of harmonized standards, the international rules of the International Electro-technical Commission (IEC)<sup>134</sup> can be applied.

### **C.3.2.3 Marketing Requirements for Electrical and Electronic Equipment**

In order to prevent production and disposal of hazardous waste and to promote reuse, recycling and other forms of recovery of such waste the European Union has established two directives; (RoHS) on the restriction of hazardous substances and (WEEE) waste electrical and electronic equipment. Equipment falling under these directives are: large household appliances (such as refrigerators, washing machines, dish washers, cooking, microwaves, and air conditioners); small household appliances (such as vacuum cleaners, irons, toasters, coffee machines); IT and communication

<sup>132</sup> The following is derived from directive 2006/95/EC of the European Parliament and the Council. In this directive low voltage electrical equipment (and components to be incorporated into other equipment) is defined in Directive as with a voltage rating between 50 and 1000V for alternating current and between 75 and 1500V for direct current

<sup>133</sup> See [www.cenelec.eu](http://www.cenelec.eu)

<sup>134</sup> See [www.iec.ch](http://www.iec.ch)

equipment (such as computer, printer, notebooks, facsimile machines, telephones, cellular phones; consumer equipment (such as radio, television sets, and video recorders); lightning equipment; electrical and electronic tools (such as drills and saws); toys; medical devices; monitoring and control instruments (such as smoke detectors and thermostats); automatic dispensers (such as drinks machines and ATMs).

Restrictions of hazardous substances (RoHS<sup>135</sup>): The objective of this directive is to restrict the use of hazardous substances in electrical and electronic equipment and to contribute to the protection of human and animal health and the environment. This directive was adopted as a complementary measure to the WEEE directive to minimize the waste by restricting the use of hazardous substances. The protection shall be achieved by environmentally sound recovery and disposal of equipment. Household electrical and electronic equipment and electric light bulbs and luminaries placed on the market shall not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE) in amounts exceeding 0.01 percent by weight for cadmium and 0.1 percent by weight for all other substances.

Waste electrical and electronic equipment (WEEE)<sup>136</sup>: The amount of WEEE generated in the European Union is growing rapidly. The content of hazardous components in electrical and electronic equipment is of major concern during the waste management phase. The main purpose of this directive is the prevention of waste electrical and electronic equipment (WEEE) and, in addition, the reuse, recycling and other forms of recovery of such wastes to reduce the volume of waste to be disposed. The directive encourages the producer at the design stage to consider the reuse, repair, possible upgrading, disassembly and recycling of the product. Producers shall not prevent WEEE from being reused.

Importers must set up individual or collective systems for the collection, treatment and recovery of WEEE and meet certain recovery targets. The recovery rate targets depend on the product categories and are in the range of 70 percent to 80 percent. Importers must provide a guarantee when placing a product on the market showing that the WEEE management will be financed and that the producers have clearly marked their products. Importers must provide information for users and treatment facilities on re-use and treatment latest one year after placing the new product on the market. Importers also have to register with the competent authorities and have to adhere to data reporting obligations related to the amount of EEE put on the market and the level of recycling achieved.

#### **C.3.2.4 Labeling for Household Appliances**

Household appliances marketed in the European Union must comply with the general labeling requirements of the Council directive 1992/75/EEC. All refrigerators, ovens, washing machines, freezers, water heaters, and hot water storage appliances, lighting sources and air conditioners have to be accompanied by a label and a fiche. The label conveys information on the energy efficiency of the model. The information must include data on the manufacturer and the model of appliance, the energy efficiency class, average consumption in kWh/year, specific data according to the type of appliance and the noise level. The label has to be supported by an information fiche. This fiche has to provide basic data relating to the particular model of appliance and must be included in all product brochures. The responsibility to provide the label and the fiche lies with the manufacturer, importer or authorized representative in the European Union.

<sup>135</sup> The following is derived from Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

<sup>136</sup> The following is derived from Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE)

### C.3.2.5 EMC Directive

The EMC directive sets the essential requirements to ensure equipment complies with an adequate level of electromagnetic compatibility. Electromagnetic compatibility means that a piece of equipment functions satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to other equipment in that environment.

The equipment must be designed and manufactured to meet two protection requirements: (1) the electromagnetic disturbance generated by the product must not exceed the level above which radio and telecommunications equipment cannot operate and (2) the product has a level of immunity to electromagnetic disturbance to be expected, which allows it to operate without unacceptable degradation of its intended use.

Compliance of the equipment with these requirements must be demonstrated by a conformity assessment. This conformity assessment must take into account all normal intended operating situations. The manufacturer has to establish technical documentation providing evidence that the product conforms to the requirements of this directive. The manufacturer must hold this documentation available or representative for at least ten years after the product was last manufactured. The manufacturer or its representative must also provide a declaration of conformity. The manufacturer must ensure that the products are all manufactured in accordance with the technical documentation.

The technical documentation has to be presented to a notified body for assessment. The notified body reviews the technical documentation to establish whether the documentation properly demonstrates that the requirements of the directive have been met. If the product is in compliance, the notified body issues a statement confirming the compliance of the product.

The technical documentation must include a description of the apparatus and evidence of compliance with the standards and the statement from the notified body. The declaration of conformity must include a reference to the directive, identification of the apparatus, identification of the manufacturer or representative, reference to the specifications, date and signature of responsible person.

### C.3.2.6 CE Marking

The CE mark affixed on the product is the manufacturer's or importer's declaration on conformity with the European Union regulation.<sup>137</sup> The marking does not provide information on the origin and does not mean that the product was manufactured in the European Union. CE stands for *Conformité Européenne*, a French term that can be literally translated into English as European Conformity.

If the CE marking is affixed to a product the competent authorities must assume that the product meets the essential safety requirements of the directive(s) and the product can therefore freely circulate within the European Union.

CE marking applies to most products in the European Union. All electrical equipment marketed in the European Union must be provided with a CE conformity marking, which attests the full conformity of the product with the relevant directives ( Low Voltage (73/23/EEC), EMC (89/336/EEC), RoHS (2002/95/EC) and WEEE (2002/96/EC) ). If conformity is established, the CE marking must be affixed to products before they are placed on the market.. If the CE mark is placed on the product it means that the product is safe and its safety has been verified.

To affix the CE marking on the product the manufacturer has to provide a conformity declaration and technical documentation. The conformity declaration has to include information on the identification of the product and the manufacturer or representative, reference to the directives and to standards or other technical documents. If a notified body must be involved in the process, the body has to be named in the declaration. The technical declaration must include the product identification, technical description of the product, directions for handling and use of the product, design and drawings, test

<sup>137</sup> Council Decision 93/465/EEC lays down the conditions for the usage of the CE mark.

reports and examination results. This documentation, together with the declaration of conformity, must be kept available for inspection by the competent authority for a period of ten years after the product was last manufactured.

The process to achieve the CE mark documentation includes the following steps: (1) identification of all applicable directives and standards, (2) conformity assessment by evaluating the product against the requirements of the directive(s) and standard and recording of the results, (3) preparation of the technical documentation, (4) preparation and signing the declaration of conformity and (5) affix the CE marking.

The CE marking is not a marketing tool and the information on conformity is solely meant for the authorities and not for the consumer. Market surveillance authorities are responsible for verifying whether a product placed on the market meets the requirements of the European Union directives. The authorities can examine the self-declaration and the technical documentation and can also take samples. If the assessment of the product results in a decision that a product does not comply with the requirements, measures can be taken against the manufacturer or distributor. Such measures may include the banning of the product, a product recall, a warning notice and substantial fines.

### C.3.2.7 Post Market Surveillance

Information on dangerous products can come from market surveillance of the member states and from the producer or distributor. EU member states have to perform market surveillance in their countries. They have to ensure that only products that conform to EU requirements are sold on the market. Appointed inspectors perform market surveys in outlets and warehouses to verify compliance of the product with all composition, packaging and information requirements.

### C.3.2.8 Testing Laboratories

There are several laboratories in Indonesia that can provide testing on electric and electronic equipment.

*B4T:* B4T (Balai Besar Bahan dan Barang Teknik)<sup>138</sup> provides testing in accordance with (1) IEC standards for low voltage appliances, (2) EMC requirements and (3) RoHS requirements. At present B4T is able to test TV sets, irons, pumps, self-ballast lamps and TV components for IEC requirements. Recently B4T installed a new EMC laboratory and provides testing to the requirements of EMC standard. B4T is also able to test heavy metals for RoHS. However, testing of polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE), which is also required for RoHS testing, has to be subcontracted to other laboratories.

*BPMBEI:* The laboratory BPMBEI (Balai Pengujian Mutu Barang Export dan Impor) provides testing in accordance to IEC standards for self-ballast lamps for general lighting service and dry-cell batteries.

*Sucofindo:* Sucofindo provides testing for household goods (vacuum cleaners, electric irons, washing machines, kitchen machines, water heaters, hair and skin appliances, refrigerators, air conditioners, water pumps, and electrical fans) and for INST (plugs, socket outlets and switches).

*BARISTAND-MOI:* (Balai Riset dan Standardisasi-Ministry of Industry) in Surabaya conducts testing on certain elements of the CB scheme in cooperation with B4T.

*Balai Besar Teknologi Kekuatan Struktur B2TKS- BPPT:* The Center for technical structure testing B2TKS of BPPT (Badan Pengkajian dan Penerapan Teknologi) conducts RoHS testing.

*Proficiency tests:* Inter-laboratory proficiency testing is a tool to establish traceability among the test results of laboratories and ensures that tests conducted in different laboratories lead to the same results within defined parameters. Therefore, proficiency tests are an important tool for quality assurance in laboratories.

<sup>138</sup> See [www.b4t.go.id/](http://www.b4t.go.id/)

B4T is conducting proficiency tests on selected methods for the laboratories of other service providers and the industry in Indonesia. In order to ensure traceability to international laboratories it is required that B4T participates in international proficiency tests to ensure its own reference results.

### **C.3.2.9 IEC System for Conformity Testing and Certification of Electrical Equipment**

The International Electro technical Commission (IEC) is the international standards and conformity assessment body for all fields of electro-technology. The IEC System for Conformity testing and Certification of Electro-technical Equipment and Components (IECEE) operates the certification bodies scheme, better known as the CB Scheme. The system aims to facilitate international trade in electrical equipment by setting up a mechanism of international recognition of National Certification Bodies (NCBs), turning these into a convenient choice for manufacturers and other potential users of their services.

The CB scheme is the only internationally recognized scheme for safety of electrical equipment used in homes, workshops and similar locations. The scheme allows the reciprocal recognition of test results among all participating certification bodies. The products are tested to IEC standards with provision for supplementary testing for national differences. The National Standards of the member country must be reasonably harmonized with the corresponding IEC Standards for which participation in the CB Scheme is desired.

Advantages of the IECEE CB Scheme are:

- The company can select and deal with one NCB of their choice
- More rapid testing and certification
- More universal product recognition
- Acceleration of Product Acceptance
- Reciprocal recognition in participating certification bodies
- Direct acceptance by Authorities in many countries
- Direct acceptance by Retailers and Buyers
- Increased market opportunities
- Lower prices for certification and testing in Indonesia
- Faster product movement from factory to markets

The scope of the IECEE CB scheme includes 19 product categories such as information technology and electronic equipment, household equipment, medical equipment, lighting, EMC and Photovoltaic. Household appliances, office and IT equipment and electronics / entertainment account for 60 percent of certifications.

The NCB (National Certification Body) is responsible for recognizing and/or issuing CB Test Reports (CBTR) and CB Certificates. A National Certification Body (NCB) is a certification organization that grants nationally recognized conformity certificates for electrical products. To be accepted as a member of the CB Scheme, a NCB must meet specified requirements with regard to its internal quality system and technical competence. Experts from NCBs already recognized in the CB Scheme will assess each NCB applying for membership.

A CB Testing Laboratory (CBTL) is a laboratory recognized in the CB scheme to conduct testing and issue CB test reports in one or more product categories under the responsibility of the identified NCB(s). CBTLs may operate in the scheme for different NCBs with which they are associated.

The laboratory shall either be an integral part, (such as a department, division, branch or subsidiary) of that issuing and recognizing NCB, or be under the complete technical and legal control of that issuing and recognizing NCB, or have a written agreement with that issuing and recognizing NCB clearly outlining the commitment, duty and responsibility of both parties to follow these rules. The competence of the testing laboratory has to be demonstrated by assessment.

Samples of the product are taken and assessed for conformity by the Certification Body (NCB) and tested by the CBTL in accordance with IEC standards. The sampling must be representative the

entire product family. The test report will be evaluated by NCB, a decision made about conformity, and a certificate of conformity granted (CB Test Certificate) for each product represented by the sample. This certificate allows the company to label its product with the national mark i.e. SNI in Indonesia.

A company that would like to export its products would then contact a CB in the destination country i.e. Germany. The CB there will issue a certificate based on the documents (CB certificate and test results) in a very short time, which will allow the company to use the national mark of the destination country (i.e. Germany).

ASEAN is now implementing an IECEE CB scheme based on an ASEAN sectoral agreement on electrical and electronic products – ASEAN EE MRA and ASEAN harmonized electrical and electronic equipment regulatory regime (AHEEERR). AHEEERR will start on the 01.01.2011. The objective of the AHEEERR is to come to a production-based control scheme in the ASEAN single market for electric and electronic products.

### C.3.2.10 Indonesian Situation

Under the coordination of the BSN, Indonesia is currently preparing a selected group of test laboratories and certification bodies for the CB scheme.

Sucofindo was the first Indonesian laboratory (CBTL) and certifier (NCB) listed by IECEE in 2009 for the scope INST (plugs and socket outlets, switches) and HOUS (vacuum cleaners, electric irons, washing machines, kitchen machines, water heaters, hair and skin appliances, refrigerators, air conditioners, water pumps and electric fans).

Pusat Pengujian Mutu Barang (PPMB) and the laboratory BPMBEI have already been assessed and will shortly be listed for LITE (self-ballast lamps) and BATT (dry cell batteries).

The product certification body LSPRO of PUSTAN (Pusat Standardisasi Nasional) in the Ministry of Industry is currently preparing for the CB scheme and will seek assessment as NCB with the laboratories Baristand Surabaya and B4T Bandung as CBTL for the scope of LITE (self-ballast lamps), HOUS (water pumps and irons) and TRON (audio, video) before the end of 2010.

Three other laboratories, namely BSMTP-LIPI (Pusat Penelitian Sistem Mutu dan Teknologi Pengujian) and laboratories of the private companies Polytron and Panasonic are also participating in Indonesia's set up of a CB scheme network.

*Conclusions:* The main issue on the supply side is the international recognition of certification and testing. Electronic goods exported to the European Union have to fulfill the CE requirements, which require certification and various tests. Although many international and national companies produce electronic products in Indonesia, only one Indonesian service provider (Sucofindo) is internationally recognized at present as certification body and supporting laboratory. The scope of products for which this institution has been accredited is limited to three product groups (out of 19). Indonesia has an urgent need to increase its number of certification bodies and laboratories with international recognition. The only scheme for international recognition in the electronic industry is the CB scheme. Under the coordination of BSN, Indonesia is currently preparing a selected group of test laboratories and certification bodies for the CB scheme. The successful application will reduce the cost and time of certification. Currently multinational service providers such as SGS, Intertek, Bureau Veritas, Loyds, TÜV Rheinland, TÜV Nord, and TÜV Süd with branches in Indonesia serve the industry with testing and certification since they are EU recognized notified bodies. Due to the fact that these multinational service providers do not operate their own laboratories in Indonesia they have to use existing laboratories of their respective groups in other Asian or European countries. This constellation leads to comparatively long processing time and high cost.

### C.3.3 Industry Support Services

There are several government and private sector institutions supporting the Indonesian electronic industry. The Ministry of Industry supports the companies with training and information dissemination. The National Standardization Agency (BSN) develops national standards, mostly based on or adopted from international standards. However, some Indonesian standards SNI are based on international standards but modified to specific Indonesian conditions and requirements, and certain standards are developed entirely new. Furthermore, research centers such as B4T, universities, and other R&D institutions develop technologies and standards.

In the electronic industry the supply chain is controlled by the large international companies, which control the value chain from the beginning to the end. The information on quality, safety and environmental issues related to the products are conveyed to their suppliers by these large companies who forward the required information to their own suppliers. Sometimes the large companies keep contact, not only with its direct suppliers, but with the whole supply chain to ensure the specifications of the material purchased.

There are two associations for the electronic industry in Indonesia, the Indonesian Electronic and Electrical Household Appliances Industrial Association GABEL (Gabungan Industri Elektronika dan Alat-Alat Listrik Rumah Tangga) and the Association of Electric Goods and Services ABE (Asosiasi Perusahaan Jasa dan Barang Teknik Elektronika). Neither associations maintain websites as tools for information sharing and do not appear to be very active.

*B4T:* Balai Besar Bahan dan Barang Teknik (B4T) is an industrial research center of the Ministry of Industry and provides services for the industry and the Government on testing, calibration, technical inspection, certification, technical training and research. B4T has good relationships with the electronic industry and provides services such as conducting tests on electronic products and components, providing training for competence enhancement on technical standards and testing methods, delivering dissemination seminars and supporting BSN in developing national standards SNI.

B4T conducts testing of televisions, irons and pump devices based on international standards such as IEC, EMC and RoHS. The industry can use this service to fulfill requirements of the local Indonesian market and for internal quality control. B4T aims to become internationally recognized as CBTL within the CB scheme. The Indonesian Government utilizes the testing services of B4T for the testing of products for market surveillance.

B4T provides training, workshops and socialization seminars for the industry on technical standards and participates as an information source in many events. B4T also provides training on testing of electronic products to the technical personnel of companies that have their own quality laboratories. Such training also includes testing on safety parameters and hazardous substances. B4T cooperates with private and government owned testing laboratories for quality assurance of electronic products by conducting proficiency tests for testing methods.

*Conclusions:* B4T and other organizations involved in CB scheme can play an important role in the dissemination of information to companies for export purposes.

### C.3.4 Case Study of Electronic Manufacturer

PT Supplier Electronic Indonesia (SEI) is an Indonesian plastic injection molding manufacturer that was established in 1980. The company changed name many times; the current name is used since 2003. The company, which has 600 employees, is now one of the big players in the Indonesian injection molding industry.

SEI processes plastic granules (injection molding) as raw material to become plastic parts for its customers. SEI customers are large electronic and automotive companies such as EPSON, LG, Toshiba, Toyota, Daihatsu, Yamaha, Suzuki, Kawasaki and KMK Plastic, whose products are

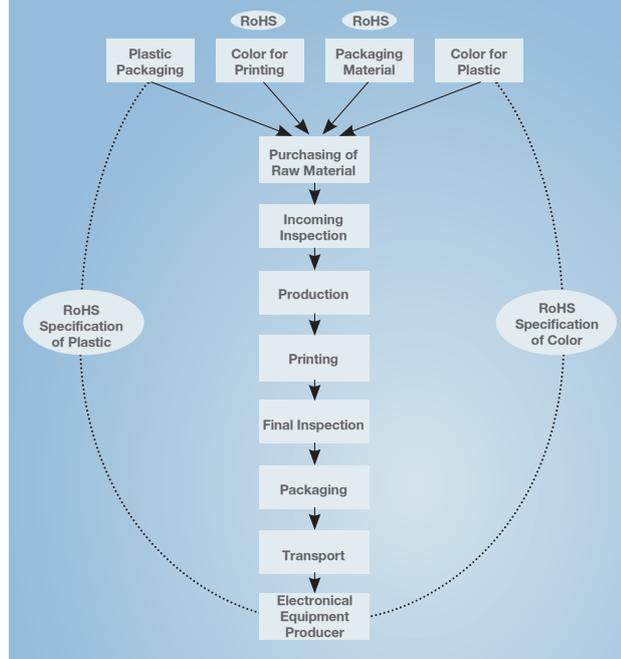
exported to Europe and other destinations. There are two major manufacturing activities in SEI, which are injection molding and painting. The production processes are shown in Figure C3.2.

**Injection Molding:** Injection molding produces parts from both thermoplastic and thermosetting plastic materials. Material is fed into a heated barrel, mixed, and forced into a mould cavity where it cools and hardens to the configuration of the mould cavity. After a product is designed, moulds are made from metal, usually either steel or aluminum, and precision-machined to form the features of the desired part.

**Printing and Painting:** SEI applies paint and printing on the surface of plastic parts by spray painting, silk screening and pad printing.

Figure C 3.2.

#### Process Flow Chart in PT Supplier Electronic Indonesia



#### C.3.4.1 Quality Assurance

The quality policy of SEI is always to be one step ahead of its competitors by producing in accordance with industry standards and by continuously enhancing the quality of the products at competitive prices and to fulfill the diverse range of customers' ever increasing requirements. The management policy was developed in order to maintain continual customer satisfaction as the main priority with a commitment to constantly strive for the highest quality. The policy is also intended to achieve individual staff satisfaction at all levels to ensure that "quality" is inherently built into every process. As part of this management policy good housekeeping should be maintained at all times. Quality Management System ISO 9001 and Environmental Management System ISO 14001 are implemented in the company. SEI conducts laboratory testing for impact tests, composition of material and tensile strength.

#### C.3.4.2 Traceability in the Supply Chain

Compliance with the Restriction on Hazardous Substances (RoHS) directive is the most important requirement of their customers in relation to export to Europe. Figure C3.2 shows that the avoidance of hazardous substances has to be ensured in the purchasing process. All raw materials purchased and used in the products have to be in accordance with RoHS specifications. SEI ensures that by putting this requirement into each purchasing contract.

EPSON, the largest customer of SEI, controls compliance with RoHS requirements in two ways: they perform supplier audits with SEI and they approve the plastic and color suppliers of SEI. EPSON conducts audits at SEI every six months of the quality management system, environmental performance, RoHS, safety management system, and social accountability. In addition, EPSON also ensures that SEI's suppliers are traceable and follow EPSON standards. EPSON requires SEI to cooperate only with those suppliers that have been approved by EPSON such as Dow Chemicals. The RoHS requirements also have to be ensured for packaging material used by SEI products that are exported directly to the European Union.

In addition, SEI performs tests on RoHS requirements every six months even though the customer does not request them. SEI usually subcontracts its external RoHS testing to Sucofindo or Sentra Teknologi Polymer of BPPT.

#### **C.3.4.3 Lesson Learned from SEI's Experience**

The best way to ensure compliance with specifications is to control the entire supply chain. Electronic assembly companies must ensure compliance with the requirements of the destination countries. The companies achieve this by controlling their suppliers. Therefore, the capability of manufacturers producing plastic and electronic components, which meet the stringent specifications and performance requirements of the electronics industry such as RoHS, create an important competitive advantage. The suppliers to the electronic assembly companies become a part of the controlled supply chain and have also to control their own suppliers.

A system has to be established to ensure traceability throughout the entire supply chain. Good cooperation, knowledge sharing and clear communication of requirements to the supplier have to be maintained and become part of the system.

### **C.3.5 Regulatory Framework**

*Government Strategy:* The Government has not developed a vision and strategy for the electronics industry. Instead, it relies on fiscal and non-fiscal incentives to promote the industry. The existing -policies include measures that were expected to promote the competitiveness of Indonesia electronic industries including:

*Fiscal Incentives:* Fiscal incentives are covered under Commercial Ministry Decree No. 137/PMK.011/2008. Incentives are provided for the following: (a) industries with Pioneer Status, i.e., high technology companies; (b) infrastructure-related industries; (c) industries involved in the preservation and protection of the environment.

*Non-Fiscal Incentives:* Non-fiscal incentives are also covered under Commercial Ministry Decree No. 137/PMK.011/2008 for (a) quality control services facility; (b) laboratories facility; (c) credit schemes; and (d) standard and certification (Standar Nasional Indonesia(SNI)).

*Export Processing Zone (EPZ):* EPZ's in Indonesia are concentrated in two main areas: (a) the Kawasan Berikat Nasantara KBN on the outskirts of Jakarta; and (b) an area in Batam Island in the Riau Islands Province of Indonesia. The Batam EPZ was developed with investment mainly from Singapore. The most important industry located there is that of electronics, followed by precision parts. Although its location provides the Batam EPZ with a large potential for investment in consumer electronics, it suffers from legal uncertainty, labor issues, and poor infrastructure. Labor issues relate to the problems with the minimum wage, severance pay and labor unions, while infrastructure conditions are poor in the areas of road quality and electricity.<sup>139</sup> These constraints make competing areas in nearby countries more attractive, notably, the Iskandar Development Region (IDR) in South Johor, Malaysia, as well as Vietnam and China.

139 See Wong Poh Kam and Ng Kwan Kee, "Batam, Bintan and Karimun – Past History and Current Development : Towards Being A SEZ". Asia Competitiveness Institute, National University of Singapore, August 2009. Available: [http://www.spp.nus.edu.sg/aci/docs/research\\_outputs/BBK\\_Past\\_History\\_and\\_Current\\_Development\\_Towards\\_Being\\_A\\_SEZ\\_24Aug09.pdf](http://www.spp.nus.edu.sg/aci/docs/research_outputs/BBK_Past_History_and_Current_Development_Towards_Being_A_SEZ_24Aug09.pdf)

## C.4 Summary and Conclusions

The European Union is a net importer of electronic components and imports US\$280 billion worth of electronics products annually. Year-to-year variations in imports have, however, been large because of their large responsiveness to income changes. Requirements to access the EU electronics market mainly relate to (i) the International Electrotechnical Commission (IEC) regulations for safety; (ii) EC regulations on Electro Magnetic Compatibility (EMC); (iii) Restriction of Hazardous Substances (RoHS); and (iv) Waste Electrical and Electronic Equipment (WEEE) regulations for the environment.

The European Union is Indonesia's largest export market for consumer electronic products. Within that market, Germany, Netherlands, Belgium and the United Kingdom are the largest imports. Although there is considerable diversification of the types of products imported by EU member countries, Indonesia's exports remain heavily concentrated in a few basic types of products. Nonetheless, electronics is Indonesia's largest contributor to foreign exchange earnings from manufactured exports. It accounts for nearly one-fifth of total manufacturing exports, with consumer electronics leading industrial electronics by a two-to-one ratio. Development of the industry dates back to the 1970s when Japanese established joint ventures with Indonesian firms to access the domestic market in the period of import-substitution policies. When Indonesia adopted an export-oriented industrialization strategy in the 1980s, foreign electronics companies designated the country as one of their export bases, as a means of exploiting the low production costs in the country.

In recent years the industry has experienced strong but uneven growth. The industry's output has begun to surge again as multinational electronics enterprises relocate from China in response to rising labor costs in that country. These large output variations in the Indonesian electronics industry have impacted on the growth and employment of other sectors. The effect has been particularly large because of upstream and downstream linkages to input activities and service-related industries. The main supply-side challenges for Indonesia's electronics industry are as follows:

- **Laboratories for Electrical Safety (CB scheme):** The main issue on the supply side is the international recognition of certification and testing. Electronic goods exported to the European Union have to fulfill the CE requirements which require certification and various tests. The only scheme for international recognition in the electronic industry is the CB scheme. Indonesia is currently preparing a selected group of test laboratories and certification bodies for the CB scheme. The current preparation does not cover the entire CB scheme but is limited to a selected group of product categories.
- **Laboratories for RoHS and EMC:** Electronic goods exported to the European Union have to fulfill the RoHS and EMC requirements, which require certification and various tests. Testing and certification in accordance with the EU directives for RoHS, WEEE and EMC are not covered in the CB scheme. At present Indonesian laboratories are not capable of providing comprehensive testing in accordance with these directives.
- **Laboratories for Packaging:** For export to the European Union packaging must comply with the EU directive 94/62/EC on packaging and packaging waste. It contains provisions on the prevention of packaging waste, on the re-use of packaging and on the recovery and recycling of packaging waste. To facilitate these provisions, the total concentration levels of lead, cadmium, mercury and hexavalent chromium present in packaging material, or packaging components, shall not exceed 100 parts per million by weight. In order to ensure that these requirements are met laboratory testing is required. It appears that Balai Besar Kimia dan Kemasan (BBKK) faces difficulties in conducting these analyses with the required detection limit (lowest concentration to be detected), especially for hexavalent chromium.

**Proficiency Testing:** Inter-laboratory proficiency testing is a tool to establish traceability among the test results of laboratories and should ensure that tests conducted in different laboratories lead to the same results within defined parameters. Therefore, proficiency tests are an important tool for quality assurance in laboratories. B4T is conducting proficiency tests on selected methods for Indonesian laboratories of other service providers and industry. However, B4T identified the need to extend its services to the sector to include new product types.

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In view of these challenges, the study team can suggest that GOI and donor support actions be oriented towards the following broad action areas: (i) strategy and action plan for consumer electronics industry; (ii) support for industry's upgrading to more sophisticated production activities; (iii) export processing zones; (iv) EU-ASEAN/Indonesia trade enhancement impact; and (v) testing laboratories for electro and electronic companies.



## D. FURNITURE



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## D.0. Executive Summary

The European Union has a fast growing market for furniture. Demand for third country imports of furniture has expanded by an average of 8 percent a year in the last decade, and it is expected to accelerate to 9 percent a year over the coming decade. The main requirement for EU market access is the regulation that all wood-products will be required to be accompanied by information about the origin and legality of the wood contained in the product. This regulation will come into effect at the end of 2012 under the Forest Law Enforcement Governance and Trade (FLEGT)

The Indonesian furniture industry has an opportunity to improve its presence in two market segments of the European Union. The first is ready-to-assemble furniture for the low-end market, which is composed of low-price products suitable for mass consumption; the other is artisanal furniture made of solid wood, which is destined for the high-end market. Medium to large size enterprises have the production and networking capacity needed to fabricate ready-made furniture, while smaller producers have the skills and know-how to make traditional and artisanal furniture. Using those capabilities to expand exports to the EU market in a substantial way will require that the industry and the Government adopt measures aimed at overcoming existing constraints, especially in the area of export quality infrastructure (EQI). To date, those constraints have been especially detrimental to Indonesia's competitiveness relative to large furniture suppliers like China, Vietnam and Malaysia, as well as major producers within Europe like Germany, Italy and Denmark.

The challenges to realizing Indonesia's export potential are largely concentrated in supply-side constraints of the furniture industry. Production costs and exchange rate pass-through into the export price of Indonesia in the EU market have, at times, significantly impacted trade. However, on average, that impact has been less than expected with competitors like China and Vietnam. Instead, it is non-price factors that have consistently undermined Indonesia's exports to the EU market, a situation that has lowered buyer perceptions about Indonesian furniture quality, design and delivery reliability.

Non-price constraints on Indonesia's exports can be grouped into four categories: (1) supply-chain weaknesses in both internal and external production processes affecting quality levels; (2) the large number of micro and small scale enterprises (MSEs) operating in the industry that lack networking capabilities able to provide direct export services to foreign markets; (3) weak institutional support

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from both business organizations, and the Government's lack of a well-defined strategy and action plan for the industry; and (4) EU market access challenges under the FLEGT, which could be facilitated by the successful negotiation of a Voluntary Partnership Agreement between Indonesia and the European Union.

Efforts to remedy these impediments will require concerted action on three fronts: (i) quality and design improvements in the production process; (ii) marketing efforts to improve buyer perceptions and accessibility to Indonesian furniture; and (iii) strengthening support for the furniture industry. Compliance with new regulations concerning legality and with market expectations concerning sustainability are also a topic to be addressed.

# D.1 Introduction

## D.1.1. Objective and Coverage

The present Annex on wood-based furniture contributes towards the study on Indonesia's Trade Access to the European Union: Opportunities and Challenges by providing a self-contained analysis of the industry and its export potential in the EU market. It has three specific objectives. First, it seeks to identify Indonesia's export opportunities in the EU furniture market based on the industry's competitiveness and market growth prospects. Secondly, it identifies challenges to the realization of Indonesia's export potential in terms of EU market entry requirements, export quality infrastructure (EQI), the conduciveness of its trade policy, and support provided to the industry. Finally, it points out a few general recommendations on actions that support the achievement of the industry's export potential to the EU market.

The annex consists of the following parts:

- *Chapter D1* presents an overview of the furniture subsector in terms of its importance to the Indonesian economy and the pattern of its export development. It also covers the strengths, opportunities, weaknesses and threats (SWOT) facing the subsector's development, especially as it relates to Indonesia's exports to the EU market.
- *Chapter D2* analyzes the European Union's furniture market and Indonesia's competitiveness in that market. It begins by examining the furniture market in the European Union and assessing its growth prospects. It then examines the major factors determining Indonesia's competitiveness relative to other developing country exporters in the EU market. The chapter ends with an analysis of the relative importance of price and non-price factors in explaining Indonesia's changing market shares in the EU market, and how remedial actions addressing non-price factors could impact on Indonesia's export prospects.
- *Chapter D3* covers EU market access requirements and existing conditions in the Indonesian furniture industry. It examines internal and external constraints along the value chain, especially for small and medium size enterprises (SMEs), the existing EQI system in the industry and support services being offered to enterprises, and trade policies and regulations affecting the industry.
- *Chapter D4* presents a summary of the findings on the Indonesian furniture industry, and it draws on this information to recommend specific actions needed to fully realize the country's export potential in the EU furniture market.

## D.1.2. Importance of the Industry

Wood-Based Manufacturing Activities: Furniture is part of the wood and wood-based products sector, which consists of a range of products generally classified according to degree of processing or value added to the products within the industry (see Figure D1.1).<sup>140</sup> At the lower end of the value added scale, Indonesia mainly produces industrial roundwood, veneer and plywood panels. Industrial roundwood alone accounts for over one-half of the total volume of low-processed, non-furniture wood products in Indonesia.<sup>141</sup> These semi-processed products are closely linked to the country's resource endowment and are increasingly governed by forest management policies and regulations. In moving up the value chain, the importance of resource endowments are superseded by labor cost factors and Indonesia's endowments of skilled labor.

The furniture industry is composed of craft-based firms and large volume enterprises. The proliferation of ready-to-assemble furniture has stimulated the development of mass producing furniture companies targeting large local and export low- to medium-price markets. Indonesia's solid wood furniture manufacturers supply important niche market segments for high-end products. Mass

<sup>140</sup> Throughout this report, the term industry and sub-sector are used interchangeably and both refer to a subset of activities of the sector to which the industry belongs.

<sup>141</sup> Based on data available from United Nations Food and Agriculture Organization (FAO). Available: <http://www.fao.org/forestry/country/57025/en/idn/>

production of furniture requires relatively low skills levels and provides smaller value to the consumer than the traditional and artisan furniture obtained from Indonesian craftsmanship. Traditional Indonesian furniture is usually made of teak and tends to be intricately ornamented. There is also a wide range of modern furniture being produced from local tropical woods, for example, bamboo, rattan and teak.

### Growing Importance of Furniture Industry:

Indonesia's furniture industry has been one of the fastest growing manufacturing activities in the country. In the last decade it has expanded at an average annual rate of 21 percent, far surpassing the 15 percent average growth of country's overall manufacturing activity (Table D1.1). Moreover, while the furniture industry has steadily grown, the value added of wood and other wood product activities to the economy has fallen in all but one year. As a result, the furniture industry's contribution to the total value added of wood-based manufacturing activities has grown from less than one-quarter at the beginning of the decade to more than one-half of all wood-based manufacturing activities.



Table D1.1. Indonesia Manufacturing of Wood and Wood Products, 2001-2008 (percent)

	Share of All Wood Manufactures			Share of All Manufacturing			Annual Growth Rate of Value Added		
	Furniture	Others	Total	Furniture	Others	Total	Furniture	Other Wood Products	Total Manufacturing
2001	23%	77%	100%	2.0%	6.8%	8.8%	na	na	na
2002	24%	76%	100%	2.0%	6.1%	8.1%	14.7%	5.4%	16.3%
2003	27%	73%	100%	2.1%	5.6%	7.7%	10.3%	-3.8%	5.4%
2004	29%	71%	100%	2.0%	4.9%	6.9%	7.2%	-4.6%	9.8%
2005	32%	68%	100%	1.9%	4.0%	6.0%	5.1%	-8.5%	10.5%
2006	47%	53%	100%	2.5%	2.8%	5.4%	70.2%	-8.6%	29.7%
2007	45%	55%	100%	2.5%	3.0%	5.5%	13.2%	23.2%	16.3%
2008	54%	46%	100%	2.6%	2.2%	4.8%	25.2%	-12.6%	19.3%

Note: Furniture production refers to ISIC (rev. 2) classification 36; other wood and wood products refers to ISIC (rev. 2) classification 15.  
Source: Badan Pusat Statistik, Available: <http://dds.bps.go.id>

**Employment and SMEs** – The furniture industry currently employs about 750,000 workers, which represents a 25 percent increase in labor absorption since 2003.<sup>142</sup> Many of these workers are employed by microenterprises and SMEs that account for roughly 90 percent of the furniture companies operating in the country.<sup>143</sup> Subcontracting arrangements by SMEs to commercial intermediaries are common, and this arrangement has permitted the rapid growth of small enterprises in furniture manufacturing. There is a large degree of informality in the industry, with

<sup>142</sup> Based on data provided by Ministry of Industry.

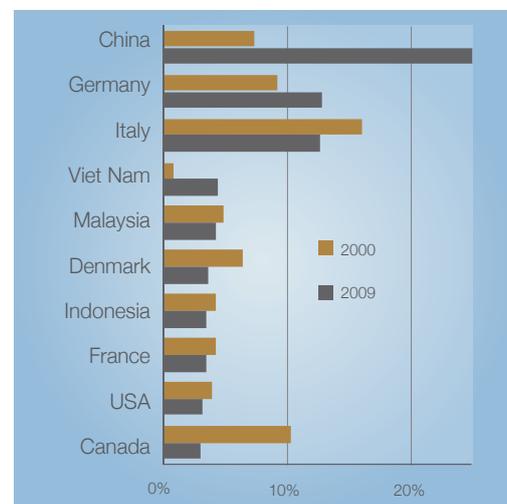
<sup>143</sup> Under Law no 9/1995, the Government of Indonesia defines SMEs using the following parameters: (a) net assets of less than or equal to Rp 200 million for small size enterprises and greater than Rp 200 million for medium size enterprises; (b) annual sales of Rp 1 billion for small enterprises and Rp 10 billion for medium size enterprises; (c) individual businesses in the form of registered (formal) or unregistered business entities, including cooperatives; (d) ownership by Indonesian citizen(s); (e) independent and unaffiliated with large enterprise(s). Source: IFC, "Small Enterprise Development Policies in Indonesia: An Overview". ILO Training Centre, October 2007. Available: [http://learning.itcilo.org/entdev/EE/doc/1434\\_SMEs%20Role%20in%20Indonesia-final.pdf](http://learning.itcilo.org/entdev/EE/doc/1434_SMEs%20Role%20in%20Indonesia-final.pdf).

many producers operating out of their homes.<sup>144</sup> Those firms that are engaged in export-oriented activities operate indirectly by subcontracting with large enterprises: SMEs manufacture semi-final products that are then finalized by large enterprises. Direct overseas sales occur through so-called 'buyers market-oriented' SME.<sup>145</sup> Under this arrangement, foreign buyers or tourists who visit carved wood furniture clusters like those in Jepara in Central Java arrange to ship the merchandise to their home-base through commercial intermediaries. These arrangements have played an important role in modernizing SME production methods and improving the quality of their products to improve their competitiveness in international markets.

**Types of Furniture Exports** – Over 75 percent of Indonesia's furniture exports are in the form of wood-based items.<sup>146</sup> This type of furniture is widely produced throughout the world and is commonly imported throughout the European Union, as well as the United States. In its bent wood form, it is principally used as casual and informal furniture, especially in seating and table forms having heavy cane frames. The other major type of export is furniture of cane, osier, bamboo or similar materials, which accounts for about 20 percent of Indonesia's furniture exports. Two decades ago, this type of furniture accounted for two-thirds of Indonesia's wood-based furniture exports. But its relative importance during the 1997 Asian financial crisis fell sharply and since then wood furniture has gained in importance to the industry.

**Major Global Competitors** - The declining importance of Indonesia's exports of furniture made from cane, osier, bamboo or similar materials has been due to China's rapid penetration of the world market for this type of furniture in the last decade, particularly into the EU and US markets. During the same period, China's export market share doubled from 15 to 30 percent, while that of Vietnam increased from only 0.1 percent in 2000 to 3.3 percent in 2009. Between 2000 and 2009, China's share of world furniture trade increased from 7.5 to 25 percent (Figure D1.2). This remarkable expansion has been due to China's low-wage labor, access to raw materials, and favorable exchange rates. However, product quality has remains below competing producers in countries like Germany and Italy, and the industry faces rising labor costs, increasing protection of its natural forests, an a lack of branding by the multitude of small and medium size enterprises in the industry.<sup>147</sup> At the same time, several relatively small producers have aggressively increased overseas sales. Vietnam in particular has enhanced its domestic production and overseas sales because of manufacturing wage rates that are even lower than those in China

Figure D1.2:  
**World's Top Furniture Exporters**  
(market shares, 2000 vs 2009)



Source: United Nations, COMTRADE database.

144 Jean-Marc Roda et al. "Atlas of wooden furniture industry in Jepara, Indonesia". Montpellier, France: French Agricultural Research Centre for International Development (CIRAD) and Bogor, Indonesia: Center for International Forestry Research (CIFOR), 2007.

145 Tulus Tambunan, "Trade and Investment Liberalization Effects on SME Development : A Literature Review and Case Study of Indonesia". Asia-Pacific Research and Training Network on Trade Working Paper Series, No. 42, August 2007. Available: <http://www.unescap.org/tid/artnet/pub/wp4207.pdf>

146 Throughout this study, furniture trade refers to either the Harmonized System (HS) classifications or the Standard International Trade Classification (SITC). Under the Harmonized System, the coverage consists of HS 940330 (Bent-wood furniture of a kind used in offices) + HS 940340 (Bent-wood furniture of a kind used in the kitchen) + HS 940350 (Bent-wood furniture of a kind used in the bedroom) + HS 940360 (Bent-wood furniture not elsewhere classified) + HS 940380 (Furniture of cane, osier, bamboo or similar materials, not elsewhere classified) + HS 940390 (Parts of furniture). Under the Standard International Trade Classification, the coverage consists of SITC 8215 (Furniture of wood) SITC 82179 (Furniture of other materials like bamboo), and SITC 8218 (Furniture parts).

147 Xiao Han, Yali Wen, and Shashi Kant, "The global competitiveness of the Chinese wooden furniture industry". Forest Policy and Economics. 11 (2009) 561–569. Available: [http://www.efi.int/files/attachments/associate\\_affiliate\\_members/han\\_2009\\_forest-policy-and-economics.pdf](http://www.efi.int/files/attachments/associate_affiliate_members/han_2009_forest-policy-and-economics.pdf)

and the Government of Vietnam's support to the industry's upgrading of its processing equipment.<sup>148</sup> The Government of Malaysia has also targeted the furniture industry for support in expanding its global market presence.<sup>149</sup>

Among the major industrialized furniture producing countries, only Germany has succeeded in significantly increasing its share of the global furniture market in the last decade by focusing on quality furniture products. German producers are unable to compete on price alone, and have used quality as the key differentiator for their products. Design differentiation has not been useful in differentiating Italian-made furniture, since other producers have readily adapted their own designs to match those of Italian furniture makers. Other countries, like Denmark, France, the United States and especially Canada have all lost market presence.

**Major Furniture Export Markets** – Indonesia's furniture exports are predominantly directed at three markets: the European Union (33 percent of all furniture exports), the United States (30 percent), and Japan (16 percent) (Figure D1.3). Only 2.6 percent of exports are destined for the ASEAN market. Within the European Union, the largest individual country markets are Germany (8 percent of all furniture exports to the world), France (6 percent), Netherlands (6 percent), United Kingdom (5 percent), and Belgium (4 percent). Among the different types of furniture, over two-thirds of exports to the EU market are in the form of wooden furniture and the remaining one-third is made of bamboo, rattan, cane or osier. Among the ASEAN member countries, 90 percent of Indonesia's wood furniture exports are absorbed by two member states, Malaysia (57 percent) and Singapore (33 percent).



Source: United Nations, COMTRADE database

### D.1.3. SWOT Analysis

Box D1.1 summarizes the strengths, weaknesses, opportunities and threats (SWOT) of Indonesia's furniture industry. The focus of the analysis is areas where there is a need for change to ensure that Indonesia realizes its export opportunities in the EU furniture market.

The major issues for the industry are as follows:

- There are opportunities to exploit Indonesia's competitive advantage in the EU market because of its relatively low labor and natural resources costs.
- Quality improvement by MSEs and SMEs would increase EU customer demand for Indonesian products.
- Lack of standardization of parts across producers.
- National laboratories could be developed to become internationally recognized.

148 German Industry and Commerce Vietnam (GIC), "The Vietnamese Furniture Industry". Hanoi, November 2006. Available: [http://www.vietnam.ahk.de/fileadmin/user\\_upload/Dokumente/Reiserichtlinie.pdf](http://www.vietnam.ahk.de/fileadmin/user_upload/Dokumente/Reiserichtlinie.pdf).

149 "Malaysia aims to be among top five largest furniture exporters in the world". Export.by News. March 2010. Available: <http://212.98.163.5/en/?act=news&mode=view&page=1&id=17462>

Box D1.1. Strengths, Weaknesses, Opportunities and Threats (SWOT) of Indonesian furniture industry

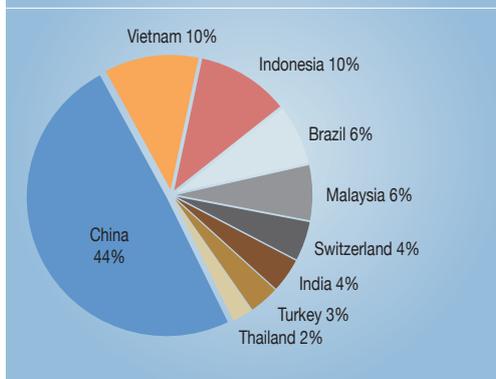
	Supply Chain Structure and Functioning	EU Market	MSEs and SMEs	Institutional Framework
<b>Strengths</b>	<ul style="list-style-type: none"> <li>■ Mechanized furniture industry is able to supply quality products to EU buyers.</li> <li>■ Raw materials like wood, rattan, bamboo are grown in Indonesia and easily available.</li> <li>■ Low-cost labor.</li> </ul>	<ul style="list-style-type: none"> <li>■ Competitive cost structure of Indonesian firms relative to EU producers.</li> <li>■ Strong and growing EU consumer demand for furniture in all sectors.</li> <li>■ Relatively low market access requirements for third country products.</li> </ul>	<ul style="list-style-type: none"> <li>■ MSEs have good workmanship in manual carving and carpentry.</li> <li>■ Skilled workmanship at microenterprise level.</li> </ul>	<ul style="list-style-type: none"> <li>■ Active association ASMINDO with large network</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>■ Long delivery times reduce possibility of cooperative agreements with international traders and buyers.</li> <li>■ Low standardization of parts across producers.</li> </ul>	<ul style="list-style-type: none"> <li>■ Lack of Voluntary Partnership Agreement (VPAs) between Indonesia and European Union for upcoming implementation of Forest Law Enforcement Governance and Trade (FLEGT).</li> </ul>	<ul style="list-style-type: none"> <li>■ MSEs are unable to provide quality furniture ready for the EU market.</li> <li>■ MSEs have operating difficulties associated with cash flows and access to finance.</li> <li>■ Design capabilities of MSEs are limited.</li> <li>■ MSEs and community forests not informed on and not ready for wood certification schemes</li> </ul>	<ul style="list-style-type: none"> <li>■ Lack of coherent Government development strategy for subsector.</li> <li>■ Lack of producer organizations providing support services for trade fairs.</li> <li>■ Laboratory BPMBEI not yet internationally recognized</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>■ Production capacity improvements in standardization of product components.</li> <li>■ Opportunities to exploit Indonesia's competitive advantage in the EU market through low labor and resources costs relative to EU producers</li> </ul>	<ul style="list-style-type: none"> <li>■ Identify and develop niche markets for high-end furniture products.</li> <li>■ Develop mass-produced furniture parts and components.</li> <li>■ Upcoming FLEGT regulation in the European Union can improve export to EU market if Indonesia meets requirements</li> </ul>	<ul style="list-style-type: none"> <li>■ Quality improvement by MSEs and SMEs would increase EU customer demand for Indonesian products.</li> <li>■ Production standard-ization by MSEs would expand subcontracting potential of MSEs with mass-production furniture companies and distributors.</li> <li>■ Cooperative arrangements could lower cost and improve product quality of MSEs and SMEs.</li> </ul>	<ul style="list-style-type: none"> <li>■ Government and business organization support to enhance value added through product design, certification, cluster and networking in furniture districts like Jepara, human resource improvement, and information dissemination.</li> <li>■ National laboratories can be developed to international recognition</li> <li>■ Implementation of traceability system for wood could improve EU market share</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>■ Improved supply chain organization and technology in other supplying countries. technology-based business promotion and information</li> </ul>	<ul style="list-style-type: none"> <li>■ Lack of Voluntary Partnership Agreement (VPAs) between Indonesia and European Union for upcoming implementation of Forest Law Enforcement Governance and Trade (FLEGT) would endanger export to the EU market.</li> <li>■ Several other countries have already developed FLEGT monitoring systems under Voluntary Partnership Agreements (VPAs) with the European Union.</li> </ul>	<ul style="list-style-type: none"> <li>■ MSEs lack access to finance needed to support product development and networking arrangements supporting access to overseas markets.</li> </ul>	<ul style="list-style-type: none"> <li>■ Continued limitations of micro-financial institutions capable of supporting process improvements by MSEs.</li> <li>■ Pervasiveness of informal economy without adequate organizational capabilities.</li> <li>■ Clients' concerns regarding legality of wood could threaten future export to EU markets</li> </ul>

## D.2. Indonesia's Export Competitiveness in the EU Market

### D.2.1. EU Market Development and Prospects

The European Union is the largest market for furniture in the world. It is therefore not surprising that Indonesia exports more furniture to this market than any other. The European Union is also a large producer of furniture, with over 150,000 firms, 1.4 million workers, and an estimated annual production of over 125 billion euros. Within the European Union the main producers are Italy and Germany, followed by France, Spain and the United Kingdom. The domestic industry is dominated by micro enterprises having less than ten workers. These enterprises often have subcontracting arrangements with the large manufacturers, supplying them with components and semi-finished products for the finishing and assembling of furniture. Chain stores are the most important channel for furniture sales.

Figure D2.1. Major Furniture Supplying Countries to the EU Market, 2009



Source: United Nations, COMTRADE database

The EU trade balance for furniture products has traditionally recorded a surplus. However, the balance has deteriorated dramatically from a surplus of almost 3 billion euros in 2002 to a deficit of 1.2 billion euros in 2008. In large part, the deficit has developed as a result of China's impressive penetration into the EU market: in 2000, its share of EU imports was less than 15 percent and by 2009 it accounted for 44 of EU imports. Other less important third country suppliers are Vietnam, Indonesia, Brazil and Malaysia (Figure D2.1).

The top importing countries in the European Union are the United Kingdom, Germany, France and the Netherlands (Table D2.1). Together these four countries account for two-thirds of all EU imports. Indonesia's market shares of EU

member countries ranges from less than 3 percent in some of the Eastern European countries to a high of 26 percent in the Netherlands. Other markets where Indonesia has substantial market shares are Luxembourg and Belgium (both 25 percent), Spain and the Czech Republic (both 14 percent), and France and Italy (both 13 percent).

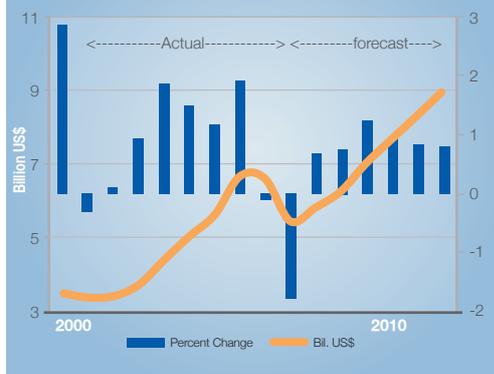
There is no specific EU legislation for furniture. However, horizontal sections of legislation impact on the industry in areas related to the environment, chemicals, intellectual property, health and safety at work and trade impact on the industry. The Directive on Integrated Pollution Prevention and Control (IPPC) aims to minimize pollution from various industrial sources throughout the European Union. In addition, the European Committee for Standardization publishes voluntary quality standards that are increasingly being recognized as industry standards throughout the EU market. These voluntary standards are established by the European Committee for Standardization (CEN) through a Technical Committee on Furniture that develops standards on terminology issues, safety issues (e.g. test methods on flammability and fire response), test methods and requirements for end products, parts, components, surfaces,

Table D2.1. Top 10 EU Furniture Importers and Indonesia's Market Shares, 2009

	Million US\$	Indonesia's Market Share
U.K.	1,362.9	6.4%
Germany	658.8	5.9%
France	633.3	13.3%
Netherlands	340.7	26.0%
Spain	239.5	13.7%
Italy	231.8	12.5%
Belgium	206.0	24.9%
Sweden	135.4	4.7%
Denmark	127.4	4.5%
Greece	117.2	6.9%
European Union	4,495.6	10.2%

Source: Appendix Tables A1 and A2.

Figure D2.2. EU Furniture Imports, actual 2000-2009 and forecast 2010-2015



Source: Projections by the Study Team based on econometric estimates and assumptions about economic activity from IMF, World Economic Outlook database.

Figure D2.3. Changes in Real Cross-Rates with Euro and EU Furniture Market Share, 1999-2009



Source: Calculated from IMF, WEO database, and EU, Eurostats.

surface finishes and furniture hardware as well as standards on dimensional coordination. Several subgroups have been created within the furniture technical committee to address different types of furniture like office furniture, seats, kitchen and bathroom furniture. Over 70 EN standards have been published so far and there are a number of standards in development.<sup>150</sup>

Despite the constraints created by the industry's regulatory measures in the European Union, there is considerable potential for Indonesia producers to expand their presence in the markets for larger furniture pieces used in the office, kitchen and bedroom, especially by integrating into the value chains of large distributors. Indonesia's competitive advantage in the EU market lies in its low labor and resources costs relative to EU producers. It also has a large skilled labor force in the wood furniture industry relative to an aging labor force in the European Union.

The EU demand for furniture imports has been strong, particularly in its response to changes in consumer incomes. Our estimates show that a one percent increase in real GDP of the EU market as a whole has produced a 3.8 percent expansion in furniture imports. Based on these estimates, and expectations about the medium-term prospects for economic growth in the European Union, we expect furniture imports to grow by a robust annual average of 9 percent. Figure D2.2 provides a visual representation of

the forecast of total EU furniture imports through 2015. The forecasts are based on assumptions about real GDP growth, furniture prices and exchange rates are taken from the International Monetary Fund's biannual projections.<sup>151</sup> They forecast GDP to grow by 1 percent in real terms in 2010 and by another 1.3 percent in 2011. After 2011 a moderate 2 percent annual real GDP growth is assumed. We assume unchanged constant euro prices for the products and an average exchange rate of US\$1.3 per euro over the medium term. Based on these projections for economic activity within the European Union, demand for furniture imports are projected to grow by an average annual rate of 9 percent, compared with a historical average of 8 percent a year in the last decade.

## D.2.2. Indonesia's Export Competitiveness

Indonesia's competitiveness in the furniture industry in the EU market, like in other foreign markets, is largely determined by four interrelated conditions: (i) export prices relative to those of competing suppliers to the market; (ii) the magnitude and type of accessible demand; (iii) accessibility and reliability of supporting industries; and (iv) firm strategy and rivalry that affect how firms conduct business.<sup>152</sup>

150 For details, see the published standards of the European Committee for Standardization (CEN) at <http://www.cen.eu/cen/Sectors/TechnicalCommitteesWorkshops/CENTechnicalCommittees/Pages/Standards.aspx?param=6188&title=CEN/TC%20207>.

151 See International Monetary Fund, "World Economic Outlook Update". July 2010. Available: <http://www.imf.org/external/pubs/ft/weo/2010/update/02/index.htm>.

152 These conditions are often referred to as the Competitiveness Diamond developed by Michael Porter, "Competitive Advantage of Nations". Free Press, 1998.

*Export Prices:* Indonesia's prices in foreign markets are influenced by both macroeconomic and microeconomic factors within the country. Macroeconomic conditions impacting the furniture industry's competitiveness are associated with the real cross-rate of the Indonesian rupiah relative to the euro, adjusted by domestic price movements. In this regards, what is most striking about exchange rate developments in the last decade is Indonesia's market share losses in the EU furniture market that have paralleled the rise in the real cross rates of Indonesia relative to many competing suppliers to the EU market. These movements occurred because Indonesia maintained a relatively stable currency so that the rupiah remained nearly unchanged in real terms vis-à-vis the euro; in contrast, the currencies of many competing furniture suppliers fell against the euro, thereby significantly undermining the price competitiveness of Indonesia's furniture exports in the EU market relative to the same products exported by competitors to that market (Figure D2.3).

**Table D2.2. Export c.i.f. Price of Furniture of Top Developing Country Suppliers to EU Market, 1999-2009**

	Avg cif export price
Brazil	172
Malaysia	173
South Africa	180
Thailand	184
China	188
Taiwan	204
Vietnam	220
<b>Indonesia</b>	<b>237</b>
India	240
Singapore	244
Mexico	248
South Korea	465

Source: derived from data in Eurostat database.  
Note: Average of all types of wood furniture exports.



Source: Purnomo et al., "Value Chain Analysis of furniture: action research to improve power balance and enhance livelihoods of small-scale producers". XIII World Forestry Congress, Buenos Aires, Argentina, 18 - 23

The microeconomic factors impacting the industry are those associated with factor input costs (mainly labor) and infrastructure-related inputs like electricity and communications. The cost structure of the furniture industry is reflected in the nominal unit price of product exports in the industry's relatively competitive global market.<sup>153</sup> Indonesia has a cost advantage in its proximity to high quality timber and its abundant labor supply, which helps to offset the shipping costs of furniture to the EU market. Table D2.2 shows the average export price of Indonesia and its major developing country competitors in the EU markets. Indonesia ranks near India in terms of its price competitiveness, but well below Brazil, Malaysia, South Africa, Thailand, China, Taiwan and Vietnam. Only Singapore, Mexico and South Korea have higher unit trade prices. These

price differentials could of course simply reflect quality differences. The more important measure of competitiveness is the impact that those prices have had on the demand for Indonesia's exports, that is, whether changes in the price of Indonesia's exports have affected the EU demand for Indonesian exports relative to that of competing suppliers to the market. This issue is examined in the next section of this chapter.

**Demand Conditions:** Few firms are linked directly to overseas consumers. The multitude of micro and small scale enterprises in the industry having little if any networking capabilities prevent them linking up with large chains or independent retailers. This situation often leads to rent seeking from commercial intermediaries who have information about the market allocation system for furniture. The

<sup>153</sup> In a competitive market, the firm or industry as a whole will select an output level that equates its marginal cost with its export price.

*Box D2.1.*  
**Competitive Analysis of Indonesian Furniture Industry**

	Strengths	Weaknesses
<b>Pricing Conditions</b>	<ul style="list-style-type: none"> <li>Stable real cross-rate with euro.</li> <li>Low-cost manufacturing for mass products.</li> <li>Close to timber sources.</li> <li>Abundance of labor.</li> <li>High-end furniture exports.</li> </ul>	<ul style="list-style-type: none"> <li>Real effective devaluations by competing suppliers to EU market.</li> <li>Low-cost furniture exports.</li> <li>High logistics costs, including import charges on factor inputs.</li> </ul>
<b>Demand Conditions</b>	<ul style="list-style-type: none"> <li>High quality workmanship known to overseas buyers.</li> <li>Increasing use of EU-consistent environmental standards.</li> <li>Furniture market segmented for targeting low, medium and high-end products.</li> </ul>	<ul style="list-style-type: none"> <li>Inconsistent quality standards, especially for export market.</li> <li>Regulations difficult to access for SMEs.</li> <li>Lacking of understanding of EU furniture tastes and needs.</li> <li>Lack cutting edge knowhow or sophistication for export markets.</li> </ul>
<b>Industry Network-ing</b>	<ul style="list-style-type: none"> <li>Furniture dealer concentration in geographic areas.</li> <li>Strong supporting relationships and subcontracting in industrial complexes</li> </ul>	<ul style="list-style-type: none"> <li>Lacking cluster development and collaboration with overseas networks.</li> <li>Weak linkages to trucking, logistics, warehousing, software, banking and finance.</li> </ul>
<b>Conditions for Con-ducting Business</b>	<ul style="list-style-type: none"> <li>Strong competitive environment</li> <li>Knowledge about requirements in environmental legislation.</li> <li>Clusters disseminate information about business regulations.</li> </ul>	<ul style="list-style-type: none"> <li>Price-based competition for similar products.</li> <li>Lacking attention to design and manufacturing processes.</li> <li>Weak product design feedback loop.</li> <li>Legislation difficult to access.</li> </ul>

Source: Based on Competitive Diamond analysis (see Michael Porter, "Competitive Advantage of Nations". Free Press, 1998).

result is a situation that engenders the entrenchment of the current situation for domestic furniture producers, especially those that are classified as either micro or small scale enterprises (MSEs) by the Government of Indonesia.<sup>154</sup> These conditions affect buyer perceptions about the quality, design and reliability of Indonesian furniture. A recent study carried out a survey of foreign buyers to examine whether there were significant differences between their perceptions of Indonesian furniture from Jepara and that from other country sources.<sup>155</sup> The results, summarized in Figure D2.4, show that buyers view Jepara's furniture prices and ordering flexibility as being similar to other foreign suppliers, but that they perceived Jepara furniture to be of a much lower quality and design and higher delivery time than furniture sourced from other countries.

*Industry Networking:* Furniture production that is concentrated in industrial complexes like the one in Jepara provides important networking support. Because of the importance of Jepara as a center for furniture makers, this geographic area tends to be examined more closely than those in other areas of the country. In these types of clusters, a large number of MSEs are able to establish supporting relationships and subcontracting relationships that allow them to effectively compete with larger integrated units. These units can provide specialized knowledge of multiple furniture production functions, including the design, procurement, manufacturing, marketing, and distribution functions

154 Jean-Marc Roda et al. "Atlas of Wooden Furniture Industry in Jepara, Indonesia". France: French Agricultural Research Centre for International Development (CIRAD) and Bogor, Indonesia: Center for International Forestry Research (CIFOR), 2007. Available: [www.cifor.cgiar.org/publications/pdf\\_files/books/BFRoda0701.pdf](http://www.cifor.cgiar.org/publications/pdf_files/books/BFRoda0701.pdf).

155 Purnomo et al., "Value Chain Analysis of furniture: action research to improve power balance and enhance livelihoods of small-scale producers". XIII World Forestry Congress, Buenos Aires, Argentina, 18 – 23 October 2009.

along the industry's value chain. Opportunities abound for vertical cooperation along the value chain and with customer relationships, and for horizontal cooperation with clusters of similar firms or with dominant firms that can play a lead role in overseas operations.

*Conditions for Conducting Business:* Business strategies of most furniture enterprises are relatively unsophisticated, based largely on often based on short-term price concessions, rather than manufacturing and design improvements. Most firms compete on the basis of price with similar products from their competitors. They also compete in their ability to maintain strategic alliances with commercial intermediaries or in their subcontracting arrangements with larger firms. There are no business networks providing direct furniture sales to overseas customers and, as a result, most companies are dependent on commercial intermediaries to place their products abroad. Overcoming these obstacles is difficult because of the large number of market segments, and within these, the existence of different market niches, for example, high-volume, price-sensitive and design or brand-intensive markets. Moreover, markets vary in Europe and elsewhere. For example, the markets in France, Germany and the United Kingdom are concentrated in large multi-store outlets, while in Italy furniture is mostly sold in small independent outlets.

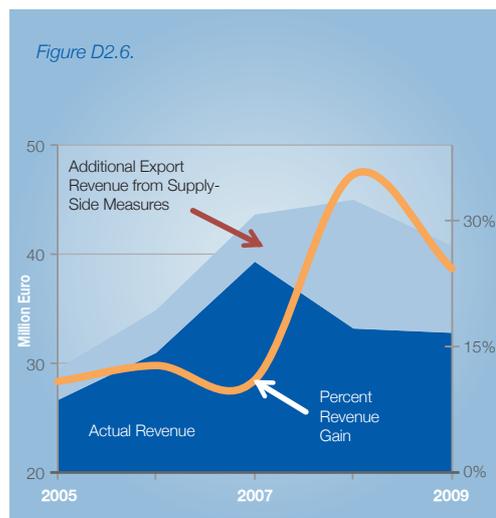
### D.2.3. Opportunities to Regain Market Shares

Indonesia has suffered important losses in EU furniture market since 2005. Our estimates of the export relationship for the Indonesian furniture industry suggest that those losses were largely due to non-price factors associated with supply impediments like EQI limitations (Figure D2.5).<sup>156</sup> Export price movements were responsible for some losses, notably in the middle of the decade and in 2008-09, and exchange rate pass-through caused by the real cross-rate appreciation of the rupiah relative to the euro brought about significant market share losses in four years during the past decade.

However, it was the non-price factors that were consistently responsible for the deterioration in Indonesia's participation of the EU furniture market beginning in 2005 and extending through 2009. Our estimates suggest these non-price factors were responsible for about one-third



Source: Derived from Study team estimates.



Source: Derived from Study team estimates.

<sup>156</sup> Non-price factors (including but not exclusively EQI) are equal to the changes in exports not explained by income and price changes. That's the way it was calculated and that's normal the way that the intercept is interpreted. However, in our case, we broke down the non-price factors further by including a trend variable to capture secular changes that could or could not be associated with EQI. Because of the attribution uncertainty, it was decided not to report the secular (trending) estimates.

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Indonesia's losses of shares in the EU furniture market during the past decade.

To the extent that Indonesia could have overcome its supply impediments on exports and maintained its 5 percent share of the EU furniture market that it reached in 2004, foreign exchange revenue from the industry would have been nearly 20 percent higher in 2005-2009 than was actually achieved. FigureD 2.6 summarizes those calculations. It shows that especially during the Global Financial Crisis of 2008-2009, the additional revenue from supply-related adjustments could have been 24 to 36 percent greater than actual export earnings in the furniture industry. Overcoming those obstacles will require considerable effort on the part of the industry, particularly for EQI requirements. However, the benefits to the subsector are considerable, as are the economy-wide impact that would be produced from additional employment and expenditures on other sectors. Without those EQI constraints and assuming that all other price and non-price factors were the same as other suppliers, Indonesia's exports would increase by the same proportion as those of EU imports for wood furniture, that is, the same as our forecast of 9 percent annual growth of EU furniture imports from third countries.

## D.3 Challenges for Realizing Indonesia's Export Potential

### D.3.1. EU Market Access

For Indonesian exporters shipping furniture products to the EU markets, the following are the specific market access requirements:<sup>157</sup>

1. *Tariffs:* For furniture, an average *ad valorem* tariff of 2.3 percent applies to third countries and, on average, a preferential tariff rate of 0.2 percent applies to Indonesia (Box D3.1).
2. *Specific requirements:* In addition to the standard procedures governing importation (import procedure, trade regime and import licenses, environment protection, technical standardization, packaging and labeling), there are two special requirements for wood furniture imports into the EU market. The first concerns the EU Eco-label for wooden furniture; the second relates to general product safety. There are also rules of origin requirements for GSP status to be maintained on imported goods.

Box D3.1. EU Market Access for Furniture

Tariffs	MFN	GSP
Average	2.3	0.2
Maximum	5.7	2.2
Minimum	0.0	0.0

Source: Appendix Tables A1 and A2.

#### Product-Specific Requirements:

- EU Eco-Label for wooden furniture
- General product safety
- Rules of origin.

Source: Tariffs provided by European Commission, Trade Directorate; requirements from EC Helpdesk.

#### (a) EU Eco-Label for Wooden Furniture (voluntary measure)<sup>158</sup>

The Community Eco-label or „Flower logo“ is the official mark in the European Union for products with the lowest environmental impact in a product range. Its aim is to promote, as well as to help consumers to identify those products that contribute significantly to improvements in relation to key environmental aspects.

Participation on the scheme is voluntary. This means that products can be sold within the EU market without the Flower logo and that there are no regulations that oblige to apply for the Eco-label.

- (i) *Product Scope:* The product group “wooden furniture” comprises free-standing or built-in units, which are used for storing, hanging, lying, sitting, working and eating of domestic furniture, whether for indoor or outdoor use, or used indoors for business purposes. Business purposes include office and school furniture as well as furniture for restaurants and hotels. The following conditions must be fulfilled: (i) the product must be made of at least 90 percent w/w solid wood or wood-based materials. Glass, if easily replaceable in case of damage or breakage, may be excluded from the weight calculation as technical equipment and fittings; (ii) the weight of any individual material, other than solid wood and wood-based materials, must not exceed 3 percent of the total weight of the product. The total combined weight of such materials must not exceed 10 percent of the total weight of the product.
- (ii) *Procedures:* When a good is included in the product group definition and complies with the published Eco-label criteria, manufacturers, importers, service providers, trader or retailers who want to market their products in the European Union, may apply for the Eco-label in accordance with Regulation (EC) No 66/2010 of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel (CELEX

<sup>157</sup> The following information draws on material available at the European Commission's Helpdesk for developing countries. Available: <http://exporthelp.europa.eu>.

<sup>158</sup> In addition to the material below, information on the Eco-label scheme as well as a user-friendly fact sheet is available at: [http://ec.europa.eu/environment/ecolabel/ecolabelled\\_products/categories/wooden\\_furniture\\_en.htm](http://ec.europa.eu/environment/ecolabel/ecolabelled_products/categories/wooden_furniture_en.htm)

32010R0066).<sup>159</sup> For a product made outside the European Union, the application must be presented to a Competent Body of any of the Member States in which the product is to be or has been placed on the market. The application must include all relevant documentation to prove that the product complies with the ecological and performance criteria. The Competent Body will inform the applicant of the necessary documents that need to be submitted, the test results that must be provided, how they should be carried out, and other details.

- (iii) *Awarding Label:* After assessing whether the product conforms to the Eco-label criteria and that the application complies with the assessment and verification requirements set out in Commission Decision 2009/894/EC, the Competent Body will decide on the award the label. If the application is successful the Competent Body will conclude a contract with the applicant covering the terms of use of the label. Eco-labeled products can be marketed in all Member States. Once obtained, the holder has the choice of displaying the Flower logo on any part of the product.<sup>160</sup> It can be used from the date it is awarded until the end of the period of validity of the criteria. Applications for the award of an Eco-label are subject to payment of a fee. In addition, there is an annual fee for the use of the label.
- (iv) *Requirements:* In order to be awarded the Community Eco-label, wooden floor-coverings must comply with the criteria set out in the Annex to Commission Decision 2009/894/EC referring to: (i) product description; (ii) hazardous substances; (iii) wood and wood-based material requirements; (iv) criteria for surface treatments; (v) criteria for the assembly of furniture; and (vi) criteria for the final product. The end of the period of validity of the criteria for wooden floor coverings will be 1 December 2013.

(b) *General Product Safety (required)*

Products on the European Union market for consumers or likely to be used by them, including all products that provide a service and excluding second-hand products that have antique value or that need to be repaired, must comply with the provisions laid down by Directive 2001/95/EC of the European Parliament and of the Council (CELEX 32001L0095) designed to protect consumer health and safety.<sup>161</sup> The General Product Safety Directive (GPSD) establishes the following common provisions concerning particularly: (i) general safety requirement; (ii) additional manufacturer and distributor obligations; and (iii) market surveillance.

- (i) *General Safety Requirement:* Producers are obliged to place only safe products on the market. For this reason, it is important that there exists traceability, i.e., the ability to find the manufacturer/exporter in the supply chain. When the manufacturer is not established in the EU, this obligation applies to his representative in the EU or, in the absence of a representative, to the importer. A safe product is one that poses no threat or only a reduced threat in accordance with the nature of its use and that is acceptable in view of maintaining a high level of protection for the human health and safety, taking into account the following points: (i) the characteristics of the product, including its composition, packaging, instructions for assembly and for installation and maintenance; (ii) the effect on other products, where it is reasonably foreseeable that it will be used with other products; (iii) the presentation of the product, the labeling, any warnings and instructions for its use and disposal and any other indication or information about the product; and (iv) the categories of consumers at risk when using the product, in particular children and the elderly. The General Product Safety Directive establishes the regulatory scheme to determine compliance with the

<sup>159</sup> For the legislation, see <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2010:027:SOM:EN:HTML>

<sup>160</sup> For details on the form of the flower logo, see [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_99v001/eu/aux/eu\\_ecolabel\\_annex2\\_flowerlogo.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_99v001/eu/aux/eu_ecolabel_annex2_flowerlogo.pdf)

<sup>161</sup> For details, see the Economic Commission, "European Union legislation on general product safety". Available: [http://exporthelp.europa.eu/update/requirements/ehir\\_eu10\\_99v001/eu/aux/eu\\_safeprod\\_leg.pdf](http://exporthelp.europa.eu/update/requirements/ehir_eu10_99v001/eu/aux/eu_safeprod_leg.pdf)

general safety requirement in which CEN adopted to define the appropriate safety specifications are considered.

- (ii) *Additional manufacturer and distributor obligations:* In addition to the basic requirement to place only safe products on the market, producers must inform consumers of the risks associated with the products they supply, particularly when such risks are not obvious. They must take measures to be informed of risks posed by the products and take the appropriate measures to prevent such risks (e.g. withdraw products from the market, warning consumers, recall products that have already been supplied to consumers). The obligations on producers apply to any professional in the supply chain who may affect the safety characteristics of a product. In particular, they are obliged to monitor the safety of products and provide the necessary documents ensuring that the products can be traced. Manufacturers or the distributors must not supply products that they know or presume to be dangerous. If they discover that a product is dangerous, it must be notified to the competent authorities of the Member States and, if necessary, cooperate with them on the action taken to avoid the risks for consumers.
- (iii) *Market surveillance:* Nominated authorities in the Member States are in charge of checking that the products meet the applicable safety requirements. They may take appropriate measures to impose marketing restrictions, require product withdrawal from the market or recall products when there is evidence that there is any danger.
- (vi) *Rules of Origin Applicable to GSP Status:* For furniture, the value of all the materials from non-originating countries should not exceed 40 percent of the ex-works price of the product.

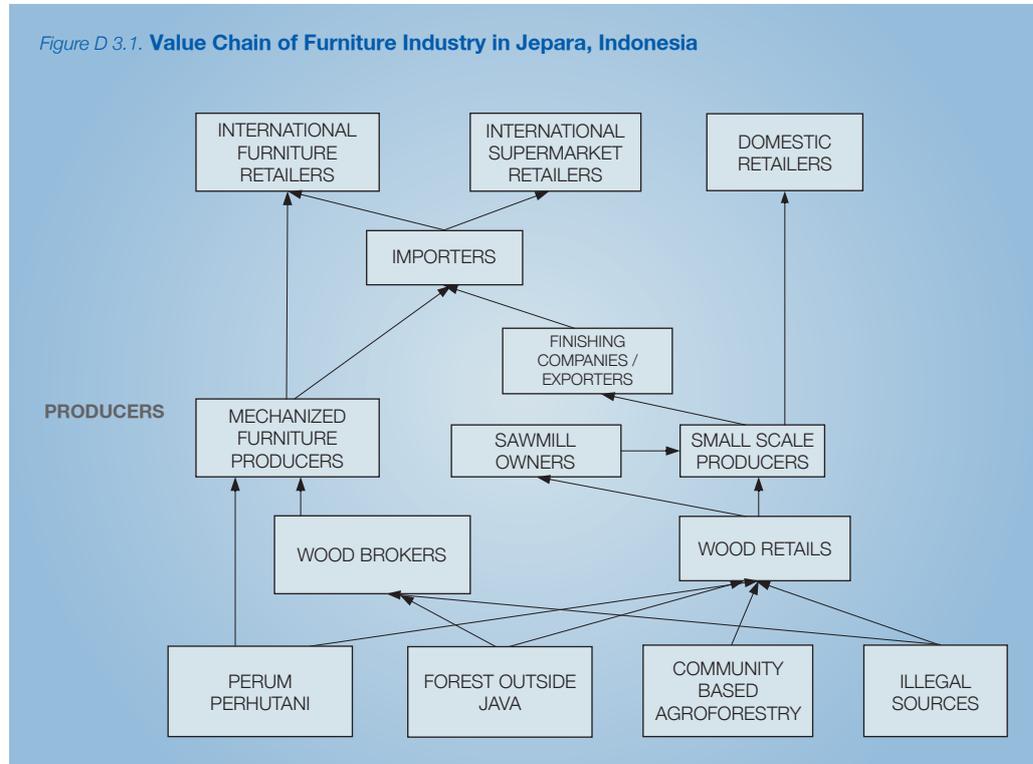
### D.3.2. Value Chain and EQI Analysis

The value chain of the furniture industry can be described in terms of the activities among material suppliers from forests and plantations, furniture makers, intermediaries, and consumers. Figure D3.1 illustrates the value chain for the furniture process in Jepara in Central Java. It shows the relationships between the various agents within the value chain and illustrates the flow of goods from raw material supply to the end consumer. The market-side distinguishes between international and domestic retailers while the producer-side differentiates between mechanized and integrated producers and small-scale manual producers. The material supply-side identifies four sources: state-owned forest plantation Perum Perhutani, forests and plantations outside of Java, community-based agro-forestry and illegal providers.

There are several ways of bringing timber materials from forests and plantations through different producers to the market. All of them start with wood as main source. The wood is distributed by wholesalers or retail sellers. Larger processors purchase wood, mostly from wholesalers, while MSEs buy from retail distributors because MSEs do not have sufficient funds to buy large amounts of wood. Larger companies export their furniture products either directly or through exporters to overseas buyers. MSEs often do not provide their products with sufficient export quality. As a result, finishing companies or exporters have to complete the elaboration of the product.

*Product Quality:* Quality is defined as fulfilling the buyer's expectations. Originally, the term quality only related to the compliance of technical specifications. However, product quality nowadays also comprises on-time delivery, delivery time, production flexibility, product safety, compliance with international environmental, social and safety and health standards. In order to understand the performance status of the furniture sector, it is useful to compare the perceptions of different actors

Figure D 3.1. Value Chain of Furniture Industry in Jepara, Indonesia



Source: Based on H. Purnomo et.al. Value Chain Analysis of furniture: action research to improve power balance and enhance livelihoods of small-scale producers, 2009

within the value chain.

Five aspects of performance have been investigated as part of this study: quality (defined as compliance with technical specifications), price, on-time delivery, ordering flexibility and design.<sup>162</sup> Interviews with global buyers and local producers of furniture were conducted as part of the field work. The information gathered showed that both foreign buyers and small-scale producers have the same perception about price and flexible performance. They rank both aspects highly. However, global buyers ranked quality, delivery time and design aspects higher than small-scale producers. Thus, only on price and ordering flexibility do the expectations of global buyers meet the perceptions of local producers. Local producers therefore need to improve their product quality, design and on-time delivery to meet the expectations of global buyers.

Large international buyers require that all wood sources used in furniture manufacturing be legally verified. Exporters must ensure that the Verification of Legal Origin (VLO) standards are met by ensuring the traceability of used wood material through the chain of production. Consequently, the entire chain –from harvesting, logging, drying, distribution, manufacturing, assembly to finishing – must provide traceability. Since the mid-1980s, tariff reductions in consuming countries have led to a decline in entry barriers, yet the increase in various forms of certification has brought about new barriers. Predominant among these certifications are those related to process characteristics rather than products. They include quality standards (ISO 9001), social accountability standard (SA 8000) and environmental standards (ISO 14001). In addition to the ISO14001 environmental management standard, there are also wood sector-specific standards (e.g. Forestry Sustainability Council, FSC), relating to environmental practices throughout the value chain. These standards have become increasingly important, especially for global retailers.

<sup>162</sup> The following material is taken from H. Purnomo et.al. Value Chain Analysis of furniture: action research to improve power balance and enhance livelihoods of small-scale producers, 2009

In summary, the relevant quality parameters in furniture production are (i) compliance with technical specifications, (ii) design, (iii) on-time delivery, (iii) delivery time, (iv) ordering flexibility, (v) illegal logging and sustainable forestry, and (vi) other management certifications. The following section describes how and where to deal with these requirements in the furniture production process.

### **D.3.2.1 Furniture Production Process and EQI**

In the following paragraphs, the production process with all process steps is discussed including quality issues. The issue of illegal wood is comprehensively discussed in a separate chapter (D3.4). Figure D3.2 demonstrates the general process in furniture production and the sensitive quality checkpoints.

#### **Step 1 – Buying and Cutting the Wood**

**Process Description:** In the first production step the producer purchases the (round) log wood from auctions or retailers. Large companies buy log wood at auctions, while smaller companies often buy from agents, who have obtained the wood in larger quantities from auctions. Wood is sold in different lengths and diameters, which are commonly 15cm to 50cm. The price of wood with larger diameters is higher than that of smaller diameters. The price also depends on the quality criteria, such as color (wood stain) and branch marks. The logs are then cut into boards or planks, which are then allowed to dry for a month. The cutting of logs into boards is usually subcontracted to saw mills.

**EQI Issues:** One of the main issues of product quality is the origin of the wood. Teak wood is the main raw material used by Indonesian furniture manufacturers. All teak wood comes from government plantations or from private forests or gardens. Teak is not indigenous to Indonesian forests, except in some parts of Sulawesi. Even though most teak wood comes from plantations, many buyers are concerned about the issue of illegal logging and sustainable forestry.

Wood quality is an important issue in the production chain, as it will determine the quality of the final product. Teak wood can be young or old and can be sourced from different locations. Older material, from the inner part of the tree, is better and stronger. Often the wood pieces used for furniture have both young and old parts, since finding large pieces of the better, older quality is becoming increasingly difficult. The much higher price of such A-grade quality wood is of major concern. In order to hide the lower quality of younger wood, which has a whiter color, the manufacturers often apply a coloring step during the finishing process, so that the difference cannot be seen easily. The wood quality differs from location to location. Wood from Central and East Java is perceived as better than from West Java. Buying log wood is always risky, as the inner part of the log cannot be inspected and can be rotten, which consequently leads to high losses.

The best teak quality is supplied by Perhutani, a government plantation company. Perhutani uses better seeds and has a special method to let the tree die before cutting it down. They prepare the harvesting of the wood by peeling off the bark from the living trees six to seven months before cutting down the trees. After the trees are cut down, the logs are cut into 0.5 to 1 meter-long pieces. Wood that has undergone this process is of higher quality than wood that has not.

Wood from community forests are usually of lower quality and are thus often unacceptable for export. The lower quality of the wood is related to (a) the premature cutting down of the trees, yielding to small diameters and young age of the wood, and (b) the direct cut of the tree without letting the tree die by peeling off the bark.

All wood harvested in Indonesia has to be registered with the Ministry of Forestry, which provides a certificate (Faktur Angkutan Kayu Bulat). The certificate provides information about the sender, transporter, receiver, total volume, wood type, and the number of wood pieces. The certificate must be attached to all wood harvested in Indonesia. In this production step the legality of wood is an issue and has to be ensured. Legality of wood traceability is currently required by labelling schemes as FSC and will be required at the end of 2012 by the upcoming FLEGT regulation.

*MSEs:* MSEs often purchase poor-quality wood from community-based forests. They also purchase wood that originates from the outer part of a trunk, as such wood is cheaper. The low-grade quality of wood can often only be recognized at the end-user level in Europe, where the climate and humidity is different from Indonesia. The low-grade quality of wood can lead to cracks in the products.

The Ministry of Industry and the Furniture and Handicraft Association (Asosiasi Industri Permebelan dan Kerajinan Indonesian, ASMINDO) have established wood terminals (Terminal Bahan Baku) in Sulawesi, Aceh and Kendal, Central Java. These terminals are wood distribution centers that help MSEs and SMEs in obtaining wood in small quantities. The terminals ensure that the wood originates from legal sources. Consequently, wood taken from these terminals are considered to be legally sourced. Currently, there are plans for these terminals to issue certificates, which will prevent MSEs from having difficulties in transporting wood to their workshops.

*Conclusions:* This production step has two main issues: first, the origin of the wood and the quality of the wood. In Indonesia teak wood is mostly sourced from plantations. However, buyers in the European Community and some other countries are concerned about illegal wood from natural forests. Second, local enterprises supply low-quality wood that does not have the same quality as that from Perhutani. They are unaware of the long-term benefits of producing high-quality wood.

### **Step 2 – Drying**

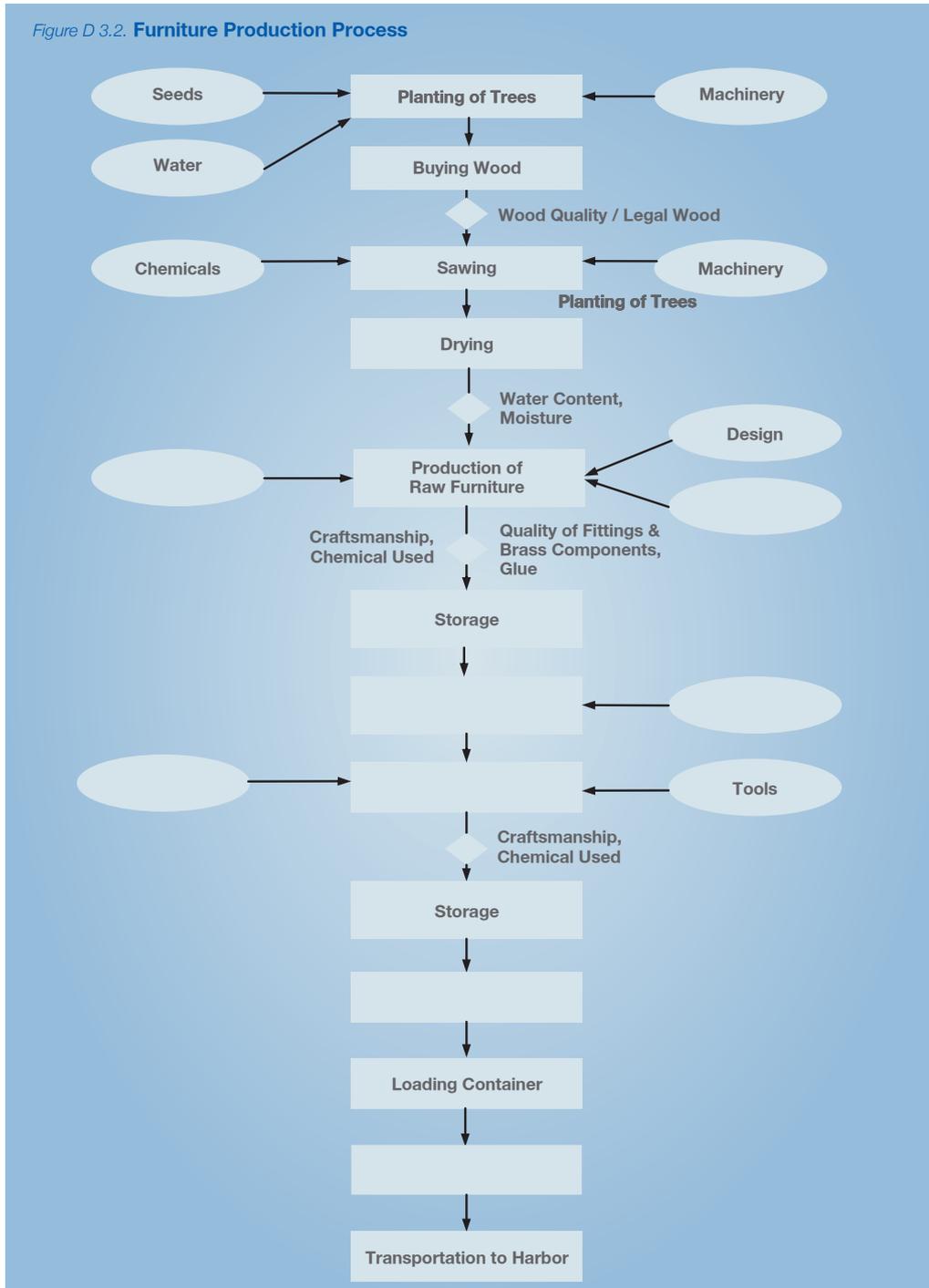
*Process Description:* To further improve the wood quality, the material is dried in a dry kiln. The process of drying lasts for approximately two weeks under controlled changing temperatures and humid condition.

*EQI Issues:* To avoid cracking, the wood must have specific moisture content. The recommended water content of teak wood for production is 15 percent. This value is achieved by a slow drying process in a kiln dryer. However, many MSEs avoid the drying process because of its high costs, resulting in lower wood quality. Wood has to be dried in the open air for some time before it enters the dry kiln. Without drying in the dry kiln the stability of the wood, especially if exported to different climate areas, cannot be guaranteed, because the reduction of wood moisture in the destination country can yield to cracks. The drying process must be performed under controlled temperature and humidity conditions. Temperature will be slowly increased, while humidity is slowly decreased. For teak, the drying process takes ten days. Then the temperature is slowly decreased to the ambient temperature of Indonesia (about 30C). After the drying process in the kiln, the moisture content of the wood will slowly decrease by itself. Old teak wood has a moisture content of about 2-3 percent. The drying process for other kinds of wood is more complicated, but will not be mentioned here as the amount of this wood to be exported is small compared to teak.

A major problem in Jepara is that many dry kilns neither have thermometers nor hygrometers, which are used for humidity measurements. In the rare case that these devices are available, they are usually not calibrated. Without these devices, no controlled process can be performed and the result of the drying process seems more than doubtful. Producers, on the other hand, could use a moisture meter to measure the moisture within the wood. Usage of moisture meters is important for incoming inspection of the purchased wood to ensure the wood has certain moisture content.

*MSEs:* In MSEs, the drying process is often not executed properly or not done at all. The dry kiln is quite expensive. Thus, MSEs often do not use a dry kiln because it is a time-consuming and high-cost process. Additionally, the kiln is quite large and has to be filled completely, but MSEs do not have the financial resources to purchase a sufficient amount of wood to fill a whole kiln. They can only buy wood for one order. Therefore they have to share the kiln with other customers and have difficulties drying the wood according to the production schedule. They try to sell their products without kiln drying at lower prices. Thus, insufficient cash flow forces them to produce low-quality products at low prices.

Figure D 3.2. Furniture Production Process



Source: Field Interview

**Conclusions:** Drying in dry kilns is essential for achieving export quality wood. Knowledge of dry kiln operators and furniture producers about this process and its impact on furniture quality is not sufficient. Controlled processes cannot be assured in the dry kiln. Some producers even use air-dried wood and cannot ensure export quality products. Producers are not used to performing measurements on the moisture in wood and cannot guarantee a certain wood quality.

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### **Step 3 – Production / Assembling**

*Process Description:* During this stage the furniture producer manufactures his products according to the specifications provided by the buyer. Furniture is produced by cutting the dried planks and boards into components, carving where necessary, and assembling with glue, wooden dowels or industrial fittings (especially for knock down furniture<sup>163</sup>).

*EQI Issues:* EU requirements on product safety have to be addressed during the design of the product to be manufactured, a step usually carried out earlier by EU companies. Quality problems at the production / assembling stage itself are mostly related to three issues: workmanship, materials used and management. Good workmanship is necessary to ensure high-quality products. Components have to be assembled in a way that ensures the product is strong enough for its purpose and will not shrink or tear after delivery. The construction of the furniture must be carefully controlled. The correct use of proper machinery will provide more exact results.

Larger companies are more automated and can therefore work faster and with lower tolerance. Components can be assembled to any single product of the same type, which allows for more flexibility and for better organization of the production process. Smaller tolerances, reproducibility, and a well-organized work process will result in products of higher quality.

Exporters face major challenges during this production step. Low-quality work will often only be discovered at the buyer's premises or even when it reaches the consumer. Complaints after delivery cannot be corrected anymore, and the loss for the exporter is high. Therefore many exporters supervise this production step with their own personnel.

The time required to deliver products to the market is an important quality issue since the shipment has to be performed in accordance to a predetermined schedule. There must be sufficient time before the shipment to conduct a quality check, packing and documentation. Sometimes MSEs do not deliver in accordance to agreed schedule (on-time delivery). Some buyers are satisfied with the delivery time of MSEs. The short delivery time of four to six weeks compared to 2.5-3 months of larger companies is much appreciated.

*MSEs:* Most MSEs in Jepara manufacture furniture almost entirely in a manual manufacturing process, using only basic machinery for cutting and drilling. Even standard jigs for component production are rarely used. This manual process relies almost entirely on the craftsmanship of the workers and leads to higher variations and tolerances in the product. Components are usually not exchangeable since they are manufactured to fit one specific product but not to one specific type or model. MSEs in Jepara are unaware of reproducibility issues in production. "Experienced workers know exactly the size and how to produce this correctly," claimed a small producer in Jepara. However, the fact is that many exporters complain about products that always differ in the specifications. Ultimately, in many cases this poor production planning creates inefficient production processes. Only a small portion of raw materials can be utilized, many unnecessary faults are made and the products always differ.

MSEs usually do not design new products. For the local market they produce mostly traditional designs. Sometimes international buyers also use the traditional designs or modify them slightly. However, often international buyers create their own designs and let the MSEs produce in accordance to the buyers' specifications.

In the assembly step, fittings, wooden dowels and glue are the main materials used. Most MSE producers face problems in assembly due to larger tolerances of their components and tend to apply cheap local glue to reduce cost. Meanwhile, for export quality long-lasting high quality glue could be used. Joints must be stable, and good-quality glue has to be used. The glue used is epoxy adhesive, which is applied by mixing resin and hardener. Some larger companies use imported glue. Large tolerances in components, improper or insufficient use of wooden dowels and low quality glue leads to low-quality products despite the fact that good-quality wood was used.

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<sup>163</sup> Knock-down furniture is built in simple pieces for transport with reduced volume and which can be easily assembled by the end user.

The layout and workshop arrangement does not seem to be a concern for the MSEs. There is no proper storage or layout setting. Waste and dangerous tools are everywhere, resulting in the workshop's untidy appearance. A production layout that is not in accordance with the production process can cause inefficient production. A clean and tidy workshop is necessary as it is a display for direct buyers, including tourists. Also, the exporters often need to show the production workshops to its buyers.

MSEs tend to resort to short-term solutions when resolving failures in the production process without considering the long-term effects. For instance, when the assembly fails in one part, MSEs choose to glue it instead of making an appropriate joint for it. Buyers sometimes cannot easily recognize this, but it will lead to low quality of products at the end-user level because it will easily crack.

An important factor that influences the production cost of furniture products is the percentage of the raw material used. The small profit margin gained by MSEs in Jepara is caused by the inefficient production process where they can only utilize about 30 percent of the log wood. The rest is waste in form of wood chips, saw dust and tinder. The unprocessed materials in the form of big chips can be utilized for the next production or can be altered into handicrafts. However, this handicraft production also needs working capital and specific skills. If they have a dry kiln, the small parts of the waste can be used as fire wood. The large amount of waste causes some problems in storage, cleanliness, safety and final disposal. In high-volume production sites, the waste can be turned into interior products with a laminating technique (by using a "Finger Joint Laminating" machine). The machine requires quite a high operating cost and does not seem feasible for the MSEs.

*Conclusions:* Quality problems are, for the most part, related to three issues: workmanship, materials used and management. Improvements on the quality of craftsmanship with a focus on machinery use are necessary. The use of modern equipment has to be introduced, which will increase the quality of products as well as the efficiency of the processes. The use of jigs for measurements and machineries for wood working will increase compliance with technical specifications. MSEs often do not use high-quality materials during assembling and finishing. Many quality issues in MSEs are related to the use of low-quality materials, yielding to problems after the product has been delivered to Europe. MSEs lack skills in financial control, marketing, production planning for on-time delivery and optimized use of raw materials, elements of quality management such as in-process control, good housekeeping, SOPs, and records. MSEs often do not have proper workshop arrangements. For medium size enterprises, improved efficiency could be achieved through the implementation of workshop management systems like 5S.<sup>164</sup>

#### **Step 4 – Finishing**

*Process Description:* The production process is finalized by sanding and finishing according to buyer requirements with oils or other treatments. During sanding, the surface of the wooden furniture is softened with sand paper, starting from coarse to fine paper. Then small holes are filled with wood filler. The next step is the application of chemicals to adjust the color and to provide a certain surface resistance.

*EQI Issues:* Finishing involves sanding and the application of chemicals to achieve a certain surface quality. This step is important since the customer usually focuses on this quality parameter in evaluating the product. The quality and composition of applied chemicals in this process are crucial to achieve the quality required by international customers. Imported high-quality chemicals with a turpentine, wax and linseed oil base are often used for higher quality export furniture. Many MSEs are unable to provide the required quality in this production step and are often not even aware of the required specifications in this production step. Due to the lack of quality in the finishing process exporters, but also companies selling in the local market, buy unfinished products and conduct the

<sup>164</sup> 5S' is the name of a workplace organization methodology that uses a list of five Japanese words which are seiri, seiton, seiso, seiketsu and shitsuke or sorting, straightening, systematic cleaning, standardizing, and sustaining. For more see [http://en.wikipedia.org/wiki/5S\\_%28methodology%29](http://en.wikipedia.org/wiki/5S_%28methodology%29)

finishing on their own. The added value of the finishing process is then lost for the MSEs.

Non-conforming products are often a result of various colors and chemicals used for finishing. The materials used are often part of the contract with exporters. However, still many small producers change to lower quality chemicals, yielding to products with reduced strength and colors that are not in accordance with contracts or samples. Even bubbles may appear on the furniture surface, and differences in colors are common. Knowledge on chemical specifications and usage is not sufficient in MSEs and could be improved.

Exporters face major challenges regarding this production step. Low-quality work is often not discovered immediately. After delivery, complaints are difficult and costly to correct, thus the financial loss of the exporter can be significant. Exporting companies, but also local retail companies, often take over the finishing process due to these quality problems. They want to ensure the quality of the finishing process and of the final product, so they only buy unfinished products from the producers. Usually they subcontract the finishing service to groups of workers, who are paid a lump sum amount.

*MSEs:* Often MSEs use low-quality chemicals for finishing in order to reduce costs. As a result, larger companies that are responsible for the export handle the finishing. MSEs in Jepara have a mindset that only focuses on the quality of the raw material of wood and workmanship when producing furniture. They do not clearly understand the importance of the finishing step. However, this quality-control strategy will not be successful without in-process monitoring or inspections by the exporters. The final inspection by buyers can only identify the visible failures. Many cases of low-quality products can only be recognized at the end-user level when they use the products. Therefore, the product quality could be ensured from the beginning of the process.

*Conclusions:* MSEs still have many shortcomings in the finishing process. Many MSEs use low-quality material. Knowledge of material and craftsmanship of MSEs are insufficient in the finishing production step. Consequently, exporters often take over this production step and enter the production chain by conducting the finishing in their own facilities.

### **Step 5 – Final Inspection**

*Process Description:* Deficiency in the quality of exported furniture cannot be improved due to high handling prices in Europe. If a piece of furniture needs some repairs in Europe, the cost for transport and repair would then eliminate all of the profit. Prior to shipment, conformity to European quality standards has to be ensured. A final inspection has to be performed before the products are packed. Usually the inspection is conducted in a visual manner, but sometimes easy measurements are performed for moisture content and dimensions.

*EQI Issues:* This inspection is important since after packing no more checks can be performed. Tests on product samples regarding EU product requirements are conducted if required by the buyers. Buyers or traders usually conduct a pre-shipment inspection on quantity and quality of the finished furniture products. Quality criteria consist of design and function as ordered, dimensions, construction, wood quality, humidity content, finishing, brass parts, and packaging. Pre-shipment inspections are sometimes conducted by the buyer's representatives, the trader or contracted agencies (e.g. Sucofindo). In Europe there are no mandatory inspections for product quality.

*MSEs:* MSEs usually do not perform final inspection for export goods. The final inspection on the quantity and quality of the finished products is conducted by the exporter.

*Conclusions:* In MSEs, the final inspection is still insufficient. MSEs are unaware of quality assurance in the internal inspection process. MSEs often do not define the quality criteria of all its products and are therefore also not able to conduct a proper inspection.

### **Step 6 – Packing, Storage and Delivery**

*Process Description:* After the products are considered acceptable in the final inspection, the goods

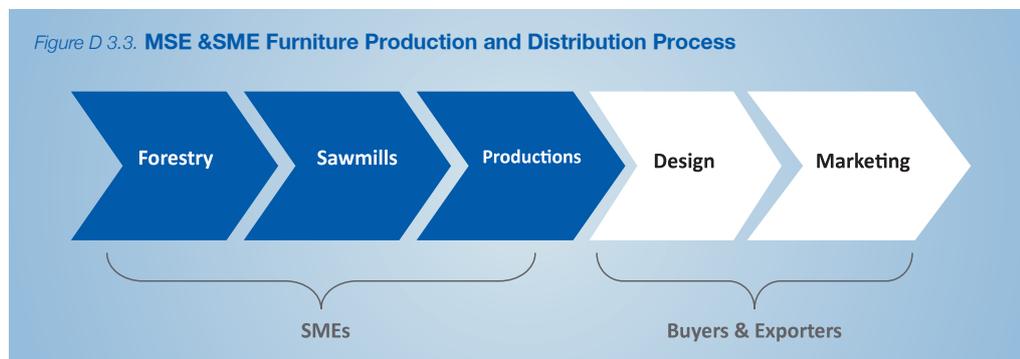
can be packed and stored in a warehouse. For delivery, a container truck is used to transport the products to the shipping port. All papers related to the shipment are prepared by the exporting company or a local service provider holding an export license. According to Indonesian regulations, products can only be exported by companies that have an export license.

*EQI Issues:* Packing must ensure that no damage can happen to the product during shipment. Quality issues in this production step are related to on-time delivery. Many MSEs have problems to conform to agreed delivery times. However, late delivery is actually a production planning issue and therefore discussed in this production step.

### Step 7 –Testing

*Process Description:* Finished products undergo safety tests in the laboratory. Usually these tests are conducted on samples before the production starts in order to obtain confirmation from the buyer regarding conformity.

*EQI Issues:* Some buyers in Europe demand certified safety tests for certain furniture products. In such cases, export companies in Indonesia test their products with foreign testing laboratories and institutions such as Technischer Überwachungsverein (TÜV) or Asian Pacific Inspection (API). One local testing institute is Laboratory for Quality Testing of Export and Import Goods, or Balai Pengujian Mutu Barang Export dan Impor (BPMBEI). BPMBEI is responsible for testing export products, including furniture. Many laboratories are combined in this institution such as instrumental laboratory, textile and toys laboratory, footwear laboratory, food laboratory, cosmetics laboratory,



furniture and electro and electronics laboratory. The laboratory also performs tests on safety for furniture. However, the buyers prefer certificates from internationally recognized institutions despite that fact that many tests can be performed in Indonesia. Indonesian producers prefer to conduct the tests in Indonesia as tests in other countries are much more expensive and time-consuming.

The furniture laboratory of BPMBEI conducts testing for the local market but also for Intertek, an international certifying company. Intertek thus deems BPMBEI as a laboratory that carries out tests to international standards. The tests for Intertek are based on international standards such as ISO 21015 for office furniture or DD ENV 581-2. Specifications for testing are provided by Intertek.

*MSEs:* Laboratory tests in the furniture industry address safety. For MSEs such tests are not a major issue, as their customers usually do not demand certification. Only larger companies ensure the furniture's safety by conducting tests and demanding certification.

*Conclusions:* Indonesian laboratories for furniture testing are not internationally recognized yet. One laboratory performing furniture testing is BPMBEI. The need for furniture testing in Indonesian laboratories has never been evaluated. Indonesian testing laboratories could cooperate with international or national product certification bodies. No information is available on whether furniture companies would accept an Indonesian certification body.

### D.3.2.2 Larger Furniture Producers

Larger furniture producers can produce furniture that is ready for export. They are able to produce according to the quality required in Europe. Only a final inspection is necessary, which can be performed by the buyer. Another option is that the buyer subcontracts a pre-shipment inspection company.

All activities, from wood purchasing to production, sanding, finishing, storage, packing, loading, preparation of export papers, transport to harbor and loading on board, is organized by the supplier. Such Free on Board (FOB) contracts reduce the workload of the buyer substantially. Many of the larger size companies are able to develop their own designs. However, most of these companies still depend on input from the buyer to produce designs in accordance with European needs. They also use machinery and can therefore better control the processes. This type of producer maintains internal quality controls and has an export license.

### D.3.2.3 Micro and Small Enterprises

The participation of MSEs in the value chain is described in Figure D3.3. MSEs mostly participate in raw material procurement, sawmill and production. They are rarely involved in the design and marketing phases of the distribution process. The design process is usually undertaken by the buyers, while marketing is carried out by the exporters. MSEs have limited involvement in export-related activities. Where they do participate, it is usually in the form of subcontracting arrangements with medium or large size enterprises, or through direct contacts with independent traders or trading companies. MSEs have difficulties in handling export documents. The minimum number of employees required to obtain an export license is 50 persons, which is not feasible for MSEs. MSEs are not interested in handling export themselves due to the difficulties in understanding exporting procedures. Additionally, they usually do not produce the required minimum volume of products to fill a whole container. They also do not have the marketing channels to other countries. Therefore they prefer to cooperate with larger companies or with traders/exporters.

Due to quality-related problems in the finishing process, MSEs often sell unfinished products that are then finished by the exporters or traders. The companies that take over part of the finishing process are also considered “semi-trading companies”. These “semi-trading companies” are not only involved in the trading but also the production, which usually entails the finishing stage. By handling part of the production, exporting companies share the production cost and also increase their share in the value chain. Some medium size enterprises are able to produce ready-to-sell products, so they approach traders directly. In those cases, the traders manage all export requirements, including visits, evaluations and inspections of buyers. The evaluations and inspections are usually made before the trading agreement or in between the production process in case the buyers want to see the production process.

*Marketing Activities:* MSEs have limited marketing capabilities. They lack the necessary knowledge to carry out marketing activities. Furthermore, they do not know how to develop their network and they lack long-term strategies for their business. MSEs usually serve a single buyer, and then become dependent on that buyer. They do not think it is necessary to expand their network or to increase the number of customers through marketing schemes.

### D.3.3. Business Constraints

The main business constraint that Indonesian furniture producers face is related to import into Indonesia. There are mainly three types of import in furniture production: import of samples from customers, import of raw material, and re-import of rejected goods.

Small and medium size companies rarely develop their own furniture designs. They produce their traditional designs or they receive designs from buyers. Buyers send samples of a type of product to ensure that the produced pieces will be identical to the sample. It is difficult to import such samples into Indonesia. Illegal levies can add up to US\$ 600 for one piece of furniture imported.

It is also difficult to import metal parts and other parts that are needed for furniture production, but are not produced in Indonesia. Also illegal levies are an issue here because it increases the price of imported goods significantly.

Sometimes consignments are rejected by the customer abroad. In such a case the container must be sent back to Indonesia. The high cost of returning a container back to Indonesia often makes it often unfeasible to re-import non-conforming products. Also, if the rejected products are re-imported these costs will add to the production cost.

These three issues related to import increase the cost of production. Elimination of these problems will increase the competitiveness of this sector compared to other countries.

*MSEs:* Generally, MSEs learn the appropriate technique of production through a learning-by-doing process. They often gain knowledge from their parents or other producers, especially for crafting methods. There are no formal institutions that teach MSEs in producing crafting furniture in Jepara. In some cases the craftsmen in MSEs obtain their knowledge from overseas customers and exporters. Therefore, MSEs have limited access for updates in information, R&D, and about production technology.

Many MSEs are self-employed enterprises without hired workers. There is little or no technological dynamism in MSEs.

- **Marketing:** Internal export barriers are usually associated with insufficient organizational resources for export marketing. Most MSEs in the furniture industry, such as in Jepara, are family-based, therefore the father or one of the family members is the manager. He usually has technical knowledge about furniture crafting that he acquired from the previous generation. However, he usually lacks managerial and marketing skills. Without proper management, MSEs are gravely hindered from increasing their export. Many MSEs lack information about marketing channels and fail to establish marketing networks. MSEs have insufficient market information and are unaware of where to find it. Most of them, especially the small-scale enterprises, do not use Internet for communication or for marketing. The chairman of ASMINDO said that marketing capabilities are the most internal barrier for MSEs when conducting export. This lack of marketing is the main reason why many MSEs only serve and depend on one exporter or buyer.
- **R & D and Knowledge Transfer:** The majority of the MSEs focus only on the production and how to accomplish the orders. No periodic capacity building is performed. Only some MSEs are truly engaged in interactive learning. As the design is mostly advised by the buyers, MSEs feel necessary it is not necessary to conduct R & D activities. Many MSEs also serve only one exporter or buyer, so there is also no significant knowledge improvement in MSEs because they recreate similar designs with the same technology. According to the Chairman of ASMINDO, at the moment there are some medium size enterprises that already have their own Research and Development Department, especially for design innovation. These enterprises even hire designers from other countries such as the Philippines. ASMINDO also conducts many training activities for capacity building of its members. Seventy-five percent of the ASMINDO members are MSEs and SMEs. However, they are not active within the association. A lack of awareness of long-term strategies makes the SMEs and MSEs uninterested in actively participating in the association. There are some formal high-schools and higher level education for furniture production and furniture design. The most well-known and qualified institution is PIKA (high school and academy). The schools also provide trainings, class trainings and on-the job trainings for the community at affordable prices. Many MSEs are unaware of the presence of educational institutions in the furniture field.
- **Financial Management:** A sound financial position is one of the keys to secure price advantage in the target market. Many MSEs run into problems for lack of timely and adequate working

capital, which not only adds costs but can also endanger the entire production operation. MSEs in Jepara have this problem from time to time but do not learn to improve. No proper financial planning is conducted. Besides endangering the production operation, they also do not have sufficient capital for the maintenance of machines or to replace it with a new one. Many MSEs also cannot afford important machines such as a dry kilns, which means they conduct manual drying, impacting the quality of the products. ASMINDO suggests its MSEs and SME members to import used machines, but the problem is that the import tax is still too high, so that MSEs and SMEs cannot even afford used machines.

- **Human Resources:** Most of MSEs employ workers from its family and relatives. It is rare that they employ professional workers with a sufficient educational background and the necessary experience. New workers have little experience in furniture production, and often have an agricultural background instead. Women and children are also employed. As workers gain more skills, they tend to move to different producer groups in Central Java that offer better wages.
- **Competition with Domestic and Foreign Competitors:** MSEs compete with each other on sales price instead of quality and design. Medium size enterprises compete with foreign competitors such as China, Taiwan and Vietnam. According to one of the medium size enterprises that were interviewed for the present study, the strength of Chinese and Taiwanese furniture production is in using joint-finger technology. Indonesian furniture, especially Jepara products, has its strong point in carving. Jepara carved furniture is unique but it could be developed to suit modern designs.

*Recommendation:* MSEs could improve not only technical skills for production but also managerial skills, marketing and simple financial control. MSEs could not be exclusively managed by family members. They could welcome professionals with the suitable education background and sufficient experience in running the firm. It is also recommended that producers visit each other frequently to discuss their production problems and share innovations.

Industry associations like ASMINDO could play an essential role in informing, strengthening and representing MSEs. Associations have to be active in supporting their MSE members in the field of standards, regulations and marketing. There could be a mechanism where established firms can share their knowledge and technology to MSEs. For instance, associations can provide a forum and systematic training.

#### **D.3.4. Labeling on Sustainable Forestry**

One of the central issues of product quality is the origin of the wood. The types of wood mostly used for furniture are teak, merbau, meranti, mahoni, yellow balau / bangkirai, and also Rotan. Teak is by far the most popular used wood and comes from plantations, while others are sourced from the forest. Even though teak wood is plantation wood, all movements of teak and other wood must be certified by the Government. This certificate shows the origin of the wood as it is mentioned in the certificate. In practice, however, such certificates can be obtain illegally.

The condition of the forests in Indonesia is deteriorating. The Forest Stewardship Council (FSC) certification is the most sought-after certificate by German customers who want evidence that the purchased product does not negatively impact the rainforest. This label is voluntary, but due to strong customers' demand it has become mandatory for many larger Indonesian manufacturers that are looking to penetrate European markets. The label is used all over Europe although some import companies like to cooperate with The Forest Trust (TFT). The number of European retailers asking for the FSC certification is steadily growing and the Indonesian suppliers have to adapt themselves to the current situation. The European Union has developed an Eco-label for wooden furniture, but it seems that the customer's demand for this label is limited. Therefore, there has been no indication that Indonesian suppliers are required to use this label. Some European buyers try to protect their business initiatives by providing support and assistance for villages or communities in

developing their sustainable plantation business. One initiative that provides labels on sustainable forestry without a traceability system is Trees4Trees.

#### **D.3.4.1 Forest Stewardship Council**

The Forest Stewardship Council (FSC) is an international non-profit, multi-stakeholder organization established in 1993.<sup>165</sup> The FSC promotes responsible management of the world's forests. It offers standard setting, independent certification and labeling of forest products, thereby providing customers around the world the ability to choose products from socially and environmentally responsible forestry. Products carrying the FSC label certify that they are sourced from forests that are managed to meet the social, economic and ecological needs of present and future generations.

The FSC mission is to promote environmentally appropriate, socially beneficial and economically viable management of the world's forest. Environmentally appropriate forest management ensures that the harvest of timber and non-timber products maintains the forest's biodiversity, productivity, and ecological processes. Socially beneficial forest management helps both local people and society at large to enjoy long-term benefits and also provides strong incentives to local people to sustain the forest resources and adhere to long-term management plans. Economically viable forest management makes sure that forest operations are structured and managed to be sufficiently profitable, without generating financial profit at the expense of the forest resource, the ecosystem, or affected communities.

Forest management certification is a voluntary process. As the FSC does not issue certificates itself, the certification process is carried out by certification bodies. Certification bodies must gain FSC accreditation, verified by Accreditation Services International (ASI) – the company managing the FSC accreditation program – through office audits and the witnessing of one trial audit in the field prior to gaining FSC accreditation.

All FSC certified management practices must comply with the social and environmental standards of the FSC Principles and Criteria. The principles and criteria require that forest management is compliant with national legislation, respects local use rights and indigenous peoples' rights, maintains the ecological functions of the forest and its biodiversity, enhances the economic viability, and carries out adequate management planning and monitoring of the operation.

#### **D.3.4.2 The Forest Trust**

The Forest Trust (TFT), formerly Tropical Forest Trust, was established in 1999 as a non-profit international organization striving to address the problem of deforestation.<sup>166</sup> TFT works with companies and communities to help them trade Forest Responsible Products.

Trade of forest responsible products is accomplished through working in supply chains to set up traceability systems and assist producers towards sustainable forest management. TFT member companies are committed to sourcing timber from TFT forest projects and Forest Stewardship Council certified forests.

TFT's mission is to help ensure that forests are managed for the long-term future in order to maximize their value to people, wildlife and the environment. TFT supports forest projects with expert advice, and links projects with responsible buyers committed to sourcing sustainable timber and other responsible forest products. TFT also aims to raise awareness regarding the importance of saving endangered forests and the benefits of responsible trade. Consequently, TFT's objective is to expand the forest area that is independently certified and well-managed, ensuring that responsible products from these forests find markets.

<sup>165</sup> The material in this section draws from information in [www.fsc.org](http://www.fsc.org) and [http://en.wikipedia.org/wiki/Forest\\_Stewardship\\_Council](http://en.wikipedia.org/wiki/Forest_Stewardship_Council)

<sup>166</sup> The following material draws from information in <http://www.tft-forests.org>

#### D.3.4.3 EU Eco-label for Wooden Furniture

The Community Eco-label or „Flower logo“ is the official EU mark for products with the lowest environmental impact. The Eco-label not only promotes but also assists consumers in identifying those products that notably contribute to improvements in environmental issues. The Eco-label is voluntary. Wooden furniture that can be certified is a product group that refers to free-standing or built-in units for either indoor or outdoor use. The wooden furniture can have domestic or business purposes (e.g. furniture for offices, schools and restaurants).

Products that are manufactured outside the European Community must present their applications to a Competent Body of the Member State in which the product is to be placed on the market. The application must include all relevant documentation to verify that the product meets the ecological and performance criteria.

Products that are awarded the Community Eco-label must meet certain criteria. The criteria include product description, hazardous substances, wood and wood-based material requirements, criteria for surface treatments, criteria for the assembly of furniture, and criteria for the final product. There was no indication found in Indonesia that the EU Eco-label is relevant as an export requirement into the European Union. Nobody interviewed was aware of this label.

#### D.3.4.4 Trees4Trees

Trees4Trees<sup>167</sup> is a non-profit organization in Indonesia founded by furniture manufacturers and their customers. Managed by a team of experts from Indonesia, Australia, the United States, Denmark and England, the foundation is active in partnership reforestation initiatives and education programs.

Trees4Trees aims to reduce the negative effects of deforestation and restore the environment through the increase of community planted and owned forests. The foundation distributes free seedlings to local farmers and resident land owners in Indonesia. The seedlings include high-value seedlings such as teak, mahogany, mango and other furniture grades. Besides offering technical guidance on planting and forestry practices, the foundation also supports outreach educational programs in local communities and schools in order to raise awareness about the environmental and economic advantages of growing healthy trees.

In the 2008/2009 planting season, Trees4Trees planted over 200,000 trees. Manufacturing and retail contributors support the foundation's program through funds that replace the trees used in the manufacture of their products. Currently the foundation focuses its tree planting and educational endeavors in Central Java, Indonesia. However, it is aiming to expand its activities to other locations in Indonesia and abroad.

#### D.3.4.5 Ecolabel LEI from Indonesia

This Ecolabel is not relevant for export since it is not known in Europe.

#### D.3.4.6 Forest Law Enforcement Governance and Trade<sup>168</sup>

The illegal logging regulation is a key measure of the FLEGT Action Plan put forward by the European Commission in October 2008. In May 2010 the European Parliament approved an agreement that ban the sale of illegally logged timber or timber products to the EU market where timber and wood products are sold. Expected to be in effect in late 2012, the regulation will require traders to retain information about the origin and legality of the timber to be exported, so that illegal timber does not enter the EU market. To ensure traceability all actors in the supply chain have to declare the organization they bought from and they are selling to.

<sup>167</sup> For details, see [www.trees4trees.org](http://www.trees4trees.org)

<sup>168</sup> The following is based on material received from EC Delegation, "FLEGT and possible consequences for Indonesian timber trade", without year.

The European Union intends that the illegal logging regulation will ensure equality and fairness between those countries that are currently concerned with illegality and those that are selling cheaper, illegally harvested timber products. European traders will have the obligation to meet basic due diligence requirements. The regulation will encourage traders to buy and sell low-risk timber rather than high-risk timber, thus reducing the number of illegal timber products in the EU market. Finally, the regulation will prompt timber-producing countries to complete FLEGT Voluntary Partnership Agreements with the European Union in order to establish timber tracking and legality verification schemes, since FLEGT licensed timber will be considered legal in the context of the regulation.

Voluntary Partnerships Agreements (VPAs) between the European Union and timber-producing countries will avoid unwarranted constraints and assure legality. FLEGT timber is exempt from the Due Diligence requirements due to its established legality. Countries that have completed a VPA have a great advantage over those that have not. Ghana, Congo Brazzaville and Cameroon have already concluded FLEGT agreements with the European Union. A number of other timber-producing countries such as Malaysia are currently in negotiation with the European Union. The proposal only addresses legality, yet sustainability can be considered as a part of legality as many countries derive their forest legislation from the idea of sustainable forest management.

Indonesia began FLEGT negotiations in January 2007, thus developing a Timber Legality Assurance System (TLAS, locally known as SLVK). To support this VPA, Indonesia has stipulated “Standards and Guidelines on Assessment of Performance in Sustainable Production Forest Management and Timber Legality Verification”<sup>169</sup> and “Guidance of Performance Evaluation of Sustainable Production Forest Management and Timber Legality Verification”<sup>170</sup>. The system aims to ensure sustainable forest management of state owned plantations, private owned and community owned plantations. Through sustainable forest management the Government of Indonesia wants to ensure that people will gain a sustainable income, conserve the environment, and minimize natural disasters such as landslides. The usage of legal wood will be verified by independent certifiers accredited by KAN (e.g. Sucofindo, TUV, Agung Lestari). If the VPA negotiation is concluded, these organizations will provide the necessary export licenses for the European Union’s market demand.

Currently, Indonesia and the European Union are implementing the EC-Indonesia FLEGT Support Project. This project aims to assist the Government of Indonesia in tackling illegal logging. “The Project focuses on addressing the underlying issues that are responsible for illegal logging. Development and application of Sustainable Forest Management (SFM) principles through good governance, harmonization of relevant laws and maintaining dialogue within the forestry and associated sectors in Indonesia forms the key components of the project. The focus for intervention is to assist Government of Indonesia, civil society and the timber industry to achieve sustainable forest management through a program of capacity building, awareness raising, governance reform and timber legality certification. The project will operate at central, provincial, district and community levels.”<sup>171</sup>

#### **D.3.4.7 Discussion of the Labeling Systems**

FSC and TFT labels are based on the traceability of wood through the whole supply chain. Furniture producers need a good management system to control such a tracking system. MSEs are not able to establish such a system. Critics in Indonesia say that the FSC label does not ensure that the certified wood comes from natural forests. They also argue that teak wood for furniture does not need such certification since all teak in Indonesia comes from plantation and it is not indigenous to Indonesia. In addition, the high price of the certification makes it impossible for MSEs to afford the certification and they have a disadvantage in export trade as a result. The largest supplier of wood, Perhutani, is not FSC certified anymore due to some social issues. Thus, it is currently difficult to get

<sup>169</sup> See regulations of the Ministry of Forestry P.38/Menhut-II/2009 and Director General of Forestry Production Development P.6/VI-Set/2009

<sup>170</sup> Director General of Production Forest Development Guidance P.02/VI-BPPHIH/2010

<sup>171</sup> Source: [www.eu-flegt.org/aboutus\\_detail.php?pkid=7&lang=en](http://www.eu-flegt.org/aboutus_detail.php?pkid=7&lang=en)

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real FSC certified raw material. The price of FSC certified teak wood can be as high as double the price of non-certified wood.

The Trees4Trees label is not based on a tracking system of the wood but instead it is based on re-forestation and sustainable forest management. This system is much easier to implement than a tracking system since the complicated supply chain documentation is not necessary. Trees4Trees obtains its funds from the exporters and buyers, who are joining the program. These funds are used for re-forestation and forest management programs in cooperation with local people and communities. Eventually the community will make a profit from the Trees4Trees program activities. Once the communities have established a sustainable forest, they can profit from selling the wood.

Indonesia currently plans to make the VPA system mandatory for plywood and veneer only. Nevertheless, other industries can join the system on a voluntary basis. Due to the large market of Indonesian furniture in the European Union, Indonesia could consider including furniture in the system. Implementing the SLVK and concluding the VPA negotiation are only the beginning stage. The execution of the new system will be the toughest challenge. Key stakeholders involved in the development of the SLVK must be competent to implement the new system. If the SLVK is not implemented satisfactorily, Indonesia's image on the markets can further depreciate.

SMEs are aware of labeling systems like the FSC, but MSEs often do not have information on labels. All companies interviewed did not know about the upcoming FLEGT system and the probable impacts on their business. The cost of such certification can be too high for MSEs. The Government of Indonesia wants to support MSEs and SMEs and community forests through a bundling scheme that will reduce the cost of the certification. The Government of Indonesia will also financially support MSEs and SMEs for certification. However, the set-up, conditions and fees for such a bundling system are not defined so far. Currently the exact requirements, which have to be fulfilled by the importers, are not clearly defined. The penalties for importing illegal furniture have also not been defined and will depend on the importing country.

Conclusions: A four step program is recommended: (1) dissemination of information, (2) discussion between the stakeholders, (3) development of strategy, (4) development of action plan including pilot projects. Dissemination and clarification of processes on legal wood and the sustainability of wood supply are important issues since the stakeholder still do not have all the necessary information. Associations and producers currently do not have sufficient information on the existing certification schemes and the upcoming FLEGT system. Information has to be disseminated and alternative measures have to be discussed among the stakeholders. Indonesian stakeholders could develop a clear strategy regarding legal wood and sustainable forestry for the furniture production. Although in Indonesia teak always comes from plantations, it could be clarified whether teak wood furniture must be included in such a system. Alternatives like FSC and Trees4Trees could be considered in the discussion as well. Many MSEs will be affected by a new wood certification system. Financial feasibility and future development of MSEs under a wood certification system will be highly regarded. Farmer groups of community forests could also take part in the discussion. The impact of a wood certification system could also seriously harm the farmers. Activity plans have to be developed based on the strategy plan. The programs, projects and the activities must be designed to achieve the objectives of the strategy planned. Forum group discussions could be used for evaluating the opinion of the MSEs and farmer groups. Workshops would be an adequate forum to gather information on the positions from all stakeholders as well as to find a strategic position on sustainable forestry in Indonesia. The results from the forum group discussions will provide a valuable input to the workshops about the positions of the MSEs. Producer and farmer groups are an efficient tool to ensure effective implementation of illegal wood measures in MSEs.

### D.3.5. Business Support and EQI Information Access

#### D. 3.5.1 Institutional Mechanisms

There are several government and private sector institutions supporting the Indonesian furniture industry. The Ministry of Finance supports the restructuring of the budget provision of machinery and the regulations of imported goods, especially for samples and intermediate goods. The National Standardization Agency (BSN) develops national standards, often based on international standard requirements. Furthermore, research centers, universities, and other R & D institutions develop technologies and standards.

Associations also provide support for furniture producers. The largest association is ASMINDO (Asosiasi Industri Permebelan dan Kerajinan Indonesia; the Indonesian Furniture Industry and Handicraft Association). A regional association exists in Jepara: Asosiasi Pengrajin Kecil Jepara (APKJ - Small-Scale Furniture Producers Association). ASMINDO supports the exporters, finishing companies and mechanized furniture producers, while APKJ represents small-scale producers. Balai Pengujian Mutu Barang Ekspor Impor (BPMBEI) is a laboratory that provides quality and safety testing for furniture. Two user groups have been identified in Jepara, one user group owns a saw mill, the other a dry kiln. The manufacturers in Jepara assess the two user groups as efficient. These groups exist to manage equipment that MSEs cannot afford. The members get a special discount if they use the equipment of the group.

*ASMINDO*<sup>172</sup>: Furniture producers in Indonesia are represented by ASMINDO, which was established in August 1988. ASMINDO's Regional offices were established in the districts afterwards. ASMINDO is an independent association with the primary objective to represent and promote the interests of Indonesia's furniture and handicraft industries. The Association plays an important role as the official body where its activities are maintaining regular dialogue with the government and providing consultation with the various government agencies as well as for the domestic and the international private sectors. ASMINDO is involved in initiatives to further develop Indonesia's furniture and handicraft industries, including improving quality control, promotion and marketing. ASMINDO represents more than 2000 member companies, all of which are engaged in the manufacturing and exporting of furniture and furniture related products, wood working and also handicrafts. The main strategic programs of ASMINDO are related to: Marketing and promotion (organizing companies for trade fair participation), securing raw material supply and financing, warehouse management for raw materials, and channeling of financial resources provided by the Ministry of Cooperatives to MSEs and SMEs.

ASMINDO also conducts seminars, training and forums for its members on topics such as international marketing, export strategies, furniture design and finishing. ASMINDO participates in major international trade furniture shows and organizes the Indonesia Annual Furniture Fair IFFINA (Indonesia Furniture & Craft Fair).

ASMINDO is established on a national and regional level. The membership fees are received by the regional offices. The national office has to finance itself by conducting other activities that yield a fee. ASMINDO is active in performing trainings and organizing fairs. However, with a membership of 2000 companies only some of the companies can be served. The national office of ASMINDO in Jakarta seems to be well-organized. They are informed about ongoing discussion on sustainable forestry like FLEGT<sup>173</sup>, the Japanese Green Konyuho system for green procurement policy of public agencies<sup>174</sup> and US Lacey Act on illegal wood<sup>175</sup>.

Recently, ASMINDO opened a business unit named ASMINDO Care Certification (ACC). This new business unit provides consulting services to facilitate the certification of wood products. The ACC is expected to help as many ASMINDO members in obtaining certification of their products.

<sup>172</sup> The following is derived from brochure: ASMINDO, Indonesia furniture & craft, Directory 2010

<sup>173</sup> See for instance <http://www.eia-global.org/lacey/P6.EIA.LaceyReport.pdf>

<sup>174</sup> See for instance <http://www.indonesianembassy.jp/kehutanan/GreenKonyuho.pdf>

<sup>175</sup> In 2008 the United States passed a law to ban import of wood from illegal sources

APKJ: More than 60 furniture producers in Jepara are organized by the Jepara Small-scale Furniture Producers Association (Asosiasi Pengrajin Kecil Jepara or APKJ), which was founded in 2009. The association enhances collaboration among producers and improves their bargaining power. The members can market their products more easily at trade fairs when they are represented by an organization. Individual manufacturers usually cannot afford the trade fair fees and costs. APKJ also supports local forest conservation by ensuring the wood used by the members comes from legal sites and is harvested sustainably and efficiently.<sup>176</sup> No information on APKJ was available with the parties interviewed.

BPMBEI: The Laboratory for Quality Testing of Export and Import Goods (BPMBEI) provides testing on furniture for various safety parameters. Other existing laboratories are controlled by the Ministry of Trade (Pusat Pelatihan Export Import; Export Import training centre, in Slipi, Jakarta) and under the Ministry of Forestry (Litbang Perhutanan; Forest Research and Development Division). BPMBEI is well-equipped with measurement devices for testing on furniture but they do not provide information to Indonesian furniture industry. The laboratories are not well-known in the furniture industry.

*Conclusions:* ASMINDO appears to be an active and effective association that provides many services to its members. ASMINDO and APKJ could play different roles in the capacity building program. ASMINDO has the resources for country-wide activities, while APKJ focuses on the producer in Jepara. ASMINDO has a large number of members and is active in providing support to its members. It would certainly be an advantage to involve them in projects on a national level like FLEGT or national quality improvement programs. ASMINDO seems to be the best choice to disseminate information considering that they have many office branches with number of members. ASMINDO could also be included in the dissemination of training and other supports after the completion of successful pilot projects. Local branches of ASMINDO can play a role for the activities at the district level. APKJ could be assessed in order to be qualified to join the possible projects with MSEs in Jepara. APKJ could probably facilitate establishment and development of producer groups as well as organize activities like pilot projects in Jepara.

### D.3.5.2 MSE Knowledge of EU Market Access Requirements

As part of the present study, interviews were conducted with MSEs and a structured questionnaire was used to gather information about their perceptions and awareness of market access conditions in the European Union. The findings of the survey are as follows:

- **Awareness on EU Standards:** MSEs are generally unaware of EU market access standards. They do not know the name of the standards and what the standards refer to. It follows that they are also unaware of what institutions provide certifications such as FSC and Eco-Label. Some of the traders interviewed stated that even though the MSEs knew about these certification schemes, the price would not be affordable for them. Furthermore, they state that they do not have the necessary capability to understand the standards. Nevertheless, MSEs understand that many buyers are concerned about illegal logging. They are also aware of the traders' need to ensure that the buyers' requirements are met. In general, MSEs see standards and regulations as a constraint instead of a tool to benefit them. MSEs perceive the standardization process as being inflexible. Furthermore, MSEs are often unaware of how they can find the standard documentation. They admit that what they consider to be tighter requirements would force them to produce better quality products.
- **Awareness on design required by EU customers:** Producer awareness about the design required of EU customers is rudimentary. The standard requirement on design includes dimension, shape, ergonomics and combination of material used. Of course, fashion and style are important as well. The buyers in Europe usually create the designs. They send their designs to exporters via email. Then the exporters pass it to the producers. Sometimes the buyers send

<sup>176</sup> See also <http://www.facebook.com/topic.php?uid=46013352311&topic=14691>

a sample of the product to Indonesia. Exporters have to brief the producers about the new design. Once one manufacturer produces it, other producers in the area will begin producing it as well. That is how new designs begin in Jepara. There is no innovation or creativity from the producers themselves. MSEs could indicate the trend through the order of buyers. By replicating orders with new designs, they could introduce new products into their production. However, such an approach would unfortunately reduce creativity and all products would look alike. They merely manufacture the products exactly the same way. There are also no analyses among MSEs if one design is not up-to date or if it does not suit the market demand anymore. For example, in Jepara they produce carved furniture even if there is no more demand for it. They claim carved furniture is their trademark, a heritage style. A uniqueness and heritage style would be powerful for marketing, but it has to be combined with creativity to ensure that the products are current. The carving could be adjusted so that it can be combined with modern furniture. This blending of traditional and modern styles is what the European buyers try to do. They invite the talented craftsmen to Europe to teach them how to carve.

- Awareness on Government and Association support: The findings of the survey reveal that MSEs are unaware of government programs or agencies supporting activities that would help producers access the EU market. Some MSEs are aware of the ASMINDO regional offices, but they do not believe that they would benefit from its services. As a result, they are reluctant to join the association.

### D.3.6. Regulatory Framework

*Use of Forest Resources:* The Ministry of Forestry is charged with the regulation and control of forestry resources. It carries out its activities based on five strategic objectives: (i) elimination of illegal logging and illegal trade; (ii) revitalization of the wood-based industry based on sustainable development activities; (iii) rehabilitation and conservation of the forests; (iv) empowerment of people in community-based forestry management; and (v) protecting the forestry environment. Sustainability of wood-based activities is being promoted through plantation development activities under Law No. 41 on Forestry, dated 30 September 2009. Implementation of the law is provided by Ministry of Forestry Decree No. 1.10/, Kpts-II / 2000 on Guidelines for Granting Permit Utilization of Wood Forest on November 6, 2000. It provides for (a) registered Forestry Commercial Enterprises can ask for the development of forestry plantations in areas that are vacant and are free of natural forests; (b) transformation of natural forests into plantations must be approved by Parliament and approved by the Ministry of Forestry; and (c) plantations cannot be developed in land with steep slopes to avoid excessive erosion. Other decrees from the Ministry of Forestry cover best-practice management of production planning, harvesting and cutting, testing and measurement, transportation and storage, processing, and performance evaluation.<sup>177</sup>

*Wood-Based Export Products:* Indonesia's exports of products from forest industries are currently regulated by Minister of Trade Regulation No. 02/M-DAG/PER/2/2006 on Rules on Export of Products of Forestry Industries, dated 2 February 2006.<sup>178</sup> It provides for rules on the export of products of forestry industries. Products of forestry industries are specified in Attachment I. Forestry companies certified as Registered Exporters of Products of Forestry Industry (ETPIK) by the Minister of Trade may export products of forestry industries (arts. 4 to 6). Article 7 specifies the documents necessary to obtain a certificate of ETPIK. Companies that own a certificate of ETPIK may undergo inspection to verify the legality of documents, export and production activities, etc. (arts. 8 and 9). Forestry companies certified as ETPIK must submit to the Director General of Foreign Trade annual production plans, realization of production per semester, annual export plans, and export

<sup>177</sup> Lubis and Hakim, "Forest Product Management and Administration: Information and Technical Guidance for Reconstruction and Rehabilitation of NAD and Nias". BRR and UNDP, Banda Aceh, 2007.

<sup>178</sup> Minister of Trade Regulation No. 09/M-DAG/PER/2/2007 on Provisions on the Export of Products of Forestry Industry. Available: <http://faolex.fao.org/faolex/index.htm>. The the Basic Forestry Act (No.5/1997) and the Forestry Law (No.41/1999) the primary source of guidance for all forest administration and regulations. It enables forest areas to be classified and delineated according to functions (e.g. protection, production, nature reserves and recreational purposes).

realization per semester (art. 10). Articles 11-14 contain provisions on the suspension, reactivation and revocation of ETPIK Certificates.

*Imports of Sample Products from Prospective Overseas Buyers:* Taxes and quarantine requirements place a heavy burden on the furniture industry, especially for the development of low-cost bulk furniture manufactured by multinationals sourcing their products from companies in Indonesia. Under Ministry of Finance Decree No 140/1997, imports of sample wood-based products from prospective overseas buyers are subject to a 10 percent ad valorem duty, a 10 percent value added tax (VAT), a 40 percent tax on luxury goods, and a 2.5 percent income tax. Quarantine requirements also apply to medium density fiberboard (MDF) imports under the International Standards for Phytosanitary Measures (ISPM).

EU-Indonesia Action Plan for Forest Law Enforcement Governance and Trade (FLEGT): EC-Indonesia FLEGT Support Project is a cooperation project between the Government of Indonesia and the European Union to promote the role of forests in the sustainable and equitable development of Indonesia. The Government of Indonesia and the European Community are negotiating a Voluntary Partnership Agreement (VPAs) that would support forest sector reforms in Indonesia and prevent illegal timber and timber products from entering the EU market.<sup>179</sup> So far there have been three Senior Officials Meetings (SOMs) between the EC Delegation and the Government. In the latest meeting held in Jakarta during March 2010, the Delegation conveyed the progress on a proposed new EC legislation "Due Diligence Regulation", which is expected to be approved as EU legislation by the end of 2010. It will require EU timber importers to take measures to minimize the risk of illegal timber entering the EU market. The draft regulation foresees that timber imported from countries that have concluded a VPA will be considered as legal. Implementation of VPA would give a significant advantage to timber products from VPA partner countries. Indonesia is currently considering becoming a signatory to the Voluntary Partnership Agreement.

### D.3.7. Case Study of Furniture Manufacturer

PT Furniture Jerman (PTFJ) is a furniture trading company based in Germany with an exclusive supporting unit called PT Furniture Indonesia (PTFI) in Semarang, Indonesia. PTFI acts as the sole furniture manufacturer for PTFJ.<sup>180</sup> The parent company, PTFJ, is a wholesaler that supplies furniture to retailers in Germany and neighboring European countries; it has become a leading supplier of high-quality garden furniture in the EU market. Its subsidiary, PTFI, focuses its activities on the quality control of goods manufactured by Jepara furniture makers and, when necessary, re-assembling products. German representatives of PTFJ oversee all of PTFI's operations.

PTFJ was founded in Germany in the mid-1990s to supply teak garden furniture to European customers. It currently distributes its products to European retailers located within Germany and in Austria, the Czech Republic, Denmark, the Netherlands, and Switzerland. The company's vision is to provide innovative indoor and outdoor teak furniture and to instill environmental and social awareness in its customers. In 2005, for example, the company raised more than 300,000 Euro from its stock clearance sale to help tsunami victims and rebuild the city of Banda Aceh in Indonesia.

During the first decade of operation, PTFJ received its products directly from Jepara-based furniture makers. However, lack of quality control and high rejection rates by European customers led PTFJ to establish PTFI as a subsidiary in Indonesia in mid-2006. PTFI's main task is to maintain quality

**Box D3.2. Value of PTFI's Defective Products**

	2006	2007
Defective Products (1000Rp)	6,000,000	144,906

<sup>179</sup> For details about FLEGT, see <http://ec.europa.eu/environment/forests/flegt.htm>.

<sup>180</sup> This case study is a summary of Anantadjaya, Sam P. D. and Yudha, Maika Nova, "Value Creation Analysis on Indonesian Furniture Manufacturers: A Case Study of PT. Furniture Indonesia". Presented at Second Indonesia International Conference on 'Innovation, Entrepreneurship and Small Business', July 15, 2010. Available at SSRN: <http://ssrn.com/abstract=1645790>.

control on furniture supplied by local enterprises and, as such, it effectively operates as a quality-control center, with the objective of adding value to products sent to Europe. This system ensures that products sold through its distribution center in Europe meet international quality standards. PTFI currently operates with over 200 employees.

#### **D.3.7.1 Quality Control**

The data in the accompanying table demonstrates that PTFI dramatically decreased its rejection rates between 2006 and 2007. Rejections of products originating from Jepara producers in 2006 represented over half of the parent company's total product rejections and amounted to a Rp 6 billion loss to the company. Once PTFI was established, product rejection rates fell to about 6 percent of total shipments to PTFJ.

Under the present operating system, the PTFI Quality and Production Manager is a German representative from PTFJ, who is responsible for performing quality controls on furniture supplied by local producers. His duties include confirming the initial quality control conducted by the Head of Production and Quality in PTFI. The objective is to apply standardized quality control criteria to the finished products in Jepara.

Only one-fourth of furniture products supplied by Jepara manufacturers meet PTFI's quality standards. About one-half of those that are acceptable still require minor refinishing to ensure that the products meet the company's quality standards. Refinishing costs represent approximately 10 percent of the purchase price from local manufacturers. Occasionally, PTFI offers the rejected products that cannot be refinished to local consumers at substantially discounted prices to avoid shipping costs that would otherwise be incurred from returning the product to local manufacturers.

#### **D.3.7.2 Cost Reduction**

PTFJ has achieved significant cost reductions by sourcing its products from Indonesia. From the start, it has benefited from low labor costs in Indonesia and sourcing raw materials from nearby forests. Since establishing its subsidiary PTFI, it has further benefited from substantial improvements in quality controls, the location of PTFI in free-trade zone (kawasan berikat) and, more recently, cost reductions associated with the effective devaluation of the Rupiah relative to the Euro (Table D3.1).

#### **D.3.7.3 Forest Stewardship Council Certification**

All of PTFI's products have Forest Stewardship Council (FSC) Certification. FSC-certified products provide more value adding to furniture compared with products that are not sourced from FSC-certified forests. Marking each product with the FSC label not only maintains PTFJ's reputation as a high-quality furniture wholesaler, but it also allows retailers selling the furniture in Europe at a higher mark-up price. The label demonstrates the value to furniture producers from using wood from forests that are managed in sustainable manner.

#### **D.3.7.4 Lessons Learned from PTFJ's Experience**

The majority of local furniture makers in Jepara currently lack the technical capacity and knowhow to meet the quality standards in the European Union. One way to overcome this limitation is to establish a quality control center directly responsible to the exporting company. It should include finishing and reworking capabilities since a large number of local furniture makers supply pieces that can be brought up to EU standards with some modifications to the product. While those modifications are usually modest, finishing rework adds substantial value to the final product. Another way to add value to furniture products is to use a certification system that demonstrates that the wood is sourced from sustainable forests, a process that allows retailers to mark up the price of furniture sold in the EU market.

## D.4 Summary and Conclusions

The European Union has a fast growing market for furniture. Demand for third country imports of furniture has expanded by an average of 8 percent a year in the last decade, and it is expected to accelerate to an annual growth of 9 percent over the next ten years. Requirements to access the EU market are not as extensive as in many other subsectors. The main one for furniture relates to the condition under FLEGT that, starting in 2013, all wood-products will be required to be accompanied by information about the origin and legality of the wood contained in the product.

The Indonesian furniture industry has a considerable opportunity to improve its presence in two market segments of the European Union. The first is ready-to-assemble furniture for the low-end market, which is composed of low-price products suitable for mass consumption; the other is artisanal furniture made of solid wood, which is destined for the high-end market. Medium to large size enterprises have the production and networking capacities needed to fabricate ready-made furniture, while smaller producers have the skills and know-how to make traditional and artisanal furniture. Using those capabilities to expand exports to the EU market in a substantial way will require that the industry and the Government adopt measures aimed at overcoming existing EQI constraints. To date, those constraints have undermined Indonesia's competitiveness relative to large furniture suppliers like China, Vietnam and Malaysia, as well as major producers within Europe like Germany, Italy and Denmark.

The challenges to realizing Indonesia's export potential are largely concentrated in supply-side constraints of the furniture industry. Production costs and exchange rate pass-through into the export price of Indonesia in the EU market have, at times, significantly impacted trade. However, on average, that impact has been less than expected with competitors like China and Vietnam. Instead, it is non-price factors that have consistently undermined Indonesia's exports to the EU market, a situation that has lowered buyer perceptions about Indonesian furniture quality, design and delivery reliability. These non-price factors can be grouped into four categories: (1) supply-chain weaknesses in both internal and external production processes affecting quality levels; (2) the large number of MSEs operating in the industry that lack networking capabilities able to provide direct export services to foreign markets; (3) weak institutional support from both business organizations, and the Government's lack of a well-defined strategy and action plan for the subsector; and (4) EU market access challenges under the FLEGT, which could be facilitated by the successful negotiation of a Voluntary Partnership Agreement between Indonesia and the European Union.

Specific findings on the supply side are as follows:

- 1. Wood Supply:** Quality of Wood: The quality of the wood is not in accordance with international standards since they cut the wood prematurely, resulting in logs with small diameters and lower wood quality. In addition, they use seeds and a tree cutting process, which do not yield to high-quality products. Legal Wood: Currently the situation regarding legal and sustainable wood is unclear. In Indonesia teak wood comes from plantation and not from rainforests. Nevertheless, large buyers in Europe are asking for wood certification. In addition, the EU regulation FLEGT will be established in 2013. This upcoming EU regulation will pose a threat to the Indonesian furniture industry. Importers in the European Union could reduce purchases from countries like Indonesia that do not apply traceability measures to wood usage. Certification based on traceability systems will be costly for MSEs and also difficult to establish and implement. Other certification systems like from Trees4Trees can be considered as alternatives. The Indonesian furniture industry could run into problems if they do not address this problem adequately.
- 2. Dry Kiln** - Many MSEs do not use dry kilns to dry their wood but instead dry their wood in the air. Air drying yields to lower quality of wood since the remaining water content in the wood is still high. Dry kilns often do not control their heating processes. The temperature and the moisture are not measured. With uncontrolled conditions, the result of the drying process can be outside of the specification. Since water content in the dried wood is not measured, the producer will not know whether the wood is within the required specification.

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- 3. Production Process** - Main deficiencies in the production process are: (i) lack of capability for development of new design in MSEs; (ii) lack of production planning; (iii) craftsmanship not always in compliance with international standards due to too much manual work without machinery; (iv) quality of used glue, finishing chemicals and brass accessories not in accordance to international standards; (v) quality assurance and control, final control, SOPs, checklists, and records (vi) on-time delivery; (vii) use of standardized parts. The MSEs do not cooperate much with each other. Cooperation would increase knowledge by information exchange, increase efficiency if they buy wood as a group, and provide possibilities for sharing of equipments.
  - 4. Supporting organizations** – Many MSEs are not familiar with Indonesian associations such as ASMINDO or APKJ and do not see the advantages of joining them to cooperate with them. ASMINDO has about 2000 members and can also only cooperate with some of its members due to limited financial resources. ASMINDO has many local branches that have funds from the membership fees available and can provide services to the members. It is not clear whether ASMINDO has a coherent strategy for development and support of its members, which includes the organization on a national level and all the branches.
  - 5. Testing** - Indonesian companies often use overseas facilities for furniture testing. Laboratories located in Indonesia are not well-known and sometimes lack international standards. Nonetheless, international certification bodies at times subcontract Indonesian laboratories for product safety testing. BPMBEI is one such laboratory, but this institution is not well-known in the furniture business community. BPMBEI is currently carrying out tests for at least one international certifying body. The laboratory is not aware of the potential market with international certifying organizations and the demand for their services. The number of samples analyzed remains under the laboratories full operating capacity. No marketing plan is available.

Our recommendations to address these issues can be summarized as follows: (i) measures to strengthen production quality of the furniture industry; (ii) initiatives designed to stimulate foreign demand for Indonesia's furniture products; and (iii) capacity building support to Government agencies and business associations in wood-based industries

## E. NATURAL COSMETICS



## E.0 Executive Summary

One of the fastest growing segments of the global cosmetic market is products made from natural ingredients. In the industrialized countries, for example, consumption of cosmetics using natural ingredients is growing at rates that are 50 percent higher than those of other types of cosmetics. Indonesia is in the fortunate position of having one of the most biodiverse environments in the world, with access to a large variety of natural cosmetic ingredients. The country has a long tradition in producing natural cosmetics using its vast plant resources. Approximately 700 companies produce a wide variety of cosmetics, but only about 20 of them are classified as large-size enterprises. The majority of companies are SMEs producing natural products for the domestic market.

Exports of the industry are concentrated in the ASEAN region, and are mainly in the form of essential oils and beauty makeup preparations. End-use products include beauty makeup preparations, while exports of natural cosmetics ingredients are largely essential oils of geranium and vetiver. Indonesia only exports 10 percent of its natural cosmetic products and ingredients to the European Union, even though the European Union is the world's largest market. The European Union imports nearly US\$6 billion worth of cosmetics annually, three-fourths of which come from China, Switzerland and the United States. A mere 0.6 percent come from Indonesia. Nonetheless, the growing concern of end-users about the presence of possible harmful 'synthetic' ingredients offers Indonesia a considerable opportunity to improve its presence in the EU market and elsewhere.

The challenges to realizing Indonesia's export potential are concentrated in marketing difficulties and supply-side constraints of the natural cosmetics industry, including those related to the regulatory environment. Production costs and exchange rate pass-through into the export price of Indonesia in the EU market have significantly impacted trade, especially in 2000-2005. China has maintained a significant competitive advantage in its prices of cosmetic products, a situation that has benefited from that country's undervalued currency. China has therefore been able to significantly increase its share of the EU market at the expense of countries like the United States and Switzerland. Non-price factors have also undermined Indonesia's exports outside the ASEAN region to markets like that of the European Union. Among the most significant factors are (i) a lack of understanding of EU distribution channels for cosmetics products; (ii) lack of SME access to export markets; (iii) lacking cluster development and collaboration with overseas networks; (iv) difficulties in accessing regulations within Indonesia and foreign markets like that of the European Union; and (v) high logistics costs.

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Regulatory constraints can be grouped into four categories: (1) the long registration process of new cosmetics with Badan Pengawas Obat dan Makanan (BPOM); (2) the large number of small and medium sized enterprises (SMEs) operating in the industry that cannot comply with regulations with regard to Product Information File, Safety Assessor assessment and Good Manufacturing Practices; (3) weak institutional support especially with regard to availability of cosmetic product test laboratories with affordable prices and (4) BPOM laboratories are currently not able to analyze all the parameters required by the new ASEAN cosmetic directive and the European Union regulations for cosmetic products. Efforts to remedy these impediments will require concerted action in different areas: (i) an accelerated registration process for new cosmetics; (ii) technical support for independent and BPOM cosmetic laboratories and (iii) strengthening support services for the cosmetic industry.

Recommendations to help the cosmetics industry realize its full export potential in the EU market are grouped into broad action areas covering (1) industry strategy for extra-regional markets; (2) investment in research & development (R&D); (3) applying lessons from natural cosmetics industries in other countries; (4) cluster and networking development; (5) SME support; (6) testing laboratory for cosmetic companies; (6) BPOM reference laboratory.

## E.1. Introduction

### E.1.1. Objective and Coverage

The present ANNEX on natural cosmetics is one of five industry-specific annexes prepared for the study on Indonesia's Trade Access to the European Union: Opportunities and Challenges. It provides a self-contained analysis of the natural cosmetics industry and its export potential in the EU market. It has three specific objectives. First, it seeks to identify Indonesia's export opportunities in the EU cosmetics market, based on the industry's competitiveness and growth prospects. Secondly, it identifies challenges to the realization of Indonesia's export potential in terms of EU market entry requirements, export quality infrastructure (EQI), the conduciveness of trade policies and regulations, and support being provided to the industry. Finally, it points out a few general recommendations on actions that support the achievement of the industry's export potential to the EU market.

This report consists of the following parts:

- *Chapter E1* presents an overview of the natural cosmetics industry in terms of its importance to the Indonesian economy and the pattern of its export development. It also covers the strengths, opportunities, weaknesses and threats (SWOT) facing the industry's development, especially as it relates to Indonesia's exports to the EU market.
- *Chapter E2* analyzes the European Union's market for cosmetics products, the role of cosmetics made from natural ingredients, and Indonesia's competitiveness in that market. It begins by examining the market in the European Union and assessing its growth prospects. It then examines the major factors determining Indonesia's competitiveness relative to other developing country exporters to the EU market. The chapter ends with an analysis of the relative importance of price and non-price factors in explaining Indonesia's changing market shares in the EU market, and how remedial actions addressing non-price factors could impact on Indonesia's export prospects.
- *Chapter E3* covers EU market access requirements and existing conditions in the Indonesian natural cosmetics industry. It examines internal and external constraints along the value chain, especially for small and medium size enterprises (SMEs), the existing EQI system in the industry and support services being offered to enterprises, and trade policies and regulations affecting the industry.
- *Chapter E4* presents a summary of the findings on the Indonesian natural cosmetics industry, and it draws on this information to recommend specific actions needed to fully realize the country's export potential in the EU market.

### E.1.2. Importance of the Industry

**Industry Coverage** – Natural cosmetics are part of the global cosmetics industry covering skin and hair products, perfumes and fragrances, and decorative cosmetic.<sup>181</sup> Though the industry is worldwide in scope, a small number of multinational corporations produce the bulk of cosmetics, while a large number of businesses distribute and sell the products. The fastest growing portion of the cosmetics market consists of products made from natural ingredients.<sup>182</sup> Recent data suggests that EU and US consumption of cosmetics that use natural ingredients is growing by 8 percent a year, compared with a growth of 5.4 percent for all types of cosmetics.<sup>183</sup> Both the natural products themselves and their ingredients are of importance to Indonesia. Although our focus is on natural cosmetics, data for the global industry and the EU market are unavailable. Instead, we use data for

181 Manufacturers distinguish between decorative cosmetics, or so-called makeup, and care cosmetics, which include skin-care creams, lotions, powders, perfumes, lipsticks, fingernail and toe nail polish, eye and facial makeup, permanent waves, colored contact lenses, hair colors, hair sprays and gels, deodorants, baby products, bath oils, bubble baths, bath salts, butters and many other types of products. Care cosmetics includes soaps. For details, see the European Cosmetics Association web site at <http://www.colipa.eu/>.

182 Throughout this report, the term industry and sub-sector are used interchangeably and both refer to a subset of activities of the sector to which the industry belongs

183 Verlag für chemische Industrie, "'Market Report: Desire for Performance coupled with Natural Ingredients Boosts Botanical Actives Consumption in Personal Care". SOFW Journal. 3-2009. Available: [http://www.in-cosmetics.com/ExhibitorLibrary/474/SOFW-E-3-2009\\_2.pdf](http://www.in-cosmetics.com/ExhibitorLibrary/474/SOFW-E-3-2009_2.pdf).

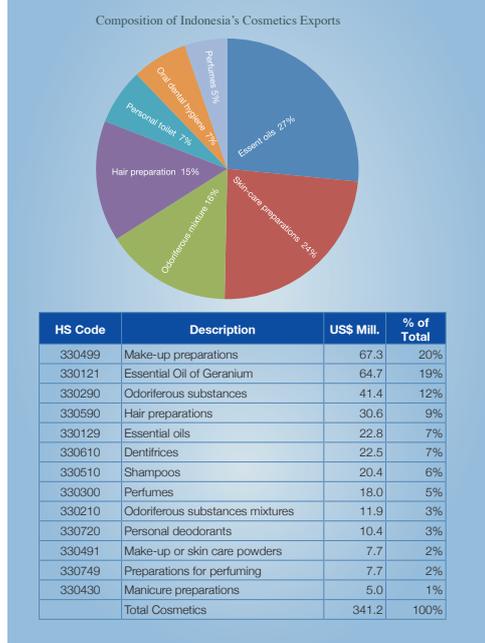
the cosmetic industry as a whole, for which there is considerable information on wholesale, retail and foreign trade in the global cosmetics industry and the EU market.<sup>184</sup> That information serves as a leading indicator for the natural cosmetics market. Cosmetic data are available.

**Natural Ingredients** – For natural cosmetic ingredients, the main product groups are (i) vegetable oils, fats and waxes; (ii) essential oils and oleoresins like geranium, jasmine citrus, vetiver, patchouli, sandalwood, mint oils, cedar wood, nutmeg and clove); (iii) vegetable saps and extracts (gums, resins, other vegetable saps and extracts); (iv) raw plant material (medicinal and aromatic plants, seaweed and algae); and (v) natural colors (indigo, cochineal, carmine, curcuma or turmeric, marigold and henna).<sup>185</sup> Most of these products are also ingredients for the food and pharmaceutical industries.

**Regulation and Certification** – Natural cosmetic target a growing number of end-users that have concerns about the presence of possible harmful ‘synthetic’ ingredients, especially those derived from petroleum. As a result, many cosmetic companies are increasingly producing ‘all natural’ and ‘organic’ products. Natural products contain mineral and plant ingredients, while organic products are made with organic agricultural products. Certifications of authenticity are provided by government agencies in major markets like the European Union and the United States. Legislation regulating the cosmetic industry has been issued by the European Commission, as have a number of other governments like those of the United States and Japan, the two other major consumers of cosmetic products. While border controls in the European Union are not applied, market surveillance under the authority of member states takes place in retail distribution outlets.

**Organic Certification** – Organic certification is voluntary and applied to producers of organic agricultural products. Although requirements vary across countries, in general any business directly involved in food production can be certified. Production standards are used that generally growing, storage, processing, packaging and shipping. They usually include avoidance of most synthetic chemical inputs like fertilizer, pesticides, antibiotics and food or color additives, and genetically modified organisms, irradiation and use of sewage sludge. Farmers are required to use land that has been free from synthetic chemicals for a number of years; provide detailed production and sales records; maintain physical separation of organic products from non-certified products; and undergo periodic on-site inspections by government regulatory agencies. Certified organic producers are also subject to the same food safety and other regulations that apply to non-certified producers.

Figure E1.1  
Indonesia's Main Types of Cosmetics Exports, 2009



Source: United Nations, COMTRADE database.

184 Wholesale and retail trade is based on the European Union's Classification of Economic Activities in the European Community (NACE), which has correspondence to the International Standard Industrial Classification of all Economic Activities (ISIC), available at <http://unstats.un.org/unsd/cr/registry/regot.asp>. The NACE (revision 1.1) code for cosmetics is 5233, which corresponds to ISIC (revision 3.1) code 5231. For international trade in cosmetics, the Standard International Trade Classification (SITC) and Harmonized System (HS) codes apply. The SITC code for cosmetics is 553, which is broken down into Perfumes and toilet waters (553.1); beauty or make-up preparations for the care of the skin (553.2); preparations for use on the hair (553.3); preparations for oral or dental hygiene (554); and other perfumery, cosmetic or toilet preparations (553.5). The HS code for cosmetics is 33, which consists of perfumes and toilet waters (3303); beauty make-up and skin-care preparations (3304); preparations for use on the hair (3305); preparations for oral or dental hygiene (3306); and other personal toilet preparations (3307).

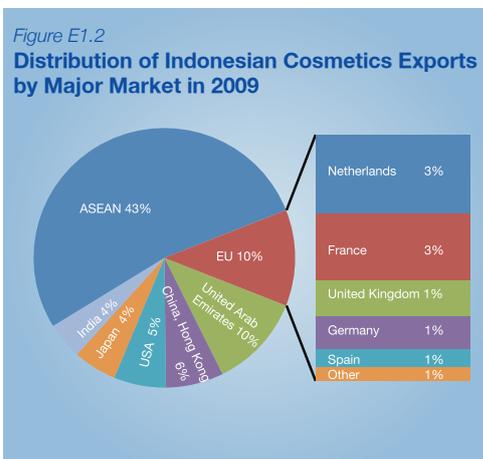
185 Center for the Promotion of Imports from Developing Countries (CBI), "Natural Ingredients for Cosmetics". EU Market Survey, June 2002.

**Importance to Indonesia** – Indonesia’s interests in natural cosmetics are in both the end products and the ingredients used to make natural cosmetics. The pertinent cosmetic products for Indonesia are those that use natural ingredients, either in conventional forms like creams or nonconventional ones like body scrubs. Producers have a natural advantage over suppliers in most other countries because of the country’s biodiversity. However, they face stiff competition in both domestic and foreign markets from low-cost producers in China.

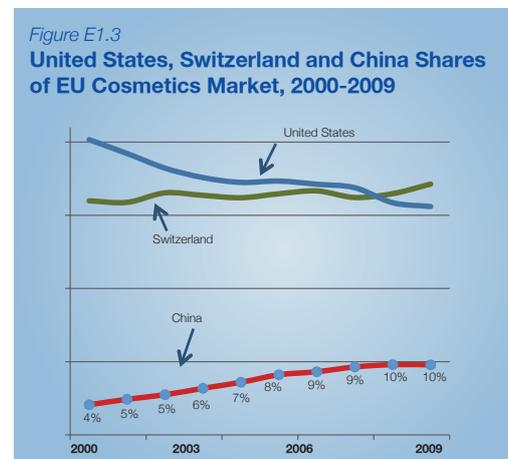
**Types of Exports** – At present, Indonesia’s major exports of cosmetics fall under two broad classifications. The first is essential oils, resinoids and terpenic by-products under the HS 3301 classification; the other is beauty makeup preparations under the HS 3304 classification. In the area of end-use products, Indonesia exports beauty makeup preparations in the form of perfumes and colognes, and preparations for use on the hair. In the area of ingredients used in the production of natural cosmetics, Indonesia mainly exports essential oils of geranium, which accounts for over 70 percent of essential oils, resinoids and terpenic by-products, and essential oils of vetiver, which accounts for most of the remaining exports in this category.<sup>186</sup> For details, see Figure 1.1.

**Major Export Markets** – Indonesia’s cosmetic exports are largely directed to other ASEAN member countries like Thailand, Malaysia, Singapore, and the Philippines (Figure 1.2). Exports to the European Union only absorb 10 of total cosmetic exports. The bulk of those exports are directed to the large economies of Germany, France, the United Kingdom, the Netherlands, and Spain. There is, nonetheless, a substantial amount of those exports directed at the European markets in the eastern region, for example, the Czech Republic, Lithuania, Romania, Bulgaria and Poland. In other regions, the United Arab Republic (U.A.R.) absorbs as much as does the EU market, while the United States, Japan, India and Hong Kong each accounts for between 4 and 6 percent of Indonesia’s cosmetic exports.

**Major Competitors in EU Market** –The top three suppliers to the EU cosmetics market are the United States, Switzerland and China, which together provide 75 percent of all EU cosmetics imports from third countries (Figure E1.3). There has been considerable competition among these and other suppliers, and market shares have changed considerably in the last ten years. In 2000 the United States accounted for 40 percent of EU imports, while China’s share was only 4 percent. By 2009 the United States’ market share had fallen to 31 percent, while that of China had more than doubled to 10 percent of the market. Other foreign suppliers with significant market shares are Japan, Canada and India, each with 2 percent of the EU market. Indonesia’s market share is small (0.6 percent), although it ranks number 19 in terms of largest foreign cosmetic providers to the European Union.



Source: United Nations, COMTRADE database.



Source: European Commission, Eurostat database

186 Examples of product-specific exports are (a) HS 330129 : Essential oils, whether or not terpenic, incl. concretes and absolutes; (b) HS 330190: Extracted oleoresins; concentrates of essential oils in fats, fixed oils, waxes and the like, obtained by enfleurage or maceration; terpenic by-products of the distillation of essential oils; aromatic aqueous distillates and aqueous solutions of essential oils; (c) HS 330125: Oils of mints, whether or not terpenic, incl. concretes and absolutes.

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### **E.1.3. SWOT Analysis**

Box E1.1 summarizes the strengths, weaknesses, opportunities and threats (SWOT) of the industry. The focus of the analysis is areas where there is a need for change to ensure that Indonesia realizes its export opportunities in the EU cosmetics market. The following are key issues of the industry:

- Indonesian producers have natural advantage due to Indonesia's biodiversity.
- Natural ingredients for cosmetics are fastest growing market segment.
- Indonesia's exports to EU market are underrepresented in distribution of global cosmetic market.
- In Indonesia, quality assurance in laboratories still lack Proficiency Tests and Certified Reference Material.

Box E1.1

**Strengths, Weaknesses, Opportunities and Threats (SWOT) of Indonesian Cosmetics industry**

	Supply Chain Structure	EU Market	MSEs and SMEs	Institutional Framework
<b>Strengths</b>	<ul style="list-style-type: none"> <li>Natural cosmetics and their ingredients are important to Indonesia in terms of value added to the economy and employment.</li> <li>Raw materials for cosmetics are grown in Indonesia and easily available</li> </ul>	<ul style="list-style-type: none"> <li>High demand from end-users due to concern of harmful synthetic ingredients.</li> </ul>	<ul style="list-style-type: none"> <li>Many SMEs cosmetic producers with long tradition in the market.</li> </ul>	<ul style="list-style-type: none"> <li>Legislation regulating cosmetic industry.</li> <li>Organic certification of agri-based products.</li> <li>Active association PERKOSMI with large network</li> <li>BPOM has well equipped reference laboratory and 30 test laboratories all over Indonesia</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>Continuous supply of natural ingredients is not ensured</li> <li>Data sheets for domestically produced ingredients mostly unavailable</li> </ul>	<ul style="list-style-type: none"> <li>Dominance of multi-nationals in cosmetic supplies.</li> </ul>	<ul style="list-style-type: none"> <li>SMEs not implemented GMP.</li> <li>SMEs have difficulties to establish Product Information File</li> <li>Number of Safety Assessors very limited.</li> </ul>	<ul style="list-style-type: none"> <li>Strict marketing and health regulations for cosmetic products in EU market.</li> <li>Cosmetic products subject to strict composition, packaging, labeling, and information requirements.</li> <li>No laboratory for SMEs with reasonable prices available</li> <li>Quality assurance in laboratories still lack Proficiency Tests and Certified Reference Material</li> <li>Long application procedure in BPOM</li> <li>BPOM is un able to analyze all parameters of EU &amp; ASEAN requirements</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>Farmer groups organized by producers can ensure sufficient supply of natural ingredients</li> <li>Establishment of databank for natural ingredients will reduce required testing and will speed up notification..</li> </ul>	<ul style="list-style-type: none"> <li>Indonesian producers have natural advantage due to Indonesia's biodiversity.</li> <li>Natural ingredients for cosmetics are fastest growing market segment</li> <li>Aging EU population generating imore demand.</li> <li>Indonesia's exports to EU market are underrepresented in distribution of global cosmetic market.</li> <li>Large and varied distribution channels for cosmetics.</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of GMP in SMEs will improve potential for export.</li> </ul>	<ul style="list-style-type: none"> <li>Large and varied distribution channels for end-users in Europe.</li> <li>Well-organized cosmetics association in Europe and in individual European countries.</li> <li>Increasing organization and collaboration among Indonesian natural cosmetic producers.</li> <li>Upcoming ASEAN mutual recognition arrangement for cosmetics will provide opportunities for export to EU due to similarities of the systems.</li> <li>Laboratory of BPOM can serve as reference laboratory for all cosmetic laboratories and can provide PT and CRM.</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>Producers of cosmetics with natural ingredients could become uncompetitive if laboratory testing costs rise excessively.</li> </ul>	<ul style="list-style-type: none"> <li>Stiff competition from China.</li> <li>Multinationals increasingly selling natural.</li> <li>Increasing penetration of multi-nationals in natural cosmetics.</li> </ul>		<ul style="list-style-type: none"> <li>Indonesia will not be able to cope with ASEAN mutual recognition agreement if BPOM laboratories cannot conduct all required tests for cosmetics.</li> </ul>

## E.2. Indonesia's Export Competitiveness in the EU market

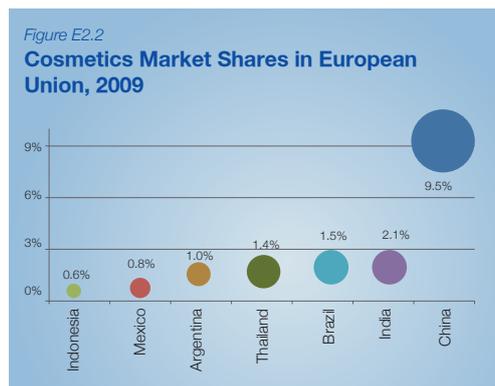
### E.2.1. EU Market Development and Prospects

The cosmetic market of the European Union is nearly as large as the combined markets of the United States and Japan. Common growth patterns are occurring throughout the European Union in sun care products to protect against rising concerns about skin cancer and exposure to harmful rays. In addition, the aging population of Europe is generating growing demand for anti-aging creams and anti-cellulite skin care products. There is also a growing demand for natural and organic products across all age groups.<sup>187</sup>

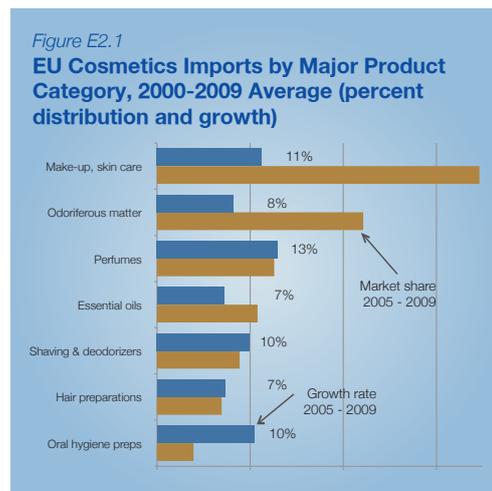
Barriers to entry in the EU market occur in nearly the same measure as in other developed markets because of the prevalence of large multinational enterprises. The top ten global cosmetics companies control one-half of the European market.<sup>188</sup> Regulatory constraints also exist in fairly similar degrees across markets. Distribution channels are, however, more important in Europe, where consumers tend to differentiate the type of products that they purchase based on whether the product originates from mass distribution, specialized distribution, pharmacy sales and direct sales.<sup>189</sup>

Because of strong and rising consumption of cosmetic products in the European Union, imports have grown rapidly in the last ten years, averaging nearly 10 percent a year. The

largest product categories are make-up and skin care (35 percent of all cosmetics), odoriferous substances (22 percent), perfumes (13 percent) and essential oils (11 percent) (Figure E2.1). Of



Source: United Nations, COMTRADE database.



Source: United Nations, COMTRADE database.

these product groups, imports of both make-up and skin care products and perfume products have had above-average growth rates for the period. In contrast, essential oil products, where Indonesia's exports are mainly concentrated, have experience a sluggish growth relative to other product categories. Since the market for cosmetic products is dominated by multinationals like Procter and Gamble, L'Oreal Group, Unilever Group and Colgate-Palmolive, to participate in this growth market, Indonesian producers would have to either subcontract to these companies in pre-export processing activities within the country or export highly differentiated natural-based organic products in niche markets within Europe.

The EU demand for cosmetic imports has been strong, particularly in its response to changes in consumer incomes. Our estimates show that a one percent increase in real GDP of the EU market as a whole has produced a 3.8 percent expansion in cosmetic imports. Figure E2.3 provides a visual representation of the forecast of total EU cosmetic imports through 2015. The forecasts are based on assumptions about real GDP growth, cosmetic prices and exchange rates are taken

<sup>187</sup> Based on data at [www.euromonitor.com](http://www.euromonitor.com).

<sup>188</sup> The companies are Procter & Gamble, L'Oreal Group, Unilever Group, Colgate-Palmolive, Estee Lauder Cosmetics, Avon Products, Beiersdorf AG, Johnson & Johnson, Shiseido Company, and Kao Corporation.

<sup>189</sup> Global Insight, "A Study of the European Cosmetics Industry". November 2007. Available: [http://ec.europa.eu/enterprise/newsroom/cf/document.cfm?action=display&doc\\_id=4561&userservice\\_id=1](http://ec.europa.eu/enterprise/newsroom/cf/document.cfm?action=display&doc_id=4561&userservice_id=1)

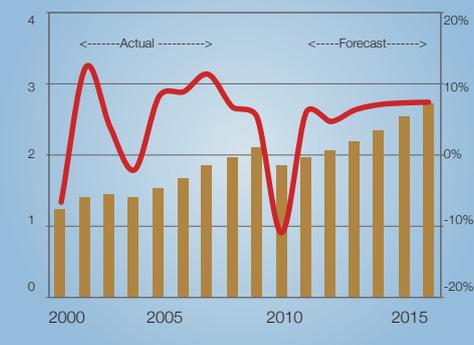
from the International Monetary Fund's biannual projections.<sup>190</sup> They forecast GDP to grow by 1 percent in real terms in 2010 and by another 1.3 percent in 2011. After 2011 a moderate 2 percent annual real GDP growth is assumed. We assume unchanged constant euro prices for the products and an average exchange rate of US\$1.3 per euro over the medium term. Based on these projections for economic activity within the European Union, demand for cosmetic imports is projected to grow by 5-6 percent annually in 2010-2012, and thereafter accelerate to 7 percent a year.

## E.2.2. Indonesia's Export Competitiveness

Indonesia's competitiveness in the EU cosmetics market, like in other foreign markets, is largely determined by four interrelated conditions: (i) export prices relative to those of competing suppliers to the market; (ii) the magnitude and type of accessible demand; (iii) accessibility and reliability of supporting industries; and (iv) firm strategy and rivalry that affect how various enterprises conduct business.<sup>191</sup>

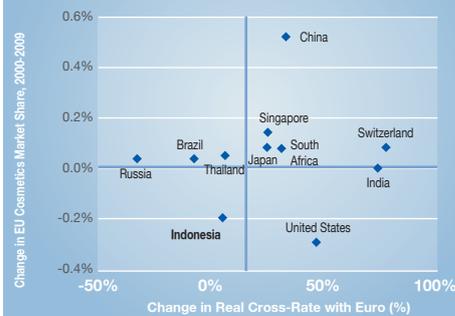
Figure E2.3

### EU Cosmetic Imports, actual 2000-2009 and forecast 2010-2015



Source: Projections by the Study Team based on econometric estimates and assumptions about economic activity from IMF, World Economic Outlook database.

Figure E 2.4.  
Changes in Real Cross-Rates with Euro and EU Cosmetics Market Shares, 1999-2009



Source: Calculated from IMF, WEO database, and EU, Eurostats.

*Export Prices:* Foreign demand for Indonesia's cosmetics exports is determined by the rupiah-denominated price of exports. From the point of view of European buyers, that price is denominated in euros. The price differential between Indonesia's exports and those of other competitors to the EU market therefore depends on the product price in each supplying country and the cross exchange rate between the rupiah and the euro, adjusted for inflation in each country. The demand for natural cosmetics exports of Indonesia is accordingly determined by both the real cross-rate of Indonesia's domestic currency relative to that of the European Union, and the foreign rupiah-denominated export price.<sup>192</sup> Macroeconomic conditions determine the real cross-rate, while industry-specific conditions in Indonesia determine the rupiah-denominated price of cosmetics products.

For the first of these determinants, Figure E2.4 shows the relation between changes in the real cross-rate in Indonesia and other major suppliers to the EU market and changes in their market shares. Indonesia experience some erosion of its EU market share, possibly associated with the rupiah's strengthening relative to the euro. Market share changes of major third country suppliers to the European Union were not, however, as large as in many other industries.

190 See International Monetary Fund, "World Economic Outlook Update". July 2010. Available: <http://www.imf.org/external/pubs/ft/weo/2010/update/02/index.htm>.

191 These conditions are often referred to as the Competitiveness Diamond developed by Michael Porter, "Competitive Advantage of Nations". Free Press, 1998.

192 The real bilateral exchange rate takes the relative price of tradable and non-tradable products as an indicator of a country's competitiveness level in the foreign trade. The rationale behind this definition is that the cost differential between trading countries are closely related with the relative price structures in their economies. Mathematically, the real exchange rate,  $r$ , is defined as  $r = Pt/Pn = eP^*/Pn$ , where  $P_t$  and  $P_n$  represent the price of tradable and non-tradable products,  $e$  is the nominal exchange rate, and  $P^*$  is the international price of tradables.

The industry-specific conditions affecting the rupiah-denominated price of cosmetic products are largely associated with labor and infrastructure-related costs. The cost structure of the cosmetics industry is reflected in the nominal unit price of product exports in the industry's relatively competitive global market.<sup>193</sup> Table 2.1 shows the average export price of Indonesia and other foreign suppliers to the EU markets. These price variations could reflect differences in the product composition of the two groups, as well as quality differences. The more important measure of competitiveness is the impact that those prices have had on the demand for Indonesia's exports, that is, whether changes in the price of Indonesia's exports have affected the EU demand for Indonesian exports relative to that of competing suppliers to the market. This issue is examined in the next section of this chapter.

*Demand Conditions:* Indonesia's natural cosmetic industry is, for the most part, directed to the domestic market, and few firms are linked directly to overseas consumers. Overseas sales are mostly limited to the regional markets within the ASEAN community, where regulations governing marketing, health and packaging are not as strict as in the EU and US markets.

*Industry Networking:* The industry is dominated by small scale enterprises, which have little if any networking capabilities. This situation prevents them from linking up with large chains or independent retailers, especially with multinationals. Moreover, enterprises are fairly widely distributed in Bali, Lampung, Riau, DKI Jakarta, North Sumatera, and East Kalimantan, making it more difficult for them to network with one another.

*Conditions for Conducting Business:* Business strategies of most natural cosmetics enterprises remain relatively unsophisticated and largely directed at domestic consumers. Most firms lack knowledge about pricing policies of similar products from their overseas competitors. Lack of overseas contacts makes companies dependent on commercial intermediaries to place their products abroad. Overcoming these obstacles is difficult because of the large number

### Box E3.2: Global Branding of Indonesia's Natural Cosmetics

There are an estimated 700 enterprises producing natural cosmetics products, but the vast majority of them are small-scale enterprises producing basic, low-tech products. Of the approximately 20 larger companies, two are actively marketing their products worldwide. The two companies, Mustika Ratu and Puteri, have been awarded Indonesian Best Brand Awards by the Superbrands Council.

The Martha Tilaar Group – The company has been operating since the early 1970s and has a turnover of about US\$900 million in annual sales. It specializes in beauty products aimed at Eastern woman, especially in cosmetics and personal care (decorative products, make-up base, skincare, body care and hair care), jamu, and spa products. The main brands are (i) Sariayu, one of Indonesia's oldest cosmetics brands and currently has the largest number of in-store counters for decorative products, make-up base, skincare, body care, hair care and jamu); (ii) Biokos, anti-aging skincare products; (iii) Caring Colors, which are decorative and make-up base cosmetics; (iv) Belia, which are splash colognes for teenagers; (v) Berto Tea and Dewi Sri Spa; (vi) Professional Artist Cosmetics, covering decorative and make-up base cosmetics; (vii) Jamu Garden, consisting of jamu, skincare, body care, and health care products; (viii) Mirabella for decorative cosmetic products; and (ix) Rudy Hadisuwarno Cosmetics, which is license from the Rudy Hadisuwarno Organization. The company has internationally franchised chains of spa and beauty treatments under the name of Eastern Garden Spa, Martha Tilaar Salon & Day Spa and Dewi Sri Spa. They are based on the traditional Indonesian concept of Rupasampat Wahyabiantara, which is influenced by Chinese and Indian health and beauty rituals. The group also owns and operates Puspita Martha beauty schools, Bali Sari spa training center and Cipta Busana Martha, which markets traditional Indonesian garments.

Mustika Ratu – PT Mustika Ratu Tbk is a leading manufacturer of herbal (Jamu) and natural-based cosmetics. The range of its 700 products cover hair care, facial care, body care, basic make up, decorative make up, herbal drinks, beauty supplements, and spa products. In addition to its cosmetic lines, it produces body care products for men, manages franchise spa centers, and has home spa products. The company has ISO 9001 and ISO 14001 certifications, applies Good Cosmetic Production Method (CPKB) and Good Traditional Herbal Production Method (CPOTB). It has also been issued a Good Manufacturing Practice (GMP) certificate from Department of Health. The company exports to about 24 countries, primarily Malaysia, Brunei, Singapore, Hong Kong, Japan, Saudi Arabia, Nigeria, Russia, and Papua New Guinea.

Source: The material that follows is drawn from "Indonesia's Global Brands (Part 12: Beauty Products)". Available: <http://goodnewsfromindonesia.org/2010/07/20/indonesias-global-brand-part-12-cosmetics/>.

<sup>193</sup> In a competitive market, the firm or industry as a whole will select an output level that equates its marginal cost with its export price.

of market segments and distribution channels in Europe. The existence of different market niches requires different marketing and distribution strategies than higher-volume markets. There is also considerable variation among European markets, depending on national preferences, location, and age groups.

### E.2.3. Opportunities to Regain Market Shares

Indonesia's share of the EU market has improved since the middle of the last decade. In the early part of the decade the industry's performance suffered from volatile prices and a large exchange pass-through to export prices. Additionally, the industry experienced market share losses from non-price factors associated with supply impediments like EQI limitations (Figure E2.5). On average, non-price factors reduced Indonesia's market share by 15 percent, while the price and exchange rate pass-through generated a 9 percent gain in market shares. Nonetheless, the negative effect from non-price factors outweighed the price factors, thereby lowering Indonesia's export market share of the EU market by nearly one-half.

To the extent that Indonesia could have overcome its supply impediments on exports and maintained its cosmetics market share at the beginning of the decade, foreign exchange revenue from the

Table E2.1:

#### Export c.i.f. Price of Cosmetics of Top Developing Country Suppliers to EU Market, 1999-2009

China	57
Brazil	63
Indonesia	77
India	79
Switzerland	83
Japan	85
USA	100
Thailand	103
S. Africa	170
Singapore	231
Russia	479

Source: derived from data in Eurostat database.  
Note: Average of all types of exports.

Box E2.2

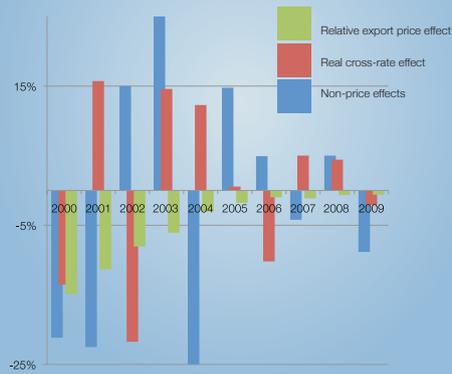
#### Competitive Analysis of Indonesian Cosmetics Industry

	Strengths	Weaknesses
<b>Pricing Conditions</b>	<ul style="list-style-type: none"> <li>Stable real cross-rate with euro.</li> <li>Low-cost production.</li> <li>Close to natural ingredients.</li> <li>Abundant biodiversity.</li> <li>High-end cosmetic market.</li> </ul>	<ul style="list-style-type: none"> <li>Real effective devaluations by competing suppliers to EU market.</li> <li>High logistics costs.</li> </ul>
<b>Demand Conditions</b>	<ul style="list-style-type: none"> <li>Aging populations in Europe demanding more cosmetics.</li> <li>Increasing use of natural ingredients.</li> <li>Segmentation of organic products from other types of cosmetics.</li> </ul>	<ul style="list-style-type: none"> <li>Inconsistent quality standards, especially for export market.</li> <li>Regulations difficult to access for SMEs.</li> <li>Lacking of understanding of EU cosmetics distributors.</li> <li>Lack of marketing know-how for European consumers.</li> </ul>
<b>Industry Networking</b>	<ul style="list-style-type: none"> <li>Potential for overseas sub-contracting arrangements.</li> <li>Increasingly strong supporting relationships and subcontracting in natural cosmetics industry</li> </ul>	<ul style="list-style-type: none"> <li>Lacking cluster development and collaboration with overseas networks.</li> <li>Weak linkages to trucking, logistics, warehousing, software, banking and finance.</li> </ul>
<b>Conditions for Conducting Business</b>	<ul style="list-style-type: none"> <li>Strong competitive environment</li> <li>Knowledge about requirements in environmental legislation.</li> <li>Clusters disseminate information about business regulations.</li> </ul>	<ul style="list-style-type: none"> <li>Price-based competition for similar products.</li> <li>Lacking attention to design and marketing.</li> <li>Weak product design and consumer feedbacks.</li> <li>Legislation difficult to access.</li> </ul>

Source: Based on Competitive Diamond analysis (see Michael Porter, "Competitive Advantage of Nations". Free Press, 1998).

Figure E2.5

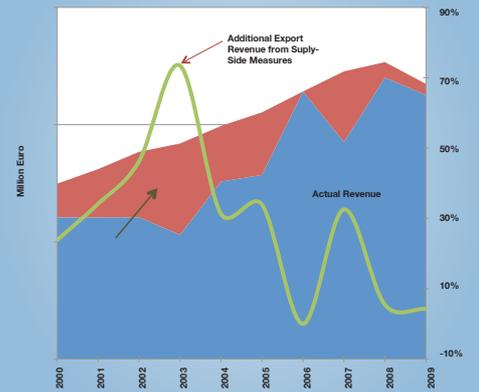
### Price and Non-Price Factors Impacting on Indonesia's Shares of EU Cosmetics Market, 2000-2009



Source: Derived from estimates in Technical Annex of Interim Report No. 3

Figure E2.6

### Actual and Potential Export Earnings from Remedial Supply-Side Measures in Cosmetics Industry, 2005-2009



Source: Estimated from study team calculations

industry would have been 40 percent higher in the first half of the decade, and more than 10 percent larger in the second half (Figure E2.6).<sup>194</sup> Overcoming EQI obstacles will require considerable effort on the part of the industry. However, the benefits to the industry are considerable, as are the economy-wide impact that would be produced from additional employment and expenditures on downstream and supporting industries. Without those EQI constraints and assuming that all other price and non-price factors were the same as other suppliers, Indonesia's exports would increase by the same proportion as those of EU imports for natural cosmetics, that is, the same as our forecast of 6.5 percent annual growth of EU cosmetics imports from third countries.

<sup>194</sup> Non-price factors (including but not exclusively EQI) are equal to the changes in exports not explained by income and price changes. That's the way it was calculated and that's normally the way that the intercept is interpreted. However, in our case, we broke down the non-price factors further by including a trend variable to capture secular changes that could or could not be associated with EQI. Because of the attribution uncertainty, it was decided not to report the secular (trending) estimates.

## E.3 Challenges For Realizing Indonesia's Export Potential

### E.3.1. EU Market Access

The key elements of the regulatory environment for the cosmetics industry are (a) health and marketing conditions for cosmetic products; (b) marketing requirements for dangerous chemicals, pesticides and biocides; and (c) rules of origin applicable to GSP recipient countries. For Indonesian exporters shipping cosmetic products to the EU markets, the following are the specific market access requirements:<sup>195</sup>

1. Tariffs: For cosmetics, an average MFN rate of 2.5, and an average preferential tariff rate of 0.2 percent applies to Indonesia.
2. Specific requirements on technical standards applicable to cosmetic products cover (a) health and marketing conditions for cosmetic products; (b) marketing requirements for dangerous chemicals, pesticides and biocides (when intended to be used in plant protection products and/or biocides), and prohibition of products containing fluorinated greenhouse gases (when used with aerosols for entertainment and decorative purposes containing hydrofluorocarbons); and (c) rules of origin.

#### (a) Health and marketing conditions for cosmetic products

Cosmetic products are subject to composition, packaging, labeling, and information requirements in order to be placed on the market in the European Union. These requirements are enforced by means of establishing the liability of the manufacturer or importer for their products, requiring a notification of first importation and performing in-market surveillance controls.

(i) Product scope: Council Directive 76/768/EEC provides a general description to „cosmetic products“ plus an illustrative list of categories to be considered as such. According to Article 1 of the Directive, „cosmetic product“ means any substance or preparation intended to be placed in contact with the various external parts of the human body (epidermis, hair system, nails, lips and external genital organs) or with the teeth and the mucous membranes of the oral cavity with a view exclusively or mainly to clean, perfume, correct body odors, change the appearance, protect, and keep in good condition. An example of products to be considered as cosmetics is listed in Annex I to the Directive. As an exception, cosmetic products containing strontium and its compounds are excluded from the scope of the regulation.

#### (ii) Requirements:

- Composition - Cosmetic products containing certain substances are prohibited: (a) substances listed in Annex II to the Directive, in any case and under any conditions (nevertheless, the presence of traces of these substances is allowed provided that such substances are technically unavoidable in good manufacturing practice and that the product does not cause damage to human health); and (b) substances listed in Part 1 of Annex III and Part 2 of Annex III, beyond the limits and outside the conditions laid down. Ingredients cannot be tested on animals if an alternative method has been validated and adopted by the European Centre for the Validation of Alternative Methods (ECVAM). Certain substances could be authorized by the Member States to be used within its territory for some cosmetic products. The authorization must be limited to a

#### Box E3.1

#### EU Cosmetic Imports, actual 2000-2009 and forecast 2010-2015

Tariffs:	MFN	GSP
Average	2.5	0.0
Maximum	6.5	0.0
Minimum	0.0	0.0

#### Product-Specific Requirements:

- Health and marketing conditions for cosmetic products.
- Marketing requirements for dangerous chemicals, pesticides and biocides.
- Prohibition of products containing fluorinated greenhouse gases.

Sources: Tariffs provided by European Commission, Trade Directorate; requirements from EC Helpdesk.

<sup>195</sup> The following information draws on material available at the European Commission's Helpdesk for developing countries. Available: <http://exporthelp.europa.eu>.

maximum period of three years and products thus manufactured must bear a distinctive identification.

- Notification of first importation - Before placing imported cosmetic products on the EU market, the person responsible must indicate to the competent authority of the Member State where the products were initially imported the address of the manufacturer or the address of the importer.
- Information availability: The person responsible for placing imported cosmetic products on the market must keep the following information readily accessible at the address specified on the label and in the official language(s) of the Member State concerned or in a language accepted by its legislation:
  - Qualitative and quantitative composition of the product;
  - Physicochemical and microbiological specifications of the raw materials and the finished product;
  - Method of its manufacture;
  - Assessment of its safety for human health and the person responsible for this assessment, specifically in case of cosmetic products intended for children under the age of three or for exclusive use in external intimate hygiene;
  - Existing data on undesirable effects on human health resulting from use of the cosmetic product;
  - Proof of the effect claimed for the cosmetic product;
  - Data on any animal testing performed by the manufacturer.
- Packaging and labeling: Cosmetic products can be marketed only if the cosmetic container and packaging bear the following information in indelible, easily legible and visible lettering:
  - The name and the address of the manufacturer or the person responsible for marketing the product
  - The nominal content at the time of packaging, given by weight or volume
  - The, date of minimum durability
  - Particular precautions to be observed in use
  - The batch number of manufacture or the reference for identifying the goods
  - The function of the product,
  - A list of ingredients, expressed in a language easily understood by the consumer.
- Market surveillance: In-market controls, accomplished by the Member States' authorities, ensure that only cosmetic products which conform to EU provisions are circulating on the market. Inspectors appointed at national level visit outlets, department stores, supermarkets, small shops and market stalls to verify the compliance of the products with all composition, packaging and information requirements.

*(b) Marketing requirements for dangerous chemicals, pesticides and biocides, and prohibition of products containing fluorinated greenhouse gases*

The placing on the European Union market of certain chemical products must comply with the marketing requirements laid down by the EU legislation designed to ensure a high level of protection of human health and the environment. Hence, the provisions applicable to these products are as follows: General procedures for the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH); specific provisions on the classification, packaging and labeling of Dangerous Substances and Preparations; and specific conditions for Plant Protection Products and Biocidal Products

### Box E3.2: Market Access and Distributions Channels for Natural Cosmetics in Spain

Spanish consumers are becoming increasingly health conscious and this trend is providing large opportunities for Indonesian producers to sell high-quality, natural and organic beauty products in Spain. Spain is the fifth largest market for cosmetics and toiletries within the European Union, with a market value of 7.5 billion euros. Skincare products lead the market, with 26 per cent of total sales, followed by hair care at 22 per cent. Perfumes and fragrances represent 22 of the cosmetic market, toiletries 21 per cent, and decorative cosmetics 9 per cent of total sales. Imports account for over one-half of total sales within the Spanish cosmetics and toiletries sector. Emerging natural cosmetics products include (a) all natural skin, body and hair products; (b) aromatherapy products and natural oils; (c) new bath and spa products; (d) ,cosmeceuticals' like anti-ageing creams, protection from UV rays, or anti-cellulite creams; (e) men's health and beauty lines; (f) innovative sun care products; and (g) innovative natural products for children.

#### Market Access

In addition to EU market access regulations and labeling standards, producers from third countries must comply with Spanish importing and selling regulations. They must also have their products and ingredients certified under Spanish law. Labeling requirements for Spain are similar to those for the European Union (see main text of this report).

Spain own set of laws for the cosmetic industry originate in a Royal Decree of 1997. For imports of cosmetics, they are as follows: (i) importers must have approval from the Spanish Directorate General for Pharmaceutical and Health Products, Ministry of Health (,Direccion General de Farmacia y Productos Sanitarios' – DGFPs); (ii) the activities of the importer must comply with the procedures outlined in a DGFPs circular (La Circular 2/99); (iii) commercialization of cosmetic products must include information about possible medical effects and contact information within Spain for head office or an importing corporation; and (iv) labeling and advertising must comply not only with the Cosmetics Directive of the EU, but under the Spanish cosmetic Royal Decree they must also include information about whether animal experimentation was used, and the products must be sold separately from foodstuffs and medicines within an establishment.

#### Distribution Channels

In Spain natural cosmetic products are distributed through five main channels: mass distribution (49 percent of total sales); specialized distribution (28 percent); pharmacies (9 percent); hairdressers (8 percent); and direct sales via catalogues and the Internet (6 percent). The three largest mass distribution channels are El Corte Ingles department store and Carrefour and Al Campo hypermarkets. Specialized distributors are beauty salons and perfumery stores like Body Bell, Gilgo, Marionnaud, Juteco and Sephora, where customers receive more personal attention and advice from trained staff.

Spanish pharmacies tend to specialize in European cosmetic brands like Vichy, Isdin and RoC that are sold exclusively through pharmacies. They also sell homeopathic and natural or organic cosmetics. Thermal spas and health resorts are another outlet for natural cosmetic products. Popular spas are located throughout Spain, especially in the areas of Galicia, Aragón, Castilla, Leon and Castilla-La Mancha. A new culture of spa and health centers is emerging in Spain and high-quality natural beauty products are increasingly being commercialized through this distribution channel.

#### Links and industry contacts

- Spanish Agency for Medicines and Health Products (Agencia Espanola de Medicamentos y Productos Sanitarios. Web site: [www.aemps.es](http://www.aemps.es))
- The European Cosmetics, Toiletry and Perfumery Association. Web site: [www.colipa.com](http://www.colipa.com)
- Regulatory Association for the Advertising Industry. Web site: [www.autocontrol.es](http://www.autocontrol.es)
- The Spanish Cosmetics & Toiletries Association. Web site: [www.stanpa.com](http://www.stanpa.com)

Source: Austrade, "Cosmetic and Toiletries in Spain". 29 April 2010. Available: <http://www.austrade.gov.au/Cosmetics-and-toiletries-to-Spain/default.aspx>

- (i) Registration, Evaluation, Authorization and Restriction of Chemicals (REACH): The EU regulatory framework for the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) was adopted in December 2006: Regulation (EC) No 1907/2006 of the European Parliament and of the Council. In principle it applies to all chemicals: not only to those used in industrial processes but also in our day-to-day life, for example in cleaning products and paints, as well as in articles such as clothing, furniture and electrical appliances. REACH Regulation replaces several EU laws related to chemicals and is complementary to other environmental and safety legislation, but it does not replace sector specific legislation (i.e. detergents, cosmetics, biocides). Under this Regulation, the burden of proof for demonstrating the safe use of chemicals is transferred from Member States to the industry in order to ensure that the risks to human health and environment are avoided or adequately controlled. The European Chemicals Agency (ECHA) is the central point in the REACH system. The Agency manages and coordinates the registration, evaluation, authorization and restriction processes of chemical substances to ensure consistency in the management of chemicals across the European Union.
- (ii) Registration: Companies that manufacture or import one ton or more of a chemical substance annually are required to submit a registration to a central database at ECHA. The registration procedure involves submitting a technical dossier containing information on the substance and guidance on how to handle it safely. For quantities of ten tons and more, companies also need to submit a Chemical Safety Report to document a safety assessment of the substance, demonstrating safe handling for all identified uses and manufacturing processes.
- (iii) Evaluation: Evaluation procedures allow authorities to determine if further testing is needed and to assess whether information provided by industry complies with the requirements (dossier evaluation). Substances suspected to pose a risk to health or the environment will be selected for substance evaluation. This may lead to actions under the authorization or restrictions procedures.
- (iv) Authorization: Substances of very high concern (carcinogens, mutagens, substances which are persistent, bio-accumulative and toxic) are subject to an authorization procedure. Companies who apply for authorization need to show that the risks posed by those substances are adequately controlled or that the socio-economic benefits from their use outweigh the risks.
- (v) Restriction: Any substance on its own, in a preparation or in an article, may be subject to restrictions if its use poses unacceptable risks to health or the environment. Restrictions can be imposed on the use of a substance in certain circumstances and products, on the use by consumers or even on all uses (complete ban of a substance).

The exporting company has to provide the necessary documentation. As long as Indonesian companies are buying chemical ingredients from large international companies the necessary documentation will be provided by these suppliers, otherwise the exporter has to establish the documentation.

(c) *Rules of Origin Applicable to GSP Status*

Materials of the same product classification group as the cosmetic product can be used, provided that the total value does not exceed 20 percent of the ex-works price of the product for the non-originating materials. For manufactured cosmetics, the value of all the materials from non-originating countries should not exceed 40 percent of the ex-works price of the product.

### **E.3.2. Value Chain Analysis**

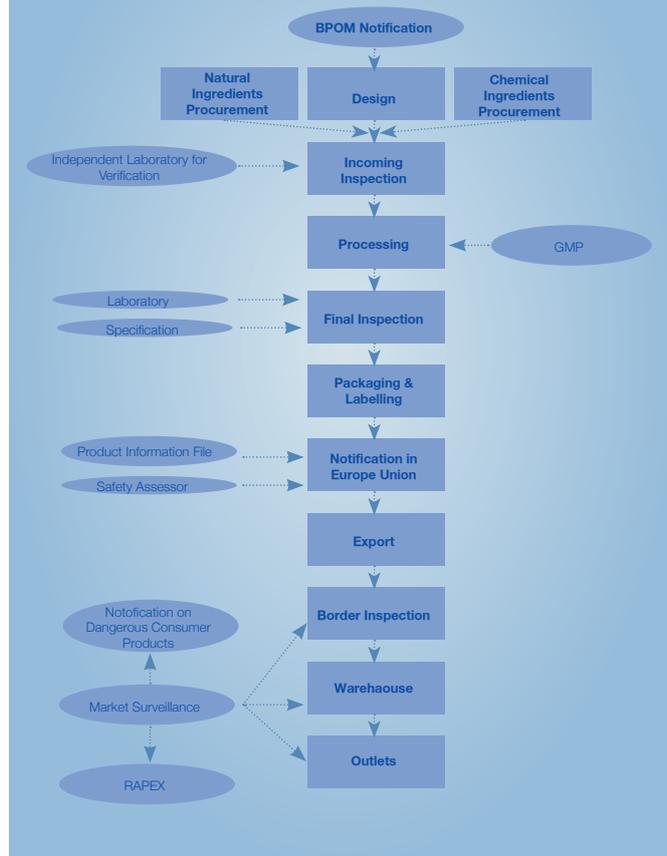
In Indonesia about 700 companies are producing a wide variety of cosmetics. Indonesia has a long tradition in natural cosmetics due to its vast natural plant resources. The cosmetic products are categorized as natural cosmetics (only natural ingredients), semi-natural cosmetics (natural and chemical

ingredients) or cosmetics made from chemical ingredients only. Approximately 700 companies produce a wide variety of cosmetics, the majority being SMEs producing 100 percent natural products.

The European Union has defined “cosmetic product” as any substance or mixture intended to be placed in contact with external parts of the human body to clean, perfume, correct body odors, change the appearance, protect and to keep in good condition.<sup>196</sup> For instance, products which fulfill this definition are; creams, face masks, skin powders, soaps, deodorants, hair care products, shaving products, products for make-up, sunbathing and nail care.<sup>197</sup>

Cosmetics exported to the European Union are subject to EU requirements on composition, packaging, labeling and information provided. In the following paragraphs, the production process is discussed including product quality and the safety requirements of the European Union.<sup>198</sup>

Figure E3.1:  
Value Chain for the Cosmetics Industry Using Natural Ingredients



The value chain of exports by the Indonesian cosmetics industry to the European Union can be described in terms of activities starting with the purchase of raw materials through to the final distribution in the market. Figure E3.1 illustrates the value chain for the cosmetics industry using natural ingredients. It shows the relationships between the various agents within the value chain and illustrates the flow of goods from raw material supply to the consumer. The figure also indicates all relevant quality and product safety requirements. The following sections indicate how and where the actors in the value chain have to deal with these requirements.

### Step 1 – Design of new Products and BPOM Registration

*Process Description:* The design process aims to create a new product that fulfills customer demands but must not be harmful to humans particularly during application. During the design step all the quality and health issues of the product have to be considered. Failure in addressing health risk in this step will lead to non-compliance with government requirements.

Every new product has to be registered with the National Agency for Drug and Food Control (Badan Pengawas Obat dan Makanan, BPOM) after the completion of the design phase. The approval process conducted by BPOM may take up to one year.

<sup>196</sup> See Council Directive 76/768/EEC and its amendment commission directive 95/34/EC

<sup>197</sup> A more detailed inventory can be found in commission decision 96/335/EC

<sup>198</sup> A more detailed inventory can be found in commission decision 95/34/EC

*EQI Issues:* During design the most important EQI issues are related to the ingredients used in new products. Careful selection of ingredients is the key for ensuring the safety of the finished product. The European Union, and also ASEAN and Indonesia, have identified prohibited ingredients and defined the maximum concentration rates for allowed ingredients.<sup>199 200</sup> In addition, EU requirements prohibit the use of ingredients that have been tested on animals if an alternative method without animal testing has been validated and adopted by the European Centre for the Validation of Alternative Methods (ECVAM). Both the EU regulation and the Indonesian regulation also contain lists of prohibited coloring agents, preservatives and UV filters.<sup>201 202</sup>

In Indonesia each cosmetic product has to be approved and registered with the National Agency for Drug and Food Control BPOM. As of 1 January 2011 new ASEAN regulations based on notification will be applicable in Indonesia. For notification a Product Information File (PIF) has to be provided to BPOM with all necessary data including test results of ingredients and the final product. The main sources of toxicological data on ingredients are the suppliers. Prior to submission for notification the PIF must be assessed regarding quality, efficacy and safety by a certified Safety Assessor. The file is then submitted to BPOM for review and notification.

Companies who have registered their products prior to 1 January 2011 will have to provide additional information on safety, side effects and efficacy. Although this will put an additional burden on cosmetic producers the process will ensure compliance with ASEAN market requirements and will therefore allow export to other ASEAN countries.

It should be noted that the successful completion of the notification and submission to BPOM does not constitute approval for sale or agreement that the product is in compliance with all regulatory requirements. The manufacturer of the products or the distributor bears the full responsibility for compliance with all requirements.

*MSEs and SMEs:* Small companies producing natural cosmetics or semi-natural cosmetics are usually not capable of establishing the required Product Information File on their own and are not able to bear the cost of outsourcing its preparation. Without the required Product Information File they cannot apply for notification at BPOM. Consequently, many cosmetic products are found on the Indonesian market without notification and BPOM registration.

Animal testing is prohibited for products that are exported to the European Union if alternative testing methods exist. These alternative methods are usually very demanding in regard to applied technology and are far beyond the financial and technological capabilities of SMEs and MSEs. Cosmetic producers may use (mostly imported) ingredients that have been tested accordingly and attach the existing test results for notification. However, Indonesian SMEs and MSEs mostly use natural Indonesian ingredients for which the required test results are not available.

At present most Indonesian cosmetic producers, especially SMEs, are not well informed about the new ASEAN regulations applicable as of 2011.

*Conclusions:* The required notification process for cosmetic products creates a major obstacle for SMEs and MSEs for several reasons: (i) the notification process with BPOM takes approximately one year, which is too long; (ii) the upcoming ASEAN regulation will require the provision of comprehensive Product Information Files, which at present most SMEs are not able to provide; (iii) all Product Information Files have to be assessed by a Safety Assessor and at present only very few qualified Safety Assessor are available in Indonesia; (iv) SMEs and MSEs are not sufficiently aware and informed about the upcoming ASEAN regulation.

199 See Annex of Council Directive 76/768/EEC

200 The National Agency for Drug and Food Control (BPOM) has issued a regulation on cosmetics "Peraturan Kepala Badan Pengawas Obat dan Makanan Republik Indonesia No: HK.00.05.42.1018, 25.2.2008. The regulation defines the product cosmetic and which ingredients are not allowed at all or are allowed up to a certain level

201 See Annex of Council Directive 76/768/EEC

202 Annex IV and V Peraturan Kepala Badan Pengawas Obat dan Makanan Republik Indonesia No: HK.00.05.42.1018, 25.2.2008

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### **Step 2 – Procurement of Raw Materials**

*Process Description:* In their production process cosmetic producers either use 100% natural ingredients, solely chemical ingredients or a mixture of both. The small traditional cosmetic producers commonly only use natural ingredients while large cosmetic companies mostly purchase chemical ingredients from international suppliers (Europe, United States, and Japan). *EQI Issues:* EQI issues in material procurement are mostly related to prohibited substances and to the allowed maximum concentration of substances as determined in the annexes to the EU and BPOM regulations. The producer has to ensure and prove that the ingredients used in their product conform to these requirements.

Suppliers of chemicals used as raw material for cosmetics are responsible for the provision of all required information on safety such as the absence of heavy metals; physical, chemical and microbiological specifications and the results of toxicity studies. The supplier of botanical extracts is supposed to provide adequate information on the safety of ingredients supplied such as identification of plant, physical/chemical/ microbiological specifications, pesticide level, absence of heavy metals and results of toxicity studies such as skin irritation, photo toxicity and mutagenicity.

*SMEs and MSEs:* Small farms supply natural ingredients to the cosmetic industry. They can often be classified as MSEs. Some of the MSEs are specialized in certain natural products while others provide a larger selection of plants and processed plants.

Large cosmetic companies using natural ingredients need to ensure a continuous supply of these ingredients that meet their specification. As cooperation with many small farmers creates problems with regard to continuity of supply and consistency of quality, large cosmetic companies have established farmer groups. These farmer groups are supported by the cosmetic companies with capacity building measures and investment schemes for the purchase of equipment.

*Conclusions:* The supply of natural ingredients for the cosmetic industry appears to be problematic with regard to reliability of quality and delivery due to the fact that farming is mostly conducted by a large number of small-scale family businesses. The establishment of farmer groups or cooperatives that are provided with training and financial investment schemes appears to be a suitable way to overcome these problems.

### **Step 3 – Incoming Inspection**

*Process Description:* Materials purchased by the company as inputs have to be inspected to ensure their compliance with specifications. Incoming inspection may consist of a simple visual check combined with a review of documents such as Material Safety Data Sheets (MSDS) and testing reports or certificates provided by the supplier. The incoming materials may have to be tested in the laboratory of the cosmetic producer especially if the required MSDS are not sufficient or not available at all. However, only large Indonesian cosmetic companies have suitable testing laboratories equipped to detect restricted substances.

*EQI Issues:* Material Safety Data Sheets (MSDS) and compliance certificates should be provided by the supplier to ensure that prohibited substances do not enter the supply chain. MSDS and testing certificates for raw materials supplied by international companies with a high reputation are generally accepted. Chemicals and natural ingredients from suppliers without reputation without sufficient MSDS and test certificates have to be tested in competent laboratories.

*SMEs:* Small and medium size cosmetic companies purchase their raw material mainly from the local Indonesian market. Since MSDS and testing certificates are usually not available the cosmetic companies should perform required testing on the materials purchased. BPOM laboratories can conduct such analysis but companies are reluctant to use them for routine analysis since BPOM is the cosmetic control agency. At present no other laboratory is available in Indonesia that is able to perform reliable testing of cosmetics at fees that are affordable by SMEs. Consequently, the cosmetic association PERKOSMI demands an independent laboratory for cosmetic testing that *operates at reasonable prices.*

*Conclusions:* Indonesians SMEs cannot afford their own testing laboratory for the required raw materials analysis. Presently there is no independent cosmetic laboratory in Indonesia that can provide testing of cosmetic raw materials at reasonable prices.

#### **Step 4 – Processing**

*Process Description:* Cosmetic companies formulate their products by a process of mechanical grinding and mixing. All ingredients, natural and chemical, are combined in various process steps until the final products are made.

*EQI Issues:* The processing of cosmetic products has to be conducted with Good Manufacturing Practices (GMP).<sup>203</sup> GMP provides requirements with regard to building and equipment, sanitation and hygiene, production, warehouse, quality assurance measures, recording and documentation as well as internal auditing and handling of complaints and product withdrawals.

BPOM is certifying cosmetic producers for GMP. According to the certification scheme audits should be conducted every two years, but these surveillance audits are not regularly performed by BPOM. Apparently cosmetic companies complain about BPOM auditors who they claim apply the much more stringent GMP requirements for pharmaceutical industry.

*SMEs:* Most cosmetic producing SMEs do not apply GMP management practices. According to BPOM only a small number of all cosmetic producers have implemented GMP although it is mandatory in Indonesia – at least in principle. Another constraint for SMEs is that cosmetic companies are obliged to employ at least one qualified pharmacist but are not able to do so due to financial constraints.

*Conclusions:* At present the majority of Indonesian cosmetic producers do not apply GMP and therefore they cannot ensure sufficient hygiene and product safety.

#### **Step 5 – Final Inspection**

*Process Description:* The product has to be tested against quality and health safety specifications after the production process is completed.

*EQI Issues:* Testing can be performed in company owned laboratories or in external laboratories. Large companies usually have their own quality laboratory while smaller companies subcontract testing to external laboratories.

*SMEs:* The detection of prohibited substances in chemicals requires sophisticated analytical equipment. Such equipment is often not available in smaller cosmetic companies due to the high investment and operational costs. Since testing in external laboratories is also very costly SMEs often test only those parameters that can be analyzed with simple equipment.

*Conclusions:* SMEs cannot afford to operate suitable test laboratories for final inspection. At present no independent cosmetic laboratory exists that can provide testing on cosmetic raw materials or finished products at prices that are regarded reasonable by SMEs.

#### **Step 6 –Packaging, Labeling and Storage**

*Process Description:* The product is packed, labeled and stored in the warehouse.

*EQI Issues:* EQI requirements are applicable to the packaging material, the labeling, and the proper storage of the product.

Packaging material shall ensure that the products are not damaged during transport and storage and that the quality of the product will not deteriorate over time.

<sup>203</sup> For more details see Keputusan Kepala Badan Pengawas Obat dan Makanan Republik Indonesia Nomor HK.00.05.4.3870 tentang Pedoman Cara Pembuatan Kosmetik yang Baik, 2003

In accordance to EU requirements on labeling the cosmetic container and packaging has to bear information on (1) name and address or registered office of the manufacturer or the person responsible for marketing the cosmetic product who are established within the Community; (2) nominal content; (3) expiry date; (4) precautions; (5) batch number; (6) function of the product and (7) a list of ingredients in a language easily understood by the consumer.<sup>204</sup> The Commission has adopted the International Nomenclature for Cosmetic Ingredients to harmonize the use of terms.<sup>205</sup> The label must ensure that the wording, use of names, trademarks, images and characteristics mentioned are possessed by the product.<sup>206</sup>

The product must be stored properly to avoid any potential damage

*Conclusions:* Suitable packaging and storage does not appear to create major problems for the Indonesia cosmetic industry. Labeling must be regarded as a major issue for export of cosmetics into the European Union since EU regulations related to labeling are stringent and have to be followed strictly to ensure that the product can be marketed in the European Union.

### **Step 7 – Notification in the European Union**

*Process Description:* The importer or producer has to nominate a person responsible for placing the cosmetics in the market. Before importing products to any EU country this responsible person has to provide the address of the importer or the address of the manufacturer to the authorities in the country in which the product is initially imported.

*EQI Issues:* The person responsible must keep a Product Information File (PIF) readily available at the address indicated in the notification. The file must be in a language accepted by that particular member state into which the product is imported. The PIF file has to contain information on the composition of the cosmetic product and physical, chemical and microbiological specifications of the raw materials used and of the finished product. The method of manufacturing has to be described and proof of assessment on safety for human health has to be provided. The safety for human health assessment report has to be signed by a certified Safety Assessor. If undesirable effects on human health are known to possibly arise from using the product all known information on these effects have to be included into the PIF. The file must also include information on animal testing performed by the manufacturer and proof of efficacy.

*SMEs:* SMEs are facing problems with the establishment of the required PIF and the safety assessment. SMEs have difficulties in gathering all of the data necessary for the PIF. As long as ingredients from international companies are used the assessment can be derived from the data provided by suppliers. However, producers using local chemicals or natural ingredients are obliged to conduct all the required tests on ingredients and the final product thus increasing costs significantly. The second issue is that the number of qualified Safety Assessors that can perform the required safety assessments for cosmetics in Indonesia is very limited.

*Conclusions:* Large established cosmetic producers are familiar with the required notification process and do not face any problems with this requirement. SMEs are not familiar with all requirements and face severe problems with the provision of the Product Information File. The limited availability of certified safety assessors in Indonesia leads to additional difficulties for SMEs.

### **Step 8 – Post Market Surveillance**

*Process Description:* EU member states conduct regular market surveillance to detect dangerous or harmful products. Appointed inspectors perform market surveys of borders, in outlets and warehouses to verify the compliance of products with composition, packaging and information requirements. In addition, distributors and producers are obliged to inform EU authorities as soon as

204 See Council Directive 76/768/EEC

205 Commission Decision 96/335/EC defines the ingredients in detail

206 See Council Directive 76/768/EEC

they become aware of any danger involved with a product that they placed on the market.<sup>207</sup> The process of notification about dangerous products is described in detail in EU guidelines.<sup>208</sup>

### **RAPEX**

The Rapid Alert System for non-food consumer products (RAPEX) is the rapid alert system of the European Union for all kinds of dangerous consumer goods except food, pharmaceutical and medical devices. RAPEX ensures the fast exchange of information between the member states and the Commission followed by measures to restrict or prevent the marketing of any product posing a serious risk to consumers. RAPEX includes measures ordered by members or self-imposed by producers or distributors. If a member state of the European Union identifies a cosmetic product that represents a hazard to health it may prohibit the marketing of this product, withdraw products from the market or issue a warning to consumers. This state shall immediately inform the European Commission who will inform the other member states. The authorities in each member state check if these products are in their markets and take appropriate measures to eliminate the risk. The authority can issue a warning about the product, recall it from the consumers or they can require the distributor to withdraw the product from the market.

### **Testing Laboratories**

*Process Description:* Cosmetic producers and authorities need analytical test results to ensure that products do not pose any serious risk for consumers. Companies use laboratories to prepare information about the chemical and microbiological purity of their products and raw materials. Sampling and testing is required at incoming inspection of raw materials, during in-process inspection and at final inspection. Authorities performing post-market surveillance will analyze samples taken from the market in their laboratories.

Laboratories have the task of analyzing the composition of cosmetic products and raw materials. The analysis will likely include all main components of the material, but may also check for residues of prohibited substances. Analytical methods have to be identified and to be agreed upon for all parameters to be analyzed.

The number of laboratories doing testing on cosmetic products in Indonesia is still limited. BPOM has a central reference laboratory in Jakarta and regional laboratories in the provinces. Companies, which do not have their own laboratory, have to use the laboratories of BPOM or other government or private laboratories. A private laboratory performing testing on cosmetics is operated by Sucofindo. BPMBEI is a government laboratory doing limited tests on cosmetics.

*Laboratories of BPOM:* BPOM has one central laboratory and 30 laboratories in the provinces. All laboratories perform food and cosmetic testing. Due to the upcoming ASEAN regulation, which includes lists of prohibited and restricted substances, the laboratories are supposed to be capable of analyzing more parameters than under the current Indonesian law. At present most BPOM laboratories have still shortcomings with regard to analyzing these new parameters. In addition, the BPOM reference laboratory performs only limited Proficiency Tests and does not provide Certified Reference Material to its testing laboratories. However, the BPOM reference laboratory can provide some Standard Reference Materials (SRM) to its testing laboratories.

*Laboratory for Quality Testing of Export and Import Goods / Balai Pengujian Mutu Barang Export dan Impor (BPMBEI):* The BPMBEI laboratory conducts tests on cosmetics in its cosmetic laboratory and its instrumental laboratory. Tests are performed on heavy metals with Inductive Coupled Plasma (ICP). Pesticide residues can be analyzed in the instrumental laboratory with a Liquid Chromatography Mass Spectrograph (LC-MS MS).

<sup>207</sup> See Directive 2001/95/EC Article 5(3)

<sup>208</sup> See commission decision 2004/905/EC on guidelines for the notification of dangerous consumer products to the competent authorities of the Member States by producers and distributors

*EQI Issues:* EQI issues related to laboratories are twofold; lack of international recognition of the Indonesian laboratories and the limited number of independent laboratories. One cosmetic company exporting to ASEAN countries reported that they are performing all testing in Malaysia as the test results from Indonesian laboratories are not accepted in the other ASEAN countries. Testing in other countries leads to increased costs and requires more time due to distance and transport. The cosmetic association PERKOSMI sees an urgent need for one independent cosmetic laboratory to serve the smaller cosmetic producers.

MSEs and SMEs: SMEs and MSEs need a competent laboratory with reasonable prices to perform product quality testing. Currently only BPOM operates comprehensive testing facilities for cosmetic products but does not have the capacity to serve the cosmetics companies with quality testing. At present other government laboratories such as BPMBEI provide only limited testing.

Conclusions: A laboratory for cosmetic testing that can provide services to the MSEs and SMEs is necessary. PERKOSMI proposes to build and operate a new private laboratory although the financing mechanism is not yet clear. The BPMBEI laboratory is in general well equipped and could be developed to perform the required testing for cosmetics. As a subsidized government laboratory the prices could be kept lower than in a private laboratory.

The reference laboratory of BPOM has shortcomings in providing CRM and PT to its testing laboratories. New test methods to cope with the new ASEAN regulation are not identified yet and not validated for use in the test laboratories.

### **E.3.3 Industry Support Services**

Three associations and two government laboratories have been identified to provide supporting services in the cosmetic sector: PERKOSMI (Persatuan Perusahaan Kosmetik Indonesia), GP JAMU (Gabungan Pengusaha Jamu dan Obat Tradisional Indonesia), and ACA (Asian Cosmetic Association). BPMBEI-MoT is a government owned laboratory that provides quality and safety testing for cosmetics. BBKK-Mol (Balai Besar Kimia dan Kemasan) provides mostly testing on packaging, including packaging for food and cosmetics; however, it is also able to do certain tests on cosmetic products. The largest association is PERKOSMI. Most of the large cosmetic producers and many SMEs are members of this association. GP-JAMU is a small association for producers and suppliers of natural products. ACA is an ASEAN cosmetic association, which aims to increase the trade within ASEAN countries by harmonizing and maintaining cosmetic regulations.

*PERKOSMI:* In 1978, the Association of Indonesian Cosmetics Companies, also abbreviated to PERKOSMI (Persatuan Perusahaan Kosmetik Indonesia) was founded and presently has approximately 300 members. The members are not only producers but also raw material suppliers and distributors. PERKOSMI's vision is to help cosmetic companies support the development of the Indonesian cosmetics sector.

PERKOSMI collaborates with the Government to prepare and apply regulations concerning the cosmetics business. Another mission of PERKOSMI is to facilitate its members in comprehending and complying with the rules and regulations concerning cosmetics. Additionally, PERKOSMI represents cosmetic companies in Indonesia, particularly in complying with the harmonization of cosmetic rules and regulations in ASEAN, as well as in relation to other regional and international organizations and other business/industrial associations. Lately, PERKOSMI has attempted to cultivate and intensify regional and global trade through the harmonization of rules and regulations as well as the removal of market access obstacles of a regulatory nature.

With regard to traditional cosmetics, PERKOSMI distinguishes between 100 percent natural cosmetics and mixed cosmetics. Mixed cosmetics use chemical raw materials blended with natural ingredients, which enhances performance as 100 percent natural cosmetics lack in performance compared to mixed cosmetics. Usually MSEs produce 100 percent natural cosmetics.

PERKOSMI supports MSEs and SMEs through training and the provision of information on export opportunities. They have plans to extend their services by providing information on EU regulations to SMEs and by helping SMEs enter EU markets.

PERKOSMI sees an urgent need for an independent laboratory for the verification of raw materials and final inspection for MSEs and SMEs. The laboratory should provide the testing services at reasonable prices since MSEs and SMEs cannot afford high testing prices.

Gabungan Pengusaha Jamu dan Obat Tradisional Indonesia (GP JAMU), the Indonesian herbs and traditional medicine association, provides support mostly to SMEs and farmers of natural ingredients.<sup>209</sup>

**ASEAN Cosmetics Association:** The ASEAN Cosmetics Association (ACA) aspires to develop the cosmetics industry as well as to promote trade in the South East Asian region. ACA membership comprises organizations from different countries, aiming to harmonize and maintain cosmetic regulations. In February 2001, the ACA collaborated with various leading countries in ASEAN to utilize the infrastructure program as a means to support the harmonization of cosmetic regulations. Malaysia was appointed lead country for Cosmetic GMP and Singapore was chosen for Safety Evaluation/Post Marketing Surveillance. Thailand is the lead country for the ASEAN Scientific Committee.

In 2003 ASEAN ministers signed an agreement on the ASEAN Harmonized Cosmetic Regulatory Scheme. This agreement includes the ASEAN Mutual Recognition Arrangement of Product Registration Approvals for Cosmetics and the ASEAN Cosmetic Directive. Technical documents were developed to support the implementation of the agreement. These include an illustrative list of cosmetic products by category, product registration requirements and procedures, common labeling requirements and a handbook on ingredients listings, common claims guidelines, common import and export requirements, and good manufacturing practice.

The Mutual Recognition Arrangements for conformity assessment as well as the harmonization of standards and technical regulations contribute to economic integration in ASEAN. The ASEAN Harmonized Cosmetic Regulatory Scheme will assist regulators to implement best practices and ensuring safety for consumers. This will help the cosmetic industry to reduce costs and facilitate access to ASEAN and international markets for their products.

ACA has a very informative website.<sup>210</sup> The information section of the ACA website provides many documents related to quality and safety issues relevant to companies trying to comply with ASEAN export regulations.

**BPMBEI:** The Laboratory for Quality Testing of Export and Import Goods (BPMBEI) provides testing of cosmetics for various safety parameters. BPMBEI is well equipped with measurement devices for testing cosmetics but does not provide information services. The laboratory appears not to be well-known to the cosmetic industry.

**BBKK:** BBKK (Balai Besar Kimia dan Kemasan) is located close to BPMBEI. BBKK has decided to provide more testing of cosmetic products and wants to coordinate its activities with BPMBEI so that the combined resources of both laboratories will be in a position to conduct the full range of tests required. The laboratory receiving a sample will then subcontract the other laboratory for analysis it cannot perform. NQCLDF-BPOM should serve as a source of information and a provider of training for technical laboratory staff of both the BPMBEI and the BBKK.

209 No additional information could be gathered on this association due to the lack of website and written sources of information from brochures and similar products.

210 See <http://www.aseancosmetics.org/Default>

### E.3.4. Regulatory Framework

#### E.3.4.1 Regulations

The Minister of Health of the Government of Indonesia (GOI) has issued Regulation No. 1175/MENKES/PER/VIII/2010 on the registration of enterprises involved in the production of cosmetics.<sup>211</sup> Only those companies that are registered and licensed are permitted to produce and distribute cosmetic products. There are two types of licenses: type A allows the production of all forms and types of cosmetic preparations; and type B only allows the production of basic or low-tech, forms of cosmetics preparations.

Type A permits have the following requirements: (1) the cosmetic is produced by a qualified pharmacist that is fully responsible for the cosmetic product; (2) the cosmetic is produced in appropriate facilities in accordance with the characteristic of cosmetic product; (3) the facility contains a laboratory division; and (4) the production methods follows the so-called Good Cosmetic Production Method (CPKB). Type B permits have the following requirements: (1) the cosmetic is produced by a qualified pharmacist that is fully responsible for the cosmetic product; (2) the cosmetic is produced in and appropriate facility with adequate technology; and (3) the staff of the facility is able to perform appropriate sanitation, hygiene, and documentation based on CPKB.

#### E.3.4.2 Implementing Regulations and Compliance

One of the GOI main concerns in cosmetic industry is product safety and standard. GOI realized the importance of regulation of Good Manufacturing Process (GMP) and publish a sector specific regulation for GMP or Cara Pembuatan Kosmetik yang Baik (CPKB). GOI grants a great importance to CPKB implementation and has set up several programs to facilitate the cosmetic industry ( both large and small business) adopting this standard.

Adoption of CPKB is the basic eligibility requirements for implementing quality assurance systems and international consumer protection. In July 2010 the National Agency of Drug and Food Control (NADFC) issued guidelines for the implementation of CPKB.<sup>212</sup> The focus of the implementing regulation is on the protection of consumers from possible hazards. It covers technical guidelines on quality management systems, personnel, buildings, equipment, sanitation and hygiene, production, supervision, quality, documentation, internal audit, handling complaints, and withdrawal of products.

Halal standards are also being increasingly applied to the cosmetics production process. Those standards require that all ingredients comply with halal and Shari'ah requirements, which excludes the use of non-halal ingredients like alcohol or materials derived from pigs. Furthermore, the ingredients must be stored, manufactured, packaged, and delivered in accordance with strict halal standards by Majelis Ulama Indonesia (MUI). Although awareness of Halal cosmetics is limited, there is considerable potential for marketing of the products through an information dissemination campaign in ASEAN and Middle East countries.

#### E.3.4.3 Harmonization of the Cosmetics Industry in ASEAN

Indonesia has also become involved since 2003 in the ASEAN Harmonized Cosmetic Regulatory Scheme. Under this agreement, member countries agree to undertake actions leading to the harmonization of the cosmetics industry in the following areas: (i) definition of cosmetics; (ii) cosmetic ingredient listings and their publication in the ASEAN Handbook of Cosmetic Ingredients; (iii) cosmetic labeling requirements; (iv) cosmetic claims guidelines; (v) product registration requirements; (vi) cosmetic import-export requirements; and (vii) guidelines for Cosmetic Good Manufacturing Practice.

211 Ministry of Health. Regulation of Minister of Health No. 1175/MENKES/PER/VIII/2010. 2010 Regarding the Registration for Cosmetic Production License. Jakarta, Indonesia.

212 National Agency of Drug and Food Control (NADFC). Regulation of Head of National Agency of Drug and Food Control (NADFC) Number HK. 03.42.06.10.4556 Regarding the Cosmetic Good Manufacturing Practice. Jakarta, Indonesia

### E.3.5. Case Study of a Leading Indonesian Cosmetics Company

PT Cosmetics Indonesia (PTCI) is one of the largest cosmetics companies in Indonesia. While many of its products and treatments feature traditional Indonesian herbal ingredients (jamu) and other natural plant extracts, PTCI also produces a wide variety of cosmetics and skincare, body care and hair care products for the modern woman. The company's range of products consists of cosmetics and personal care (make-up base, skincare, body care and hair care), jamu, and spa products. The products are specifically designed for the Asian women. As well as serving the domestic market, PTCI also exports its products to other Asian countries and to a lesser extent to Europe.

PTCI requires various natural ingredients for its products. PTCI operates a small farm where it grows various natural ingredients for very specific products. The company relies on a large number of SMEs to provide most of their ingredients.

#### E.3.5.1 Quality Assurance and Export Requirements

PTCI participates actively in the ASEAN Cosmetic Committee, which consists of nine Asian countries. The committee has a discussion forum meeting every six months to discuss problems faced by all members, especially those related to the ASEAN Cosmetic Directive (ACD) implementation which will come into effect in January 2011. Due to its participation in this forum PTCI is always well informed about new export oriented developments and regulations.

PTCI is now preparing for the implementation of ACD to ensure improved quality assurance and to increase access to ASEAN markets. Due to the similarities between ACD and EU cosmetic Directives, PTCI believes that by implementing ACD it will also gain easier access to European markets. It was quite challenging for PTCI to achieve compliance with the safety regulations and GMP requirements, especially with regard to documentation.

The implementation of ACD requires certain changes and strategic actions in PTCI such as:

*Notification:* PTCI has to notify all its existing registered products with BPOM. The new notification process requires more information than the previous BPOM registration. PTCI is now compiling all information required.

*Safety evaluation of ingredients:* In addition to the safety evaluation of finished products, which was already required in the current registration system, PTCI will have to ensure safety evaluation of ingredients for notification. PTCI is currently preparing the evaluation in cooperation with its suppliers including the farming groups. To support the safety evaluation PTCI has developed safety evaluation guidelines for its suppliers.

*Product Information File:* Due to the large number of existing (registered) products that have to go through the notification process, PTCI has a very challenging task ahead developing the Product Information File (PIF). PTCI is currently collecting all the required additional data and test results for the completion of the PIF and has developed a communication process with its suppliers to ensure that information can always be provided efficiently when required or requested. PTCI also faces problems with regards to laboratory testing. As the laboratories available in Indonesia cannot conduct all the requested analysis, PTCI has to do the testing outside Indonesia.

*Safety Assessor:* The Product Information File has to be assessed and approved by a qualified Safety Assessor, a professional still difficult to find in Indonesia.

*Labeling:* PTCI has developed a new labeling system in accordance with the ACD. The new labeling system includes information on: product name and function, instructions for use, full ingredient list, country of manufacture, contents (weight/volume), batch number, manufacturing and expiry date (expiry date labeling is mandatory if durability <30 months), name and address of company responsible for placing the product in the market and special precautions (taken from the annexes of the directive or decided by PTCI based on the safety assessment).

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*Post Sales:* PTCl has developed a better system for the handling of complaints.

### **E.3.5.2 Cooperation with Farming Groups and Information Sharing**

PTCl is a producer of natural cosmetics and needs a large amount of natural ingredients for its production. PTCl cooperates with a large amount of suppliers spread all over Indonesia to ensure a continuous supply of natural ingredients. Since PTCl uses a wide range of natural ingredients, the suppliers are mostly farmers. In order to streamline the supply chain PTCl usually cooperates with farming groups or cooperatives instead of individual farmers. As the collaboration in farming groups is still a relatively new development such groups cannot be found in all of the farming areas in Indonesia. Therefore, PTCl has initiated new farming groups in various regions. Each farming group can supply more than one ingredient and some are able to perform post harvesting pre-processing. According to PTCl the farmers in Java provide better post harvesting product quality than farmers outside Java. In order to ensure quality PTCl supervises and controls the post harvesting on site.

PTCl established a capacity building program for its suppliers providing classroom and on-the-job training. Coaching is sometimes also provided for new farming groups. PTCl's own farm of ten hectares, which grows organic plants in Cikarang, is also used as training venue. At present PTCl conducts information events for the farming groups on the ASEAN cosmetic directive (ACD), particularly on the ACD ingredient regulations.

PTCl also provides a soft loan mechanism for its suppliers as part of its Corporate Social Responsibility (CSR) program. However, retaining suppliers, particularly the traditional farmers, appears to be difficult. A lack of commitment and loyalty occasionally leads to problems regarding continuity of supply and acceptable quality of materials. Therefore, the careful selection of the farming groups is of high importance.

### **E.3.5.3 Lesson Learned from PTCl's Experience**

It is important to establish strong supply chains to ensure continuous supply with regard to quantity, quality and traceability. Supply can be ensured through the establishment and operation of company owned farms or cooperation with individual farmers or farming groups. Many cosmetic companies are reluctant to establish and maintain their own farms since farming is not their core business. However, working with many individual farmers or farming groups needs the development of a special business relationship. These suppliers have to be guided and trained, and a continuous flow of information with them has to be ensured.

## E.4 Summary and Conclusions

One of the fastest growing segments of the global cosmetic market is products made from natural ingredients. In the industrialized countries, for example, consumption of cosmetics using natural ingredients is growing at rates that are 50 percent higher than those of other types of cosmetics. Indonesia is in the fortunate position of having one of the most biodiverse environments in the world, with access to a large variety of natural cosmetic ingredients. The country has a long tradition in producing natural cosmetics using its vast plant resources. Approximately 700 companies produce a wide variety of cosmetics, but only about 20 of them are classified as large-size enterprises. The majority of companies are SMEs producing natural products-based cosmetics for the domestic market.

Exports of the industry are concentrated in the ASEAN region, and are mainly in the form of essential oils and beauty makeup preparations. End-use products include beauty makeup preparations, while exports of natural cosmetics ingredients are largely essential oils of geranium and vetiver. Indonesia only exports 10 percent of its natural cosmetic products and ingredients to the European Union, even though the European Union is the world's largest market. The European Union imports nearly US\$6 billion worth of cosmetics annually, three-fourths of which come from China, Switzerland and the United States. A mere 0.6 percent come from Indonesia. Nonetheless, the growing concern of end-users about the presence of possible harmful 'synthetic' ingredients offers Indonesia a considerable opportunity to improve its presence in the EU market and elsewhere.

The challenges to realizing Indonesia's export potential are concentrated in marketing difficulties and supply-side constraints of the natural cosmetics industry, including those related to the regulatory environment. Production costs and exchange rate pass-through into the export price of Indonesia in the EU market have significantly impacted trade, especially in 2000-2005. China has maintained a significant competitive advantage in its prices of cosmetic products, a situation that has benefited from that country's undervalued currency. China has therefore been able to significantly increase its share of the EU market at the expense of countries like the United States and Switzerland. Non-price factors have also undermined Indonesia's exports outside the ASEAN region to markets like that of the European Union. Among the most significant factors are (i) a lack of understanding of EU distribution channels for cosmetics products; (ii) lack of SME access to export markets; (iii) lacking cluster development and collaboration with overseas networks; (iv) difficulties in accessing regulations within Indonesia and foreign markets like that of the European Union; and (v) high logistics costs.

Specific findings on the supply side are as follows:

- **Registration Process with BPOM**

At present the registration process with BPOM frequently takes up to one year. Such a long time period is regarded a serious business constraint as it delays the launching of any new product. A faster registration processes would increase the competitiveness of Indonesian cosmetic companies.

- **Product Information File**

The ASEAN Harmonized Cosmetic Regulatory Scheme requires notification of all existing and new cosmetic products. A Product Information File (PIF) has to be provided to BPOM during the notification process. In addition to the safety evaluation of finished products, which is already a requirement of the current registration system, companies will have to ensure safety evaluation of ingredients for notification. Cosmetic producers are facing the tremendous task of collecting the required data for all ingredients used in their products. This data is not readily available for locally supplied natural ingredients and additional testing has to be performed.

While multinational companies and large national cosmetic producers do not face problems in preparing the PIF, this new requirement must be regarded as a major challenge for SMEs as they are not familiar with the administrative process and the applicable methodologies and technologies.

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- **Qualified Safety Assessors**

The Product Information File has to be assessed and approved by a qualified Safety Assessor. It is still difficult to find qualified Safety Assessor in Indonesia as a comprehensive safety assessor training and evaluation scheme is not available yet. Despite the fact that short training courses have been developed and are offered by Universitas Indonesia (UI) in cooperation with BPOM and PERKOSMI, the competence of Safety Assessors is not entirely ensured. No certification scheme for Safety Assessors is available.

- **Good Manufacturing Practices in SMEs**

The processing of cosmetic products has to be conducted in accordance with Good Manufacturing Practices (GMP). GMP stipulates requirements regarding buildings and equipment, sanitation and hygiene, production, warehousing, quality assurance measures, recording and documentation as well as internal auditing and handling of complaints and product withdrawals.

At present the majority of Indonesian cosmetic producers does not apply GMP and can therefore not ensure sufficient hygiene and product safety. In principle the application of GMP is mandatory for cosmetic producers in Indonesia.

Most cosmetic producing SMEs do not apply GMP management practices. According to BPOM only a small number of all cosmetic producers have implemented GMP although it is, in principle, mandatory in Indonesia, but this regulation is not implemented.

- **Independent Cosmetic Laboratories**

A competent laboratory to perform testing of product quality with reasonable prices is required. Currently only BPOM operates comprehensive testing facilities for cosmetic products but does not have the capacity to serve the cosmetics companies with quality testing. At present other government laboratories such as BPMBEI and BBKK provide only limited testing.

- **BPOM Cosmetic Laboratories**

BPOM operates one reference laboratories and 30 test laboratories in various provinces in Indonesia. The reference laboratory of BPOM has shortcomings in providing CRM and PT to these 30 BPOM testing laboratories and any other cosmetic laboratory. Only some new test methods to address the new ASEAN regulations have been identified and have been validated to be used in the test laboratories.

To address these challenges we suggest some areas of intervention that could be integrated within the Government's strategy and action plan for the industry, along with industry-based EQI activities supported by TSP II or other donor interventions. They are grouped into the following broad action areas: (1) industry strategy for extra-regional markets; (2) investment in research & development (R&D); (3) applying lessons from natural cosmetics industries in other countries; (4) cluster and networking development; (5) SME support; (6) testing laboratory for cosmetic companies; (6) BPOM reference laboratory.

