Study of Instruments and Tools to Anticipate the Effects of Industrial Change - Portuguese report

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UNL-FCT, CESO ID

March 1996

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Final version

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Report for the "Study of Instruments and Tools to anticipate the effects of industrial change on employment, trades and vocational qualifications" (EC-DG V, ITS-EuroNet)

ITS - CESO I&D

FCT-UNL

Lisbon

March 1996

Abstract

This study was produced for the "Study of Instruments and Tools to anticipate the effects of industrial change on employment, trades and vocational qualifications" and for DG V (Employment) of the European Commission in the late 1994. It started when the previous Portuguese government was still ruling, the main policies were defined, and the available instruments were not used in a minimum extend. The new Government, issued from the 1995 elections, proposed "employment" as a major objective with horizontal responsibility. That's also why there is now a Ministry for Qualifications and Employment, and another one for Solidarity and Social Affairs, not one for Employment and Social Affairs as the previous Government had. But more than that, this objective is considered to need a coordinated and consistent action that involves external affairs, industrial and regional policies, and the policies on education, training and employment, among others. The promotion of the "quality of employment" is being recently done at the working conditions, remuneration, social protection, occupational promotion levels, and the equality of opportunities towards employment and vocational training levels, and finally, the levels of qualification of human resources for a better labour market, education policy and training policy developments.

In Portugal, the influence of the industrial change is produced in a top-down way; with (in some cases) an *ex post* analysis process to formulated training needs. This means that the industrial change impact is produced (normally, unexpectedly), and afterwards the responsible at the company level tries to know which training needs should be formulated in order those effects could be the smoother possible. The training needs at the company level is not based on anticipatory studies, neither is done any long term forecast on qualification, or even employment level.

Keywords: employment; qualifications; Portugal; labour market; working conditions; human resources; foresight; forecasting.

JEL classification: E24; H30; H75; J08; J48; J60

Introduction

This report was produced for the "Study of Instruments and Tools to anticipate the effects of industrial change on employment, trades and vocational qualifications" demanded by DG V of the European Commission in the late 1994, and started under the coordination of ITS (Holland) in mid 1995. This report was developed with a major part of all members of the EuroNet: Work and Education consortium. In Portugal this study was realised by CESO I&D, with the coordination of António Brandão Moniz.

The authors want to acknowledge and recognize the support they receive, since the beginning of the elaboration of this report, from Margarida Abecassis (Vice-Director-General of Employment and Vocational Training) and Mário Caldeira Dias (President of IEFP).

Other people supported in different steps this research activity - although they are not also responsible for the eventual mistakes that can occur - like António Mil-Homens (CESO I&D), Ilona Kovács (ISEG-UTL and SOCIUS), Maria Conceição Cerdeira (MQE and ISEG-UTL), António José Almeida (MQE), Maria de Lurdes Rodrigues (MC&T and ISCTE), and political responsibles that gave in-puts for this report, like Maria João Rodrigues (Minister for Qualifications and Employment), José Mariano Gago (Minister of Science and Technology) and Augusto Mateus (Ministry of Economy).

Although strong efforts were made to have in-puts from the new Government elected on October 1995 about the policies and instruments to anticipate the effects of industrial change on employment and training, it was not possible to include it sooner because other priorities from the responsible from the Ministry of Qualification and Employment and the Ministry of Economy based on the discussions and approval over the State Budget, and horizontal measures diplomas. This reported started when the previous government was still ruling, the main policies were defined, and the available instruments were not used in a minimum extend.

Only in late March was possible to know more on the political intentions from the Government on these issues. That is why this report took more time to be completed, because some parts of it had to be reformulated in order to include this new information, that in some aspects is not yet sufficiently explained.

Industrial Development Context

Portugal has an estimated population of 9,35 million people, representing 14,3% the young people until 15 years old and 14,8% the population of 65 and above. The country has an area of 92 thousand square killometres including the autonomous regions of Madeira and Azores. The mainland is divided into 5 planning areas, 18 districts and 305 municipalities. Portugal is served by 3 international airports (Lisbon, Porto and Faro) being the third oriented to touristic flows.

Its location is very peripheral when compared to the other EU members. In the economic point of view the economy is more integrated in Spain that is now the first seller and the second buyer of Portuguese goods and services. The road network is now progressing very fast to the inland and will be completed by European TGV and new highways.

The telecommunications network presents an adequate level of development and is also improving. Nevertheless the railroad system is affected by a declining importance.

The GDP is about 84 thousand million USD (9130 US dollars in 1993 GDP per head) and the growth has been about 3% in average since 1984. The GDP represented 53% of the average EU GDP in 1984 and 69% in 1995. The real progress nevertheless hides structural problems because, in general, Portuguese economy is less competitive than the other EU partners.

It must be also refereed that the Maastricht Treaty is imposing conditions related with price level and budget deficits undoubtedly harmful to the modernisation and reorganization process namely in what concerns with interests rates.

The over valuated exchange rate of the escudo (PTE) also increased imports with negative consequences in output and employment and accelerating agricultural and industrial decline. One of the reasons for the strong political change at the Government level in 1995 was due to this situation. The main governmental program was based on the continue effort for the disinflation supported on a combination of policies for budgetary consolidation, the

adoption of a policy of *escudo* exchange rate stability, the reduction of public deficit without increasing the taxes and the beginning of a decreasing trajectory of the Public Debt. This means a stronger policy towards the reduction of unemployment.

Employment situation

The population working in the industry represented about 34% of the total active population in 1984 and represents now less than 32%. Textile and footwear is the main sector in terms of employment, followed by oil, chemicals and plastic industries, by paper, graphic and editing industries and by metallurgy. The level of qualification is very low when compared with other EU countries.

In what concerns the labour market it could be pointed the following mismatches:

- Although the growth on the level of education of young people arriving to the labour market, the percentage of those with a professional and technical course is low (20%);
- The school dropout was and still is expected to continue high, even in low levels of schooling;
- The labour force has a deficient skill structure, mainly in some more vulnerable sectors, with high intensity of labour, on the other side, it is possible to point a low percentage of highly skilled workers;
- Small enterprises represented almost all the entrepreneurial tissue (95,7%) of firms have less than 50 workers); and present an important gap in what concerns training needs and access to training facilities;
- Long term unemployment represents 30% of total unemployment, with a tendency to grow in the short and medium term;
- Youth and female unemployment rates present a higher rate than the average, revealing a higher sensibility to the situation and perspectives of the labour market.

The Portuguese population is attaining the 0% growth. In this context is understandable the growing weight of aged people and the burden of social security on working population.

At the same time the population is too concentrated in the north seaside and Algarve with consequences in quality of life. The inland has a decreasing population and declining economic and social activity supported only by older people in low productivity and low-income sectors.

The new Government, issued from the 1995 elections, proposed "employment" as a major objective with horizontal responsibility. That's also why there is now a Ministry for Qualifications and Employment, and another one for Solidarity and Social Affairs, not one for Employment and Social Affairs as the previous Government had. But more than that, this objective is considered to need a coordinated and consistent action that involves external affairs, industrial and regional policies, and the policies on education, training and employment, among others.

The promotion of the "quality of employment" is being recently done at the working conditions, remuneration, social protection, occupational promotion levels, and the equality of opportunities towards employment and vocational training levels, and finally, the levels of qualification of human resources for a better labour market, education policy and training policy developments.

In the words of the Government programme, "the objective-employment, although imposing and counting on, to be implemented, the contribution of macro economical policies, must result from an concerted and consisted action that articulates with European construction policies, income policies, industrial policies, regional development policies, education policies, and with active policies on employment and vocational training. The objective-employment shall be the centre of a new concept, wider and integrated, of strategic negotiation" [1].

Industrial change

Portuguese Economy is widely to EU and international trade: 75% of exports and 70% of imports are going or coming from EU countries. It is

[1] Presidency of Ministeries Council: Programa do XIII Governo Constitucional, November 1995.

also vulnerable to external shocks as energy or raw materials process. So the short and medium term economic situation depends in a great measure of external economic evolution.

The exports include mainly products of traditional industries affected by strong price competition of new industrialized countries and by a quality competition of the more advanced economies.

The output decline affected every sector line since 1992 to 1994. The most relevant problems are perhaps the evolution of textile and footwear, glass industries because of the regional concentration of economic activities and the dependence of the economic life lying in these sectors.

Also, Portugal has been considered as a transition region of Europe whose characteristics have been maintained to the present [2]. The integration in the European Communities after 1986 is influencing the Portuguese economy and social system, but didn't change deeply the social-economical structures. In 1992, 55.6% of all Portuguese employment was allocated to the service sector, knowing an increase of 1.4% for the period 1979-1990. In this same period, the employment in the manufacturing industry acknowledges a decrease of 0.6%, and agriculture also a decrease of 3.7%. The industrial workers represented 32.5% of all employment in Portugal in 1992 [3]. The economy growth rate was in 1994 of 1.2% that did not reach the overall average for EU countries (2.6%).

Thus, the Portuguese manufacturing industry can be characterised by the following socio-economic aspects [4]: the Portuguese specialisation has been based on labour-intensive sectors which utilises low cost labour; there is a low technical and technological levels of the industrial firms, connected with a scarcity of technical cadres; and the low salaries do not pressure enterprises to raise their technological level up to now. This situation affects specially youth as one of the most vulnerable social groups in Portugal (as women and the long duration unemployed).

Unemployment increased from 1993 (5.5%) to 1994 (6.8%), and the long-term unemployment represented 31% of the overall unemployment in 1994. According the most recent report of the Observatory of Employment and Vocational Training (1994), the development of employment was disappointing. A decrease of 0.1% having been recorded, which does,

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[2] cf. A.B. Moniz, 1986; A.R. Santos, 1983; it can be also referred the report on the microelectronics in the Portuguese manufacturing made in 1983: J. Cravinho and L. Fernandes, 1983

[3] cf. OECD: L'étude de l'OCDE sur l'emploi. Données et explications, Paris, OECD, 1994 (Part I).

[4] cf. I. Kovács, A. Steiger-Garção, A.B. Moniz and C. Teixeira, 1987.

however, represents a significant softening of the rhythm of job losses in the previous year (-2%). The analysis of rates of employment by level of education shows, on the other hand, that there were only increases recorded for workers with less than the compulsory education, while, with regard to unemployment level, the smallest percentage increases were recorded for the same group and for those with higher education.

Otherwise, the rapid dissemination of new technologies in Portugal cannot be expected because the effect of present obstacles (technological backwardness, lack of industrial development strategy, scarcity of qualified manpower, inadequacy of the training system, high cost of innovation, or the lack of dynamism on the part of the entrepreneurial social group) would continue to be felt at medium and even at long term.

Nevertheless, some action is to be taken just from 1996 further on the restructuring of industrial sectors and firms. Towards this problem, the present Administration is about to start a new organised support policy on restructuring to reduce the social costs associated to these actions, and to guarantee the public support to reconvert involved workers, paying special attention to the traditional sectors. This support policy will involve mostly the Ministries for Economy and for Qualification and Employment.

Industrial policy

Portugal can be considered as a country that is not developing a specific industrial specialisation, although the textile and garment sector represents an important sector in terms of employment and added value. Nevertheless, there is a meaningful dispersion of industrial employment by all sectors, namely in the food, metal, electronic and chemical sectors. The direct foreign investment has contributed to the increase of this specialisation, which makes the economy vulnerable and dependent.

According to the OECD report on “Industry and Technology - Scoreboard of indicators 1995”, the weight of manufacture in the total GNP is decreasing (was in 1980 around 31%, and in 1992 is near 28%). The added value was produced mainly by the textile/garment/shoemaking sector (15,6% to 25,9% from 1970 to 1993), food industry (21,8% to 21,5% in the same period) and the metal engineering (15,4% to 17,7%).

One of the main investments made recently is the Ford-VW project in Palmela-Setúbal, and some of other major foreign investments were made in this region. In fact, the location of Setúbal region is very interesting in terms of industrial location policy, because is placed in the Southern area of Lisbon, which means in the metropolitan area of the capital, and near to the main industrial infrastructures. Is being known as an international specialised industrial region in the shipbuilding sector (large oil tankers in particular).

The textile industry was developed on the basis of a strategy of mass production with cheap and non-qualified workforce, loosing now its competitiveness. The future of this sector shell be based on a differentiated production and quality strategy [5]. Firms of this sector are very heterogeneous, existing side by side with firms equipped with new technologies oriented to quality production, many other firms, mostly small and unable to accomplish delivery times and to reach quality patterns.

The main characteristics of the Portuguese metal sector are, actually, the minor development of the segments producing "equipment goods", which is responsible for the high unit of imports and for the important trade deficit in respect to metal goods, and an export-oriented path of the sub-sectors of "transport equipment" (mainly "ship building and repairs", "motor vehicles" and "automobile components") and "consumption electronics", which are highly dependent on external demand. This means a deficient vertical integration of the different sub-sectors of the metal sector reflecting a poor articulation between internal and external markets, on one naval, and a reduced capacity of endogenous technological development, on the other hand.

Which are the sectors where the implementation of new technologies has been stronger? The answer for such a question is still difficult to give, mainly because of the scarcity of social and economical studies about the introduction (and its configurations) of new technologies in Portugal. Thus, according to a sociological survey, the use of Advanced Technological Systems in Portugal is divided as such in the different branches [6].

Advanced Technological Systems	Total	Metal engineering	Textile	Food, Drink & Tobacco	Petrol-Chemical	Non-Metallic Minerals
CAD	3.8	1.2	17.1	0.0	0.0	8.7

[5] cf. I. Kovács, A.B. Moniz, A. Mateus: FAST/ATA-1 report, 1992

[6] "Sociological Analysis of Technological and Organizational Changes in Portuguese Industry", supported by JNICT-National Board of Scientific and Technological Research, and was coordinated by I. Kovács.

CAM	4.8	11.0	2.4	0.0	2.0	0.0
CAD/CAM	11.0	18.3	4.9	5.6	8.0	13.0
Nothing	60.2	52.4	61.0	50.0	78.0	65.2
No answered	20.1	17.1	14.6	44.4	12.0	13.0

In spite of this situation, the production sector is still facing serious difficulties. Thus, one of the more important institutional obstacles consists in the lack of a definite and clear industrial strategy. In consequence it is difficult to have a coherent policy that concentrates for instance, R&D activities for certain priority objectives and develops the participation in programs at EU level, as a function of those priorities.

One of the main critiques from scholars, industrialist and unionists during the last decade was the fact that there was no real industrial policy, with some continuity since the mid-70s. There was an attempt to build up one national policy in the mid-80's [7], but only in early 90's started was can be called as an industrial policy with the PEDIP Programme. This PEDIP Programme entered in its second phase (1994-99) [8] and fully encompasses the industry sub-programme of the Community Support Framework operational programme on "Modernisation of the Economic Fabric". Is also financed by the "Environment and Urban Regeneration" sub-programme. It is designed to include the Community Initiative Programmes aimed at improving industrial competitiveness.

The PEDIP-Strategic Programme for the Development of Portuguese Industry programme in its first phase (1989-93) had projects implemented mainly in terms of:

1.investment (Prog. 1 "Infrastructures", Prog. 3 "Investment incentives", Prog. 4 "Financial engineering")

2.technological and organisational innovation (Prog. 5 "Missions of Productivity")

3.quality issues (Prog. 6 "Design and Quality")

4.training (Prog. 2 "Vocational Training").

[7] The Minister of Industry Veiga Simão developed a group of studies, with the support of MIT, to contribute to a industrial policy, but this project finished immediately after he left the Government.

[8] Formally approved on 20 of April 1994, by the Monitoring Committee of the Commission and Portuguese Government.

The second phase (1994-99) had some readjustments and from now on will continue with the investment (Prog. 1), financial engineering (Prog. 2) and training (Prog. 5) support lines. The other two sub-programmes are on reinforcement of industrial strategies (Prog. 3) and promotion of quality, productivity and internationalisation (Prog. 4). The global budget for this PEDIP-II program is 2351 MECU distributed in the following way:

Prog. 1	Promotion and consolidation of technical and technological supporting infrastructures	13%
Prog. 2	Dynamisation of complementary mechanism of financial engineering	7%
Prog. 3	Consolidation and reinforcement of entrepreneurial strategies	57%
Prog. 4	Promotion of quality, productivity and internationalisation strategies	10%
Prog. 5	Promotion of human resources development strategies	10%
Prog. 6	Management, control and assessment of the program	2%

As referred by the PEDIP Management Board, the most innovative aspects of PEDIP II are, not only the assistance to integrated projects to ensure long-term competitiveness, but also are required in-depth strategic analysis for diagnosis of large-scale investment. This industry supporting programme was designed to be flexible and able to respond to industrial shifts, "even those which are as yet impossible to foresee, so enabling certain measures to be eliminated and others created" [9]. Nevertheless, no measure was taken to create some - even few - condition to anticipate social effects of knowledgeable industrial changes.

One of the aims of PEDIP II is been the increase of pro-active measures that consist in encouraging activities "which are as essential to company development, but where market forces are insufficient to ensure their spontaneous appearance or at the speed required" [10]. Those voluntary actions should respond to shortcomings detected by means of organised studies carried out by the industry associations or technological centres (with sectoral proposes). The studies undertaken were not systematic, and were not oriented to employment and qualification effects due to the industrial development projects supported by this programme, although it was referred that "according to the PEDIP II philosophy, vocational training cannot be

[9] PEDIP News, No. 1, April 1994, p. 4.
[10] idem, pp. 13-14.

separated from investment" [11]. The intention was to aggregate training investment with the various PEDIP incentive schemes, but the EC regulations under the ESF made compulsory for training to be included in measures separated from those financed by the ERDF (FEDER).

This training sub-programme contained four operational measures. "The first two measures are simply to account for the costs of training in the investment projects promoted, for bodies which provide support services to industry, and for industrial companies, respectively. As such, applications for training, although made on separate forms, shall be submitted jointly with the respective incentive-scheme forms and will be decided upon at the same time. The sub programme's third training measure will be voluntary, and in cooperation with the various bodies active in the business world will seek to deal with known shortcomings in training provision or to alter/stimulate demand for training on the part of companies" [12]. Finally, the fourth measure should serve to finance the technical support structure for voluntary activities, and should include (but did not as to our knowledge) studies and raising awareness on employment and training needs.

The social and economical studies developed in Portugal pointed out that a strategy intending to raise the technological level and the performance of the Portuguese industry should take into account that the [13]:

a) Modernisation of traditional industries should keep them competitive and make them coherent based on quality requirements and flexible specialisation;

b) Raising the technological level, by more advanced technology transfer (and not just the more mature one that offers lesser risk factors), should keep in mind the development of endogenous growth capability and the increase of the assimilation of more advanced technology, and specially of APS (anthropocentric production systems);

c) Portuguese industrial firms shall participate in R&D programmes of co-operation at the EU level, in the development of new technical systems for the creation of new growth centres with consequent decrease of Portuguese dependency of equipment, foodstuffs and energy sectors;

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[11] idem, p. 16.

[12] idem, p. 16.

[13] cf. A. B. Moniz: The Spatial Influence of Industrial Development: The Portuguese case, Brussels, FAST/IAT, 1993; cf. Monitor Company/CEDINTEC: A competitividade da indústria portuguesa, 1994.

d) Experimental programs should be supported by the Administration to promote new production systems (specially, in PEDIP);

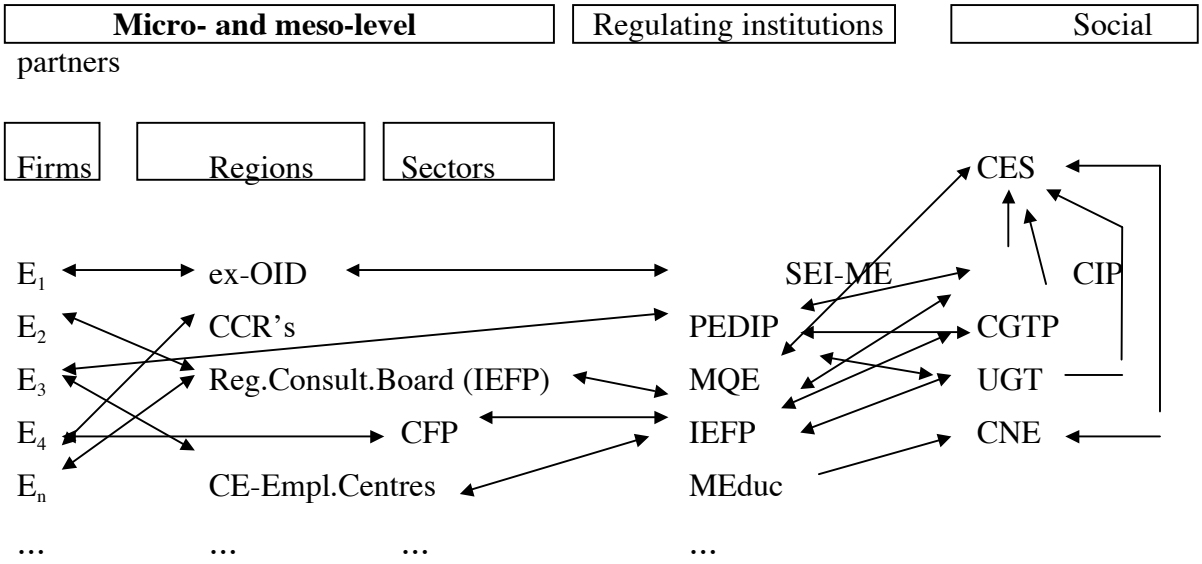
e) Training actions and dissemination of publications relative to those new production systems must be supported and disseminated toward the social partners;

f) Training programs for all those that intervene in the labour world (engineers, unionists, industrial sociologists, psychologists, personnel managers), should integrate the human and social issues of production.

Several reports insisted on these issues, but quite few were done. The fact that to support investments and innovative experiences, industrialists are dependent from the EU Structural Funds (and indirectly, from Government policies), means that almost nothing is done with out that support. For example, activities on R&D are very limited in industry. In 1992 only 3,3% of the R&D investment from the State was done by firms (EU-15 average was 19,4%), and 15% of the R&D costs were paid by foreign flows (EU-15 average was 5,7%). With this type of difficulties, there will continue a strong dependency from the availability of tax incentives decided by the state financial policy.

Very few are being done in the field of relationship between industrial change and effects on employment and training. One of the reasons for this situation is due to the need for a "tunning" with the macro-economical regulation policies of the EU, namely, the integration in the EMU that requires des-inflation, entrepreneurial competitivity, and adequation to the evolution of price levels in Europe. Nevertheless, the articulation between the so-called "nominal convergence" and the "real convergence", presupposes - according to the new Government program - the promotion of the working and living conditions in Portugal, as well as the harmonization of price systems, the levels of productivity, the form of manufacturing specialisation and the conditions of public policies. That articulation is based on a new industrial policy and on active employment and budgetary reorientation policies and on social policies oriented to solidarity and social cohesion.

The following scheme can show some relation between the micro- and meso-level of industrial change until now, and the regulating institutions and social partners:



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OID-Operation for Integrated Development (Setúbal, North-eastern Alentejo and Ave river valley)
CCR-Regional Coordinating Committee (Ministry for Planning)
CFP-Centres for Vocational Training
SEI-ME - Secretary of State for Industry (Ministry of Economy)
MQE-Ministry for Qualification and Employment
MEduc-Ministry for Education
IEFP-Institute for Employment and Vocational Training
CES-Social Economical Council
CIP-Portuguese Confederation for Industry
CGTP-General Confederation of the Portuguese Workers
UGT-General Union of Workers
CNE-National Council for Education

As it can be seen there is few relationship between the regulating institutions, the social partners and the firms (except for PEDIP, but this program has almost no relation with the MQE directly). Also is difficult to separate the industrial policy with effects on employment, and on vocational training.

The SEI-ME is the main institution that coordinates and rules the PEDIP policy and the OID activities. This means that the Ministry of Economy governs the supporting policies for industrial investment. But it is not asked for prior strategic policy studies on employment or qualification structures. Social partners are not directly involved on assessment of industrial policy either.

At the same time, all the supporting activities from the IEFP, and CE-Employment Centres, and also the Regional Consultive Boards, which have effects on individual firms, are not taking into consideration parallel criteria for investment supports (for example, from PEDIP). Also the design of Vocational Training for IEFP centres and courses has not a reference on the studies prepared by the MQE, the Ministry of Economy of the IEFP itself. However, MQE is starting a new activity in the field of training design and assessment by creating a Commission for the Innovation of Training (March 1996). The intention is also to promote the needed articulations with the industrial policy and R&D policy, with the regional development policy, the educational policy and the employment and labour policy, according to the Government programme.

This articulation would need a permanent system for evaluation of training needs for short-, as well medium- and long-terms, in the framework of the so-called strategic negotiation.

In general, policies related with employment and vocational training doesn't include recommendations studied and evaluated in several fields, mayoralty at the IEFP main activity site. This means that, although there are instruments available to anticipate the effects of industrial change, they are not used. One of intentions of MQE is, through the mentioned Commission for the Innovation of Training, to implement coherent measures and instruments that can provide an efficient anticipation policy. However, this activity is very in the beginning stage.

Policies, instruments and tools anticipating effects of industrial change on employment

Institutional and structural context

Some Ministries and public institutions have a closer relation to the policies, the elaboration of instruments and tools anticipating effects of industrial change on employment. Others have an indirect influence, but the following ones are more important.

The **MQE-Ministry for Qualifications and Employment** (former MESS-Ministry of Employment and Social Security, and from the end of 1995 desegregated into two Ministries: the MQE and MSS-Ministry for Solidarity and Social Affairs) is responsible for policy in regard to labour, employment and vocational training. In the area of vocational training the MQE is responsible for the global management of the financial support from the European Social Fund. For the other activities in the field of the vocational training system is coordinated with the Ministry of Education, although some of the core activities are not systematically supported by anticipation or forecasting instruments.

Under the MQE is the **Directorate General for Employment and Vocational Training** (DGEFP) as the central office for employment policy and is responsible for planning and support in technical and legal matters for the preparation of measures in the fields of employment and training. The Institute of Employment and Vocational Training (IEFP) which is subordinate to the Ministry for Qualification and Employment is charged with the task of implementing the employment policy.

The **IEFP-Institute for Employment and Vocational Training** is a body established under public law with administrative and financial autonomy. It is subordinate to the MQE Ministry for Qualifications and Employment, but is an institute with the participation of social partners in the managing board. Is the main institution responsible for the adaptation of labour supply to the labour demand (quantitatively, through the Employment Centres, and

qualitatively, through the Centres for VT) in short-term level. Also under the MQE is the **Statistical Department** - DEMQE - responsible for surveys namely in the area of training needs and evolution of employment, skill and educational levels.

In spite of having 5 planning regions, in fact the institutional framework is very centralised, even if the public institutions are regionally represented. The Ministry for Planning develops the coordination. Nevertheless the institutional framework is very centralised. It was also this ministry that, until recently, was ruling the policy for science and technology. Since October 1995 there exists a new ministry for this specific field.

The **MC&T-Ministry of Science and Technology**, created in October 1995 is governing the activities of science and technology and related policies. In this sense there is a relation with the industrial change, and indirect effects on employment and training. One of the main institutions that manage the S&T activities is JNICT (National Board for Scientific and Technologic Research) that is funding all the research activities. This institution belonged until 1995 to the Ministry of Planning.

The Ministry of Industry conducts the industrial policy based on PEDIP (Programa Estratégico de Dinamização e Modernização da Indústria Portuguesa) supported by FEDER and ESF in cooperation with institutions specialised in innovation (INETI) and in the small and medium business promotion (IAPMEI). The new government, renamed this ministry and restructured it in a new **Ministry for Economy**, where co-exists Secretaries of State, one of them related to Industry (that will be designated as SEI-ME). This Secretary manages the PEDIP activities where DGI-MIE (Directorate General on Industry of Ministry of Industry and Energy) had its major role.

Besides, the described services of Central Administration, the main research institutions that developed studies and instruments related to employment policies are the following:

- Dinâmia - ISCTE;
- CISEP-ISEG/UTL, Centro de Investigação sobre a Economia Portuguesa;
- CIDEC-Centro Interdisciplinar de Estudos Económicos;
- CESO I&D, Investigação e Desenvolvimento;
- Challenge;
- Univ. Católica Lisboa;
- CIRIUS-ISEG/UTL, Centro de Investigação Regional e Urbana.

These institutions are developing instruments providing employment forecasts, commissioned by IEFP, MQE, JNICT or PEDIP. Some of those studies (most of them are referred in the next pages) predict shifts in employment and are based on econometrical methods.

Policies and tools at National level

The next mentioned tools for anticipating shifts on employment and qualifications are related to policy-making activities. These tools (and consequent instruments) are isolated items and normally not related with each other, basically due to the fact that the institutions that supervise the activities on analysis and forecasting major changes on employment structures and qualification needs are not co-operating between themselves, and there is only some articulation among the Public Administration. These institutions, as it was referred, are for example, IEFP, SEI-ME (or previously the DGI-MIE), MC&T (and JNICT) and the Ministry of Education.

One of the most important information sources on employment policies is a report recently published by the Directorate-General on Employment and Vocational Training [14]. In this report is presented the legal framework and the procedures related with labour and employment, and the measures related with job maintenance, unemployment, training and occupational mobility, job creation, special categories of workers, working hours, job integration and other measures, either in the Continent, or in Azores and Madeira autonomous regions.

Thus, some of the tools presented are organised by Ministries, DG's, or even social partners, but these policy do not ground measures on forecasting data. Nevertheless, most of these measures are based on political trends or data produced by the own Government institutions. Some discrepancies on unemployment data, or on social exclusion, for example, are based on the fact that the economic and social information available was not independently controlled, or the one produced by independent institutions (normally, the academic research centres) were not credited or used by the governmental administration.

[14] cf. A.C. Duarte et al.: Relatório sobre Portugal elaborado no âmbito da informação sobre políticas de emprego (MISEP), Lisboa, DGEFP, 1995, 292 pp.

In spite this situation, policy measures are taken developed based mainly on the availability of funds to support employment strategy. The evaluation of this strategy and policy measures cannot be based only on econometric methodologies, but even those were not applied. Just very recently (February 1996) was initiated a process for evaluation of some national programmes with the support of the EU Structural Funds. But the programmes related directly with employment policies are not under evaluation until now. To give an idea of how many people are involved in different employment policy measures the following table (based only on the MQE/ex-MESS activities) can explain the recent evolution in this matter:

Policy measures	1990	1991	1992	1993	1994
Vocational Training (in specific Centres, etc.)	48055	49243	54991	61012	67420
Employment support (local employ. initiatives, handcraft support, occupational programs, etc.)	12879	10152	12949	21645	30728
Youth specific measures (apprenticeship, job creation, etc.)	111511	89651	81650	72143	63297
Long-term unemployment support	16998	9216	777	852	890
Handicapped people support	7193	7116	9398	8469	7608
Insertion (employment clubs, etc.)	-	-	-	-	130
Unemployment Indemnity	67072	91489	129174	171010	163518
Anticipated retirement	12927	11890	1546	17035	20987
Total	276635	268757	303984	352166	354448

Source: MESS/MISEP, 1994

To give a comparable figure of the amount of people and investment made for these policies, one can say that in 1990 near 322,7 million PTE were spent *per capita* of people involved by the policy measures. Four years later (1994) the ratio was about 637,2 million PTE *per capita*. This means that were not only more people involved, but about the double amount of money was spent for the programme.

As a general appointment on the forecasting of shifts in employment, there are no econometrical models used to forecast economic development with "employment" as a dependent variable. The only one that can be mentioned is a static model of a input-output basis with 25 activity sectors, developed by the Dep. of Prospective and Planning, with specific information on consumption and production, but with few information on employment (MODEM 2A model).

At least if there is any used models they are not public, or know in the concerned fora. Some econometric studies are possibly done, but are restricted to the academia, or to some specific departments in the Public Administration, although they are not known in a wider community, neither they were referred during all the interviews done for this report.

Instruments at national level

Permanent Observatory of Employment; Technology and Innovation

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The Ministry of Industry and Energy and CISEP - Centre for the Study of the Portuguese Economy of the Technical University of Lisbon agreed in 1989 to set up the Innovation Observatory in Portugal. The activity of this Observatory consisted, in occasional enquiries, studies and in the collecting of data from available sources like “Quadros de Pessoal” for instance.

The general aim was to create a monitoring system of innovation in the Portuguese industry. The main objectives were:

- The study of the most typical entrepreneurial strategies concerning technological innovation and the development of human resources;
- Impact of innovation on industrial firms;
- Present and future effects of innovation on the nature of work and on work organisation;
- Relations between technological innovation and other strategic areas of the firm such as marketing and R&D.

The observatory produced one study on "Innovation in the Portuguese Industry" (1991) which remains, at present, the most significant study on this matter made in Portugal, in spite its "pioneerism" that is in part responsible for some methodological weaknesses.

[15] In collaboration with A. Mil-Homens

The survey presents a large methodological convergence with other studies and surveys launched in a number of OECD member countries and by the TEP Programme.

The main conclusions of the study concern the following areas: innovation factors, barriers, product innovation, results of the product innovation, process innovation, results of the process innovation, diffusion of microelectronics, innovation in firm management, impact of innovative activities on production factors mainly on employment and on new required qualifications, impact of innovative activities on patents and technology sales, commercial success of innovation, the "profile" of the innovative enterprise, innovation funding, average expense in R&D activities and R&D funding.

The project of the monitoring system presented by the CISEP researchers was based on a number of indicators touching the different areas of the firms - technological innovation and organisational innovation. The idea was to have a very flexible, clear and fast system of characterisation of the innovative process: R&D and S&T activities, its impact on industrial firms, diffusion of innovations and its impact on employment and qualifications, costs and funding.

But the monitoring system was not implemented. The Ministry of Industry decided to use the data of the JNICT survey on investment on S&T and the project was stopped at that time. That survey did not contemplate information on employment effects of S&T innovation.

Scenarios for a Strategy of Human Resources Development

On the run we can point the following study - “Estratégia de desenvolvimento dos Recursos Humanos em Portugal, Cenários até 2002” [16] - developed by the Ministry of Education.

This study is based in the utilisation of an Integrated Computer Model. As a long run model, the main results must be faced as main trends, namely in the field of manpower needs by groups of occupations, groups of sectors of

[16] cf. Grilo, E.M.; Abecassis, M.: Estratégia de desenvolvimento dos Recursos Humanos em Portugal, Cenários até 2002, Lisbon, Min. Education.

activity and groups of education and training levels. With this information in terms of tendencies, it is possible to underline the main aspects of the education and training policies.

This model of forecast of human resources needs, was applied three times: the first one for the period 1977 to 1995, the second study for the period 1982 to 2005. Actually, a new application is being prepared. This model aims to replace the information needs in these main areas:

- the long run economic perspectives and their impact in employment;
- the sectors and occupations and the balance between demand and offer;
- the skill and educational levels and their evolution on the long run.

The integrated computer model has permitted the analysis of different scenarios, using different groups of hypothesis, in the following areas:

- different evaluations of the strategic variables of the economic subsystem;
- changes in the qualitative structure of employment;
- new policies for the educational system.

In the construction of the scenarios, some dominant tendencies were included:

- increase of the female activity rates during the projection period, while the masculine activity rates remain stable;
- important qualitative changes of the employment structure - decrease of the weight of unskilled workers and increase of the intermediate and medium levels;
- significant decrease of employment in agriculture, especially in the less skilled occupations;

- in the industrial sectors, appearance of a substitution process of the workers related to manual works to more skilled manpower and linked with management and control functions.

From the analysed scenarios, one of them was selected as "reference scenario" reflecting a series of a possible future context:

- tendency for a structural unemployment linked to a qualitative disadjustment between the future skill needs in the different sectors of the economy and the skills that a large part of the population have;
- significant deficit of workers at the more skilled levels, namely, highly skilled workers, intermediate and medium levels of workers.

"Technological Modernisation: Implications to the Employment Structure" [17]

Study for UGT (General Workers Union) done by a private company (Challenge) with the support of PEDIP, DG for Industry, and the MIE-Ministry of Industry was made on the metal engineering and textile sectors, analysing the qualifications and reconversion of workers to new functional profiles, and the management strategies of the modernisation process in enterprises. Were surveyed 21 firms where new production processes have being introduced.

The information available was condensed in a report of limited circulation, although is public, and analysed the influence of those modernisation strategies on the employment side, namely the qualification structure in the mentioned sectors.

[17] Challenge: A modernização tecnológica: Implicações na estrutura de emprego, Lisbon, UGT/PEDIP/Challenge, 1991.

"The Enterprises and Occupational Dynamics" [18]

Is an IEFP-Institute for Employment and Vocational Training study (instrument) about companies and the dynamics of occupations and qualifications that is concerned with the relationship between the evolution of qualifications/ occupations and the evolution of sector activities.

The methodological purpose consists on identifying, based on quantitative and qualitative data, the strategically and transforming occupations in order to define the qualification and training needs in a prospective way. The analysis was based on statistical data about occupations contents obtained from around 6 hundred companies from all the sectors, and compared with the statistical information on the occupational evolution on the labour market.

Basically, is an economical study of a specific feature of the employment structure: the occupation formal content. And produced some information to forecast expected evolutions in some studied occupations in a quantitative basis.

Medium term employment forecasts

The medium term employment forecasts of Portugal, conducted by Euro-Economia [19], leads to the identification of the main trends for the period 1992-1997, in what concerns production, employment, occupations and qualifications. The methodology integrates three modules: the first one the projection of production, in the sectors of activity, the second module deals with the projections of employment by sectors - main trends and determinant factors; the last module regards the projections of employment by occupations and qualifications.

[18] A. R. Santos et al: As empresas e a dinâmica das profissões, Lisbon, IEFP, 1994.
[19] cf. Álvaro Martins: Medium term employment forecasts, Almada, Euro-Economia, 1993.

CIP

Surveys on economical situation on a monthly basis published by the review "Indústria", issued by CIP-Confederation of Portuguese Industry. This survey has compiled information from different economical sources, and opinion from key-entrepreneurs from industry. There are expectation for a wider scope of data analysed, and produced by non-economists consultants, including information on labour market, labour productivity and other ratios, and more consistent panel observatory.

Nevertheless, the assumed positions of CIP are not based on own studies with scientific criteria, or/and in the construction of instruments for anticipation of employment effects due to industrial changes. It is important to mention that, although economical information is re-worked by CIP, and social data is available, this employer's confederation produces his or her own policy on a political basis and not technical one.

The very recent debate on the hours of labour (40h) was strongly oriented by CIP to prevail the ancient week hours (44h) in order to prevent a so-called process of unemployment and lay-offs. This political position was not based on technical criteria, once there are no studies and/or instruments available that provide correlated information on productivity and working hours, or even on employment and working hours.

Policies and tools at Regional level

There is Regional Coordinating Committees (CCR), on behalf of the Ministry of Planning, which execute regional policies for industrial development. These committees support some studies on the employment policies, and needs for adapting needs of the labour market. Some important roles of these committees were presented when the OID's were developed coordinating the available EU structural funds for recessive regions (as explained above). Although they are created under the umbrella the Ministry of Planning, the CCR have autonomy to support own regional policies related with employment strategies. There is also a formal participation of employment structures in these CCR.

Dependent from the Ministry for Qualification and Employment, the IEFP at regional level has five Regional Delegations. These Delegations are responsible for the implementation of the employment and vocational training measures at the regional level and chair the regional advisory council that comprises representatives from the respective Regional coordination Committee and from the trade unions and employer's associations

As explained above, the IEFP coordinates and controls the Centres for Employment located in several regions and localities. At regional level, the IEFP has 78 employment offices, 23 vocational training centres and one rehabilitation centre. These centres are the main institutions where can be developed and applied tools for the anticipation needs of employment.

Each IEFP vocational training centre has an advisory council comprised of representatives from the public administration and the confederations of the employers' and employees' associations; the director of the respective training centre chairs the council. Those centres are the main ones that establish direct contacts with firms at the regional level, and are aware of the demand side of employment.

There are another 27 vocational training centres for one specific or several branches of industry. These are public law bodies with administrative and financial autonomy and their own assets. An administrative council that is chaired by a representative of the IEFP manages them. Is also one of the main institutions that can use directly the available data on regional labour markets (in some cases, sectoral labour markets, e.g. textile, metal, etc.), and perform the "antenna" function in their relation with IEFP central offices or the CFP-centres for vocational training.

Instruments at regional level

Observatory of Re-structuring Regions - Location of Re-structuring sectors in Portuguese Territory

A research centre from ISCTE, DINAMIA, demanded by IEFP, tried and succeeds in crossing sectors with regions identifying the regional possible consequences of sector crisis. The more exposed sectors were found on a basis of a qualitative analysis and knowledge of international economic trends. Its characterisation became possible by using available statistical data. The regional desegregation of these features allowed us to identify the possible and negative consequences. Some proposals were made in order to cope with the expected problems. This study covered all the relevant sectors with the main exceptions of agriculture and institutional services.

This can also be considered as a part from the IEFP-Institute for Employment and Vocational Training studies (tools) and instruments.

Skill shortages in Setúbal region

Commanded by DG V in 1989 to UNINOVA (located in the region), was developed a study on the skill shortages and training structures in the referred region. This study was also integrated in an international framework of European regional analysis of skill shortages and employment. This first study [20] represented also a first step for further studies, namely the FINE project (with the support of DG XII of CEC), and the evaluation of OID in Setúbal.

The main propose was to forecast the number and the qualification of workforce in a single region. As some of the issues treated in the analysis had implications on training policies and strategies, this instrument will be mentioned also in the chapter on vocational training tools and instruments.

FINE Project (FAST) on Setúbal

A report made for the FINE Project (FAST) on "Population and demography in Setúbal: Forecasting effects in the labour market" [21] was published in

[20] A.B. Moniz, M.C.Cerdeira, J. Lavadinho: Skill shortages in Setúbal region, Monte de Caparica, UNINOVA, 1989.

[21] Published in Portuguese language by Gilberta Pavão Nunes Rocha, Maria Conceição Cerdeira e António

1993 about a prospective analysis on demography in the Setúbal region. With this report one could evaluate the migratory flows that can occur in the region influencing the qualification levels, and the age structure, and indirectly the value systems and the social system [22].

This study used the available demographic methodologies to forecast the supply side of the labour market, and afterwards was integrated in the general analysis on the regional influence on the industrial change process with anticipation for the 2015 year, where employment is a dependent variable.

An analysis on the expected changes on the industrial network in a regional dimension, using the example of Ford/VW project for Setúbal, was done taking into consideration some conclusion on the new framework of industrial sub-sectors relations in the automobile sector.

A study, commissioned by IEFP, on the labour market impact of Ford/VW project was developed later on by CIDEC [23], but data on this study are not yet available.

The evaluation of OID-Setúbal

The OID-Integrated Development Operation for Setúbal Peninsula, supported by the Structural Funds for critical regions, was held from 1990 to 1993, and was based on reconversion programmes, new investment. In this sense it defined an industrial policy to one of the most industrialised Portuguese regions [24].

The launching of "Integrated Operation for Development" (OID) of the Peninsula of Setubal brought a set of instruments with an aim, among others aspects, of invigoration and modernization of the economical activity of that region. Beyond a wide program of infrastructures, the OID permitted use, in particularly favourable conditions, a series of incentives for private investments.

Brandão Moniz: "A População e Demografia na região de Setúbal: Análise prospectiva até 2021".

[22] cf. A. B. Moniz: The Spatial Influence ...op. cit., 1993

[23] A. O. Neves: O impacto do projecto Ford/VW no emprego da região de Setúbal, Lisbon, CIDEC, 1995.

[24] cf. A. B. Moniz: The Spatial Influence ...op. cit., 1993

The program for OID was presented by the Portuguese Authorities to the CEC on the 16 June 1988 and formally approved by them on 15 March 1990. The time to carry out the operation was defined for the period 1 January 1989 to 31 December of 1993 and foresees the mobilization of a vast series of financial resources calculated 554,37 MECU, with the participation foreseen about 52% by the Community.

The Integrated Operation was the object of a preparation study, concluded in 1987. Based on this study the general objectives of the operation were defined, formulated in the following points of programming:

1- Taking advantage of endogenous resources of the region;

2- Concentration of financial flows in the territory for a period of five years;

3- Creation of employment, in order to substantially reduce the rate of unemployment in the region [25];

4- Improve the living conditions of the population;

5- Improvement of conditions of the physical environment;

6- Development of a diversified economy, more modern and competitive [26].

In relation to the manufacturing industries the specific objectives were defined as being the following:

a) Reconverting modernization and reinforcement of the industrial structure;

b) Minimize the social tensions resulting from the process of reconverting;

c) Improvement of the conditions of profitability of economically viable firms;

d) The creation of self- sustaining new jobs.

[25] For this item the necessity to create 38,000 new jobs by 1992 has been projected, so as to lower the unemployment rate to 10% of the working population.

[26] Some emphasis was put here in the sector of services in the creation of units that are adapted more flexibly to the market, in modernization and technical innovation with Management and Vocational Training.

As the Ferrão and Vale report underlines, "the Portuguese government undertook to provide the area with infrastructures totalling about ECU 102 million. This would mean building new roads and railway-lines (including a siding going to AutoEuropa and linking it to the port of Setúbal), a waste-treatment station, a roll-on/roll-off portside terminal and an occupational training school for the motorcar industry" [27]. This means that this project could offer a side effect provided from the OID programme and high-level infrastructure that could be used either by other manufacturing firms in the region.

Employment structures in Azores region

Supported by Regional Secretary of Youth and Human Resources, and the Department of Statistics of the Ministry of Employment, was produced a study [28] on the employment structures in Azores region, and forecasting analysis to support anticipation process. This project on Regional Indicators of Employment was developed for all the nine islands of the region, and established a system of indicators of employment in a database for periodical updating, to make possible a dynamical analysis of the main vectors that characterise Azorean employment.

The items considered were the demographic framework, the distribution and characterisation of firms and the information on the employment structure. This instrument was prepared not only for statistical dissemination, but for further in-depth analysis of explaining factors related to the behaviour of the elaborated indicators.

Study on the Industrial Zone of Castelo Branco

[27] FERRÃO, J.; VALE, M.: "People carriers, a new opportunity for the European periphery? Lessons from the Ford/VW project (Portugal)" in HUDSON, R.; SCHAMP. E. (eds.): Towards a New Map of Automobile Manufacturing in Europe? New Production Concepts and Regional Restructuring, Springer Verlag, 1994 (forthcoming).

[28] M.J. Marinho; M.G. Correia; G. Rocha: Indicadores Regionais de Emprego, Ponta Delgada, SRJRH, 1992

On the context of the studies undergone for the Observatory of the CSF and with the objective of studying local process of economic development and the impact of policy measures, namely in the area of employment, vocational training and investment it was conducted by DINAMIA/ISCTE a study "Estudo de Zona Industrial de Castelo Branco".

Having as a basis a deep analysis of the recent trends in the local industrialization, on the evolution of the international framework, on the mechanisms and practices for the involvement of the human resources, and on the analysis of the capacity of offer from the education and training system, this study presents two different evolution scenarios: the first one correspondent to the maintenance of the "actual situation"; the second, correspondent to the transition to a development model that reinforce the competitiveness of the region.

For this second scenario, some key areas are listed as basic conditions for support of the transition:

- Adequate evolution of the education and training offer, namely the development of the technological domains at the secondary and higher levels of schooling;
- Improvement of the conditions for new entrepreneurial initiatives;
- Increase of the skill levels of jobs;
- Institutional cooperation.

One of the main proposals of this study concerns the creation of a Systematic Observatory of Strategic Areas of Change with the aim of, in that region, to analyse, in an integrated way, the results of the different policy measures and to detect the main predictable trends.

Policies, instruments and tools anticipating effects of industrial change on trades and vocational qualifications

Institutional and structural context

The only relevant institution in the context of anticipating shifts in vocational qualifications is the **Vocational Training and Employment Institute (IEFP)**, which is represented in the Portuguese 5 administrative regions. The IEFP regional representatives have already some decision ability and the context of the national measures applied in all the country is the same, but with different priorities.

The bureaucratic procedures are in general very complex and heavy and the selection criteria are not always very clear and effective. The evaluation procedures are not systematic and generalised and, so not very useful to adapt policies to problem's evolution.

The system of education and training in Portugal has been object of profound transformations in the recent years, although it is still premature to evaluate the actual amplitude of such changes. Whether they are those that can be verified by means of recent reforms in official education (an increase in obligatory education from 6 to 9 years and the reintroduction of technical professional education, extinct since 1974 at which time the unification of secondary education occurred), or those connected with the training programs by public and private entities.

It should be recognized nevertheless that, as Artur Mota states [29], there does not exist an educational and integrated training system on a national level, nor can it be said that there exist delineated and articulated systems. In fact, there exists an educational system, and an almost parallel training system, both with few connection points.

In accordance with data from the **Ministry of Employment** the overwhelming majority of the work force in Portuguese industry has only

[29] A. Mota: " A formação em Portugal face ao desafio europeu" (Training in Portugal vis-a-vis the European Challenge), Revista da Formação Profissional, nº 1/86, pp. 83.

been educated to the primary level (4 and 6 years of schooling), and very few to technical and to University level (around 5%).

There is an unsuitability of the educational system for industrial modernisation requirements. This fact is based on some studies on the gap about the needs for qualifications in new occupations in industry. Namely the studies referred in the next pages underline this situation based on the information given by entrepreneurs and scholars. Beside the fact that there is a serious scarcity of qualified labour and specially of intermediate qualification categories, it is understandable that the lack of qualified personnel, and the lack of adequate professional training, have been and continue to be one of the more problematic factors, not only in technological innovation, but also in the cases where more effectively should be used advanced technology.

The creation of adequate vocational training structures was only attempted in early 80's. Only in 1979 was the Polytechnic Superior Education implemented with the objective of broadening technical training at a more advanced level and of regionalisation the educational structures. However, this system has still even today not been able to attract young people who in the majority of cases continue to prefer attending university degree courses which are more prestigious despite the fact that they are out of synch in relation to the training needs required by the present job market.

The main research institutions and consultancy firms that are developing activities on vocational training are the following:

- Dinâmia-ISCTE;
- CESO I&D, Investigação e Desenvolvimento;
- CISEP-ISEG/UTL, Centro de Investigação sobre a Economia Portuguesa;
- UNINOVA-CRI, Centro de Robótica Inteligente;
- CIDEC-Centro Interdisciplinar de Estudos Económicos;
- SOCIUS-ISEG/UTL, Centro de Investigação em Sociologia Económica e das Organizações;
- CIRIUS - ISEG/UTL;
- MundiServiços, Lda.

These institutions are developing instruments providing vocational training forecasts, commissioned by IEFP, MQE, or even social partners. Some of those studies (most of them are referred in the next pages) predict changes in needs for vocational training and are based on sociological methods.

Policies and tools at national level

The vocational training has presently the Institute for Employment and Vocational Training (IEFP) as its main promoter, and carries out the most important activities in the field of initial and continuous vocational training, whether directly in training centres of the Institute, or in protocol training centres. The courses ministered here have as one of their main goals the promotion of qualifications among young people, contributing towards the consolidation of the alternative training system already mentioned. These very same courses aim for improving and reconverting activities associated with contexts of introduction of new process and new technologies [30].

Training in firms is mainly done on the job and training centre exists only in some sectors. Those sectors, among others, are the following:

- Electronic industry;
- Metal sector;
- Retail trade sector;
- Ornamental rocks;
- Textile and garment industry;
- Wood and forest products;
- Fisheries sector;
- Food industry.

Usually training course curricula is set up by the technology providing companies, i.e., they are the ones that transmit their specific know-how to the purchaser, which in turn transmits the knowledge to the machine operators. Beside this short term training actions, very few are being done on strategic change for the raising of the training level of the workforce. The main reason is that for the last decades competitivity laid on cutting costs of the labour force, and on labour intensive production. This kind of industrial strategy did not need high-scholarised workforce. This problem is being analysed by the recently elected Government, but no in-depth measure was taken until now.

[30] cf. Dinis (1988).

There are no available studies on anticipation of industrial change effects, developed by the **Social Economical Council**. This institution has the main role to interface the negotiation of all labour agreements. This negotiation is done by the social partners, but is not directly, or commissioned, any sociological and/or forecasting study on the anticipation effects on employment.

There were also created **Technological Centres** (with the support of the Ministry of Economy, and PEDIP programme) with the aim of assist investigation, promote vocational training and specialist technology and also provide technical and technological assistance. The State, enterprises and associations in the respective sectors finance the activities of these centres. Another important aspect of the present Portuguese situation has to be underlined: the now available support of the European Social Fund (EU) is a major factor for this increase of professional training activities.

Very recently (March 1996) was created by the Porto Industrial Association (that congregates most forms from the North) the **Entrepreneurial Board for Education and Vocational Training-CEFOP**. It is a permanent forum of employers oriented to the design, follow-up and evaluation of education and training projects and actions.

Moreover, something else besides training is necessary to use more efficiently the worker's capabilities in the process of technological evolution. Much has been said, especially in relation to new management methods (Kaizen, JIT, etc.), about the importance of worker participation in the development and modernisation of technology. Thus, we can now see that increasing attention is being paid to training on new production technologies, at several levels or sectors, of the overall educational system (public and private institutions, secondary school, professional training, management training, Universities). However, there is still a predominant technicist perspective that marginalises the social and organisational aspects.

The observed structural mutations and technological innovation, which are foreseen to be accentuated on a medium and long term demand, will push new qualifications and new aptitudes, namely of diversification new jobs to be filled in companies. In terms of evolution, the progressive disappearance of non-qualified jobs is foreseen, with the growth of the qualified and highly qualified ones.

As some studies shown, the future need of increasing qualifications is evident in the areas of marketing, planning, management (this should be promoted to business owners with more conservative management),

programming and quality control besides also promoting the appearance of new services (for example in the development of software management of projects, protection of the environment and social equipment).

Instruments at national level

Observatory of Employment and Vocational Training

Created in 1993 under the MESS-Ministry of Employment and Social Security, this Observatory has a permanent co-ordination unit for analysis of the situation and evolution of labour market, and possible detection and anticipation of problems. Their methodology stressed the information based on five small regions and it was supported by observation and grid application. The aim is the detection of eventual local potentialities that are not being used or are sub-utilised by local authorities. Small partial studies will contribute the review the methodology, to improve the understanding of basic dynamics of economic developments under diverse conditions. The information of social issues is not the mainstream of the observation process.

This observatory functions in the context of the Ministry of Employment and Social Security and has a president designated by the Minister of Employment. The co-ordination of the observatory is guaranteed by a central nuclear basis, named "Central Unit of Co-ordination" with a tripartite composition, with representatives of the Ministries of Employment, Education and the five social partners that belong to the Committee of Social Concertation and four experts nominated by the Minister of Employment. This observatory has also the collaboration of entities and experts of sectors or regions/localities, following the methodology of key informants.

This observatory deals mainly with qualitative information about the labour market mismatches and consequently the training needs, mainly on the sectoral or regional level.

Is oriented mainly to the short and medium term, searching to have a deep diagnosis of the situation of the local and sectoral labour market, as well as the perspective of the foreseen mismatches on an one/two year basis.

According to the objectives of the observatory, the sectoral and regional/local key informants are the basis of the qualitative information. The methodology used is the following:

1. Choice of the key informants;
2. Transmission of information, either on oral basis, or in a written form, according to a guide line questionnaire;
3. Participation in meetings of data evaluation and methodology monitoring;
4. Formulation of proposals towards the better functioning of the labour market and training supply.

The results have a sectoral or regional basis, and include the analysis of the situation of the labour market and the formulation of proposals on the area of employment and training measures. In what concerns the qualitative data, the information is gathered by questionnaire and validated by the central unit of the observatory. In what concerns the quantitative data, the main surveys used are:

- The labour force survey;
- "Quadros de pessoal", gathering annual information on employment, by sectors of activity, occupations, skill, academic degree;
- Registered unemployment and job offers, monthly information gathered by job centres.

The activity of the observatory is recent, since its creation in 1993. Actually there is regular information about the situation of the market in national basis, but in what concerns the local basis the information is even more recent and not yet evaluated. There is an information report, with a quarterly periodicity in what concerns the quantitative data. Regarding the qualitative data the results are kept up to date by repeating the method on an annual basis.

Results should be implemented by translating the research information in proposals of measures in the field of labour market and training, presented to the government and to the highest responsible for the conception of employment and training policies (mainly the IEFP and the Ministry for Employment). Also the tripartite composition of the unit (Government, Social Partners and experts) should guarantee a regular (once or

twice/month) analysis of results. Nevertheless, few results are publicised, and recently the activity of this observatory is suspended for restructuration.

The search of a better adjustment on the labour market, either on employment or in training measures should have a direct effect on the implementation of measures by firms. Nevertheless, this is not being efficient once the link between these instruments with the policy making at the regional and/or sectoral level is not executable. So, between these levels and the company level there not a direct effect of the conclusions assumed at the Observatory level. There are indications, orientations that are transmitted, but they are not implemented or discussed at a micro-level.

The method could be more effective and efficient to make either an accurate diagnosis or short term prospective, depending on the quality of the information given by the experts. The existence of a single methodology also guarantees the harmonisation of the analysis.

Survey on vocational training needs

The main source of information regarding the skill shortages in the medium run is the Needs of Training Surveys conducted by the Statistical Department of the Ministry for Qualification and Employment.

Those surveys have regular periodicity, since 1983 there were made the following - 1983, 1986, 1988, 1990 and 1992, for the period 1993 - 1995. They are conducted to a sample of firms with 10 or more employees in the non-agricultural sectors of activity.

The main objective of survey is to evaluate the needs of training of the firms for the medium run (2 or 3 years, according to the surveys).

To achieve this objective, the indicators are estimated through different perspectives:

- needs of training of firm workers or of workers to recruit;
- types of training;
- occupations and skills with predictable training needs;

- predictable training needs due to the introduction of new technologies;
- sector of activity and firms size and training needs.

We would like to stress that this information does not represent exactly the needs of skilled workers, but gives a real approximation of the needs of the firms, since these cover not only continuing training, but also the needs in terms of initial training.

QUALIFOR project

UNINOVA-CRI Research Centre developed this project for Robotics at Institute for Development of New Technologies, with the support of SOCIUS (research Centre for Sociology of Organizations and Enterprise), for the IEFP-Institute for Employment and Vocational Training. Is being used as a tool for decision making of AIP-Portuguese Industrial Association in respect to evolution of qualifications and training structures in several sectors. This means that this instrument gave the basis for further analysis and decision-making in the field. One of the out-puts, is the continuous support to a national debate around the Forum Eurotraining that every year is held by AIP.

The aim of the QUALIFOR project was the study of the perception of qualification shifts and needs in the medium and long-term by the social actors, and specially, by the training centres. There are expectation to maintain the same methodology to continue and updating the information obtained.

The analysed sectors were: Automobile industry; Metal engineering sector; Agriculture, Process industry (oil refineries, paper, textile, glass); Banking and Finance sector; Forestry; Electronics and Telecommunication, Garment and Shoemaking; Fishing, Road Transport and Retail Trade sectors.

The central aim of the project was the study of perception of qualification changes and needs by the social actors, and specially, by training centres. Data analysed compared actual situation with the changing patterns of working contents, qualification needs and training adjustments. The medium

and long-term is envisaged taking into consideration that the short term was considered as until 3 years, the medium-term between 3 and 5 years, and the long-term more than 5 years.

It was based mainly on qualitative research, supported on new quantitative information collected from social actors, institutions, and from interviews.

The main aims, which can be translated into the main research steps, of the project were:

a) Characterisation of qualifications, sectors and social actors.

b) Identification of disadjustments between reality and needs.

c) Identification of evolution trends of qualifications.

d) Identification of evolution trends of training needs.

e) Pointing out proposals for recommendations for a development strategy of qualifications and vocational training.

Results of main studies were synthesised and there were a collection of available statistical information, and consequent elaboration of indicators on qualification. Were applied instruments for interviews with all institutions involved in the training process (companies, training centres, social partners, technology centres). A Technical Committee from the Eurotraining Forum co-ordinated by AIP validated this methodology.

The results of this QUALIFOR project were based on the characterisation of qualifications in quantitative and qualitative terms in different sectors based both on results of questionnaires for industrialists, union leaders and training managers, and on official literature produced by the institutions contacted.

The identification of disadjustments from perception of reality and the need or institutions of training and qualifications was one the envisaged result based on the survey to near 90 entities (firms, unions, training centres and employers associations).

An identification of evolution trends of qualifications in different productive sectors in medium and long term was held, having in consideration the new demands on skills connected to new manufacturing practices, as well as expressed needs by employers, entities of vocational training and employers and unions associations.

The identification of evolution trends of training needs in the studied sectors could be done based on results from the survey.

A set of recommendations was proposed for a development strategy of qualifications and vocational training in general, and with some examples from different sectors.

It was worked quantitative data on each entity (sectoral union or employer association, or even firm representative of each sector or sectoral training centre) like number or employees, qualification and scholarity at each qualification level, and on each sector (economical data).

But also qualitative data was taken into consideration that could provide information for an evaluation of change trends and patterns, like the main competitive or obstacle factors can be identified in each sector by each social actor, or needs of qualification due to recent technological investments, as examples.

The reliability of the predictions is high due to a proper scientific research methods used, that means the way the questionnaire were built-up, the methodology developed, and the positions of interviewed people, allows fidelity.

The results are kept up to date by repeating the use of the model, eventually by only concentrating on certain elements of it, or choosing other methods. This was not done yet because this QUALIFOR project just finished in April 1995, and the publication of the book is yet to come, edited by IEFP.

Results are implemented by translating the research information into each strategic definition (social partners, training centres and companies) on qualification and vocational training strategies. This not means that they had direct influence for the design of new training contents or new curricula. But as all the other mentioned instruments in this report, they are influencing indirectly those training contents.

After the public presentation of results (April 1995) and its publication (previewed for March 1996), it is possible to start a new study on how far the results were implemented. The discussion among social partners and firms and training centres is being held, but an assessment should be done with further support.

The firms were involved in the same way in all project stages, especially the responsible on Human Resources Management, mainly in the data collection process, and on the discussion of results. They can be involved in the assessment process.

The methodology could be improved in other directions, that could mean, a support for the management and employers level training on the main

aspects of the project, i.e., on the characterisation of qualifications, on the identification of disdjustments from perception of reality and the needs or intentions of training and qualifications, on the evolution trends of qualifications in different productive sectors in medium and long term, having in consideration the new demands on skills connected to new manufacturing practices, as well as expressed need by employers, entities of vocational training and employers and unions associations, and on the evolution trends of training in each company.

The management and employers training is still important to ensure that results would lead to adequate responses at company level should take into consideration the recommendations for a development strategy of qualifications and vocational training in each company.

The forecasting model was tested and developed using social and economic variables. This model depends on the accuracy of the theoretical model. The social actors pointed out most predictive situations, and the researchers made the correlation with the reference framework of the project.

This model can be transferred to other levels or countries where there is data available. Specifications made would support more efficiently the application of the same instruments in similar countries as Portugal, namely Greece, Hungary, Ireland, or even regions of other European countries (i.e. Mezzogiorno of Italy, Galicia, Asturias, Catalonia in Spain, Wales in UK, and so on).

"Qualifications and Labour Market" [31]

Corresponding to a demand of IEFP- Institute for Employment and Vocational Training, a team of researchers coming from several research centres worked in a study oriented to answer the next key questions at the light of labour market perspectives: what is the evolution trend of the labour force volume, of new ad old occupations, the corresponding qualifications, the existing and needed training, and the kind of jobs and location. The chosen sectors were the manufacturing industry (metal, food and beverage, electronic), banks and insurance and retail trade.

[31] I. Kovács, A. B. Moniz, M. C. Cerdeira and M. Bairrada: Qualificações e mercado de trabalho, Lisbon, IEFP, 1994, 206 pp

The expect result consisted on the identification of the alternative and possible qualification needs and according to the different levels of sector competitiveness and having considered the availability of existing and needed training capacity. Some case studies completed this report.

With this instrument was possible to know in-depth data on the labour market in a context of changing patterns on some qualifications and occupations. In this way gave information ground for the implementation of standardised procedures for the development of new vocational profiles, involving, either the IEFP, and the employers associations, and in some cases, the firms in different sectors.

"Technological and Organisational Changes in Industrial Work" [32]

In this study for CGTP (General Confederation of the Portuguese Workers) made in 1993 with the support of DG for Industry, PEDIP programme and Ministry of Industry, were analysed and evaluated several tools used to anticipate occupational and employment shifts related with technological and organisational changes in the manufacturing sector. A survey was produced on a basis of more than 110 enterprises, and a comparable analysis was possible on a sector basis, and on the basis of firm dimension.

Among the main conclusions, it can be underlined that "the existing elements of new production systems can be developed as parts of a *new rationality*. According to this rationality, the flexible organisation of work, the increasing level of qualifications and polyvalence, and an adequate vocational training, are strategic variables. Those variables are competitivity factors". Is, than, necessary a new technical, scientific and social climate to support the dissemination of such rationality. And this climate would support the promotion of innovative experiences and a new orientation of the vocational training envisaging new qualification demands.

The results of this study lead to an increase of consciousness at the managing level of CGTP about the difficulties and challenges of industrial changes, and its practical consequences on the industrial relations traditions. This result could be observed after informal discussions with union leaders, and after content analysis on the recent union interests and public debate.

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[32] I. Kovács, A. B. Moniz and Maria C. Cerdeira: Mudança Tecnológica e Organizacional do Trabalho na Indústria Portuguesa, Lisbon, CGTP/PEDIP/CESO I&D, 1992

Training needs evaluation

A study for INETI aimed the evaluation of training needs within the framework of introduction of flexible automation in the organisations, using a prospective methodology, and an anthropocentric approach, in several sectors: graphic design, automobile, shoemaking, shipbuilding, electrical appliances, wood and metal industries, technical plastics, chemistry and rock transforming. This study, "Training needs and the introduction of information technologies" [33] was developed in 1994. It was done a diagnosis of those technologies, analysed the evolution trends, the organisational methods and the occupational profiles existent in those sectors.

Afterwards it was possible to present recommendations for vocational training policies related with the introduction of information technologies at the firm's level. These recommendations had consideration for the detected disadjustments and lacking features.

Another important instrument for anticipation effects on training was similar to the previous one, but was focused on the education system. It was the study "Training needs evaluation: relevance of accumulated experience" [34] commissioned by the National Board for Education, and developed by Dinâmia/ISCTE in 1994.

It was a developed analysis on the methodologies for evaluation of training needs that could supply a dynamical coherence between offer and demand of human resources, the planning of education and training, the management of the labour market, and the management of human resources at the firm level. It is referred also that in Portugal there are only dispersed initiatives, not coordinated and with an irregular methodological quality.

As the previously mentioned instruments, these ones also contributed strongly to the implementation of standardised procedures for the development of vocational profiles in several sectors. Also can lead to changes in the content of CVT of respective sectors. The results are to be

[33] M.J. Rodrigues, J. Malaquias, J. Bilhim, J. Pires: Necessidades de formação face à introdução de tecnologias de informação na empresa, Lisbon, TDC/FUNDETEC/Dinâmia/Compta RH, 1994.

[34] M.J. Rodrigues, A.J. Almeida, F. Suleman, M. Perestrelo: O levantamento de necessidades de formação: Relevância e balanço da experiência acumulada, Lisbon, CNEducation, 1995, pp. 101 - 158.

expected in the medium term, once these instruments were tested recently, and because only now the training institutions are interested in this kind of instruments.

Community studies

Although Community studies cannot be considered as instruments or tools of direct policy making, they are regarded as important for decisions at different national institutions that deal with qualifications and training policies. These are the cases with the FORCE programme, the framework studies for CEDEFOP on comparability of qualifications, and at another level, the FAST programme studies on anticipation of industrial shifts at the regional, national and global levels.

FORCE

The following FORCE projects can be mentioned as prospective analysis: Pilot project on the Retail Trade sector (EuroNet/CIREM/CESO I&D) [35], Project on the Electric and electronic sectors (CINEL) [36], Project on the Telecommunication sector (UNINOVA/CIREM/SFS) [37], and a project on Road Transport (Deloitte&Touche/CESO I&D) [38]. In all of these projects was analysed the trends of evolution of the occupational profiles in the different sectors, and the correspondent training needs.

It was done in all of these FORCE projects an analysis on the quality and quantity of human resources, and on the supply of training activities, and the features of the training contents for each level of qualification. All these projects were held on a comparable basis, and involved the social partners.

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[35] cf. M.C. Cerdeira (coord): Training in the Retail Trade in Portugal, Berlin, CEDEFOP, 1992.

[36] cf. I. Kovács et al: Tendências de evolução da indústria electrónica na Península Ibérica: Tecnologia, gestão e qualificações, Venda Nova, CINEL/FORCE, 1993.

[37] cf. A. B. Moniz, M. Leitão: Qualificações e necessidades de formação no sector das telecomunicações em Portugal, Monte de Caparica, UNINOVA/FORCE, 1995.

[38] cf. J. Dias (coord): Road transport in Portugal: Qualifications and training, Lisbon, CESO I&D/FORCE, 1995.

CEDEFOP

Qualification comparability studies, held in the late 80's and early 90's, to build up a framework for the certification process needed for the Union Treaty of 1993. In the Portuguese case, most of those studies were not simply a revision of literature and data on qualifications and technological development in a prospective way. In the most of the cases there were no research on these fields, and this CEDEFOP projects helped to organise several studies and to build an "infrastructure" of prospective analysis and data on occupational and qualification structures with special reference to technological and organisational changes.

This infrastructure permitted the development of a methodology where variables based on formal qualification of the workforce, and related schooling levels, were taken into consideration. Once was possible to develop this methodology other instruments could be perfectioned in different contexts. Those studies were developed by CESO I&D (Lisbon) and were about the following sectors:

1. Metal industry
2. Food, beverage and tobacco industries
3. Bank, Insurance and service sector in industry
4. Shipbuilding and Repair sector

Other previous studies, didn't follow this methodology, although was analysed the textile and garment sector. But all these sectoral studies gave sufficient information on the status of human resources development, and on the obstacles and difficulties for the promotion of qualifications in a comparable mode.

One of the most significant studies was the one on the metal sector [39]. This study was developed during 1988 based on the decision made by the Community Council with respect to the correspondence of qualifications for

[39] cf. A. B. Moniz et al.: Occupational structure, training and labour relations in the metal industries in Portugal, Lisbon, CESO I&D/CEDEFOP, 1989.

vocational training amongst the Member States of the European Community. The methodology was based on the following steps:

1. Analysis of the national statistical data available about the recent evolution and characterisation of the employment in the metal sector. This characterisation was based in: academic background; age, qualification levels and occupational structure of all active population.
2. Design of a framework to analyse tasks, functions and competencies of the most important professions of the sector.
3. Design of a list of occupations more relevant in the metal sector, based in the official classification of occupations and labour bargains.
4. Companies selection in different stages of technological development and with different models of work organisation.
5. Application of the framework to the professions and selected companies.
6. Establishment of the correspondence between the vocational qualifications structure in Portugal and EC levels.
7. Statistical analysis of the vocational qualifications structure based on EC levels.

Finally, was designed an evolution trend of the quantitative and qualitative structure at levels 2 and 3, considering the trends of technological and organisational change, such as:

a) The scheme of qualifications (EC five levels and Portuguese seven levels) in which the employment was structured (first methodological step) is based on the assumption of a Tayloristic system of professional specialisation;

b) Some traditional occupations were difficult to integrate in those levels. With the organisational and technological change the problem becomes worse for the actual professional skills;

c) The application of a dimensional approach joining skills based on theoretical knowledge and the framework referred in methodological step 2, allowed to identify a great variety of skills in some occupations of the sector (methodological step 5);

d) A new arrangement was made based on the dimensional approach in which the same occupational category was framed in different levels defined by the complexity of the tasks to perform. The new structure is now nearest of the real world and far from the professional labels.

e) The forecasting elements are: in the search for changing trends of the professional skills (in association with technological and organisational contexts); in the qualification structure and in the search for training and qualification needs.

Critical conclusions were made about the applicability in diversified technological and organisational contexts of the 5 EC levels. There was also a definition of new vocational profiles in levels 2 and 3 of training qualification. Adoption of these ones for comparability of qualifications at those levels amongst EC members was one of the aimed results of the study.

This model reached its goals. It is demanding in terms of gathering direct information. Nevertheless the quality of this information is very good. This methodology of gathering direct information is crucial in social contexts as ours, which do not have not reliable statistical information about qualifications. The methodology is applicable in the study of other sectors [40]. It is particularly appropriate to countries with enough quantitative and qualitative information about qualifications.

Policies and tools at regional level

There are no regional specificities in policies regarding the development in vocational qualifications, namely under the influence of specific contributions of the ESF. The development of those policies is based on a non-coordinated basis influenced by a major or less capability of regional institutions. The institutions related with the vocational training are the centres depending on the IEFP policy, and the sectoral centres with support of the social partners (protocolar centres).

[40] It was effectively done in other sector studies: food industry, bank and insurance, shipbuilding, etc.

Some technological centres, depending on the Ministry of Industry, had some training activities on the firms demand. But they are very limited and served only the interests of some companies, with no support on anticipatory instruments. It can referred one instrument developed at the level of a Regional Government (Madeira), on the training, employment and education issues and scenarios for development policy, but were not yet reproduced in other regions.

The CFP-Centres for Vocational Training of IEFP are centres located in all regions and provide training for the regional economical tissue, either design centrally, or through the proposition of enterprises or employers associations.

The Protocolar Centres of IEFP and social partners are located in industrially pertinent regions and develop training specifically in sectors that are strategically important in that region (p.e. stone industry in Alentejo, cork in Porto, textile and garment in Minho, electronics in Lisbon and Porto, metal industry is spread).

The training activities are not decided on the basis of anticipatory studies, but under the pressure of local interests, mainly the industrialists. The Regional Consultive Committees of IEFP are represented by members of the respective CCR (Min. Planning) and regional union and entrepreneurs associations, and the IEFP's regional delegate.

Instruments at regional level

"Re-structuring policies" [41]

The continued crisis in wool sector compelled the government to implement social and economic measures to help the sector re-organisation and reconverting in the beginning of the nineties, mainly in Covilhã region. After the re-structuring process conclusion, IEFP found useful to evaluate the results. And at the same time, needed to clarify the methodological aspects of re-structuring policies in relation with employment and regional

[41] M.J. Rodrigues and A. O. Neves: Políticas de reestruturação, Lisbon, IEFP, 1994.

development questions. With this main purpose DINAMIA (Research Centre on Socio-economic Change-ISCTE) has concluded a study about Re-structuring, Employment and Regional Development Policies which could enable decision makers to better adequate policy measures to similar cases in other regions or sectors. There were used both quantitative and qualitative data collected form statistical sources but also from field work close to the main institutional, social and economic actors.

It was developed a methodology of diagnosis to support the intervention of the public authorities in regional employment systems and specifying this methodology in regions with sectoral crisis and sectoral reorganisation. This methodology analyses the companies renewing and modernisation processes, the local employment system evolution, the employment vocational training system, the role played by the agents and the monitoring policies. The steps consists on:

- Identification of existing research and improvement the knowledge about the region;
- Organisation of teams work;
- Interviews to some representative agents in order to be aware of the social relations system;
- Definition of the key questions;
- Progress report and discussion;
- Final report.

The results obtained would permit an effectiveness of the re-structuring policies and employment and vocational training policies, as well the knowledge of the impact of new initiatives oriented to new jobs creation.

The study is an ex-post evaluation of the re-structuring policies oriented to a growing adequacy of policies measures to this kind of problems. This kind of results can provide changes to the CVT in the regions or sectors affected by changes on industrial strategies.

Nevertheless, the main result is the knowledge provided to the policy makers and to decision makers about the real mechanisms and the estimated effects of measures in order to avoid negative effects and promote the positive ones. The instruments contributed to evaluate the complexity of re-structuring

processes and to improve the procedures of the decision makers and implementers.

Skill shortages in Setúbal region and its impact at the training level

During the analysis of the skill shortages in Setúbal region was necessary to analyse not only the employment dimension, but also specially its impact at the training level and an evaluation of the training needs. As referred before, this study was commanded by DG V in 1989 to UNINOVA and was integrated in an international framework of European regional analysis of skill shortages and employment [42]. Besides this study, another one, more specifically oriented for vocational training was held in 1993 on the training need in that same region [43] commissioned by IEFP.

In this study was characterised the employment and training needs, identified and evaluated the needs in human resources, the articulation between the needs and potentialities of training offer in the region (based on information of 1990-93), and analysed the conditionalisms and actor strategies. The methodologies used were the production of regional scenarios of employment, and the elaboration of a strategic training plan. The main results were a re-analysis of available statistical data on the evolution of employment, demographic evolution and migrational movement.

FAST/MONITOR

The ATA 1 Project - Anthropocentric Technologies Assessment was a project developed by the FAST Programme and there was a specific study on Portugal [44] which propose was the presentation of recommendations to the national authorities, namely on the vocational training side, after

[42] A.B. Moniz, M.C.Cerdeira, J. Lavadinho: Skill shortages in Setúbal region, Monte de Caparica, UNINOVA, 1989.
[43] A.O. Neves et al: Levantamento de necessidades de formaçnao profissional na área da Península de Setúbal, Lisbon, CIDEC/IEFP, 1993.
[44] I. Kovács, A.B. Moniz, A. Mateus:

studying the training needs for the expected changes in the manufacturing sector. Was analysed the metal and the textile sectors, and also compared with other similar member States [45]. Were used statistical data available on human resources and training available in this field, and was re-analysed data from a sociological survey about technological and organizational change in the Portuguese industry. The data was used to test some hypothesis, and further interviews with employers, unionists, and experts on technology and social forecasting.

Beside this project, the sequence was another one in a major framework that involved American and Japanese research teams, and should anticipate the expected shifts in the European industry. This was the called FINE Project - The Future of Industry in Europe, with forecast for the horizon of 2015 [46]. In this project special attention was held to the training needs for the expected shifts in industry, either through inner changing needs, or through imposed changes by the EU or other economical frameworks. One of the examples studied was the automobile industry, and the impact and strategies of vocational training in this sector, at a regional level.

The evaluation of OID-Setúbal on training and qualifications

Among the general objectives of the operation already referred, none was about qualifications and training, but only on employment. Nevertheless, it was evaluated in terms of available measures and the sectoral objectives (expectable and executed). The evaluation procedure on the human resources effects was based on the construction of matrixes to evaluate the direct and indirect influence of measures, applying a MICMAC information analysis.

One of the main evaluation conclusions was related to the fact that was supposed to expect a positive effect of the "vocational training to the manufacturing industry", but the verified one has a major influence of the "vocational training for the tourism sector".

[45] S. O'Sióchru:

[46] A.B. Moniz (coord): : The Spatial Influence ...op. cit., 1993.

Forecasting implications for vocational training and S&T development in Madeira region

Supported by the Regional Secretary of Education, and organised by CISEP (ISEG-UTL) in 1995, the strategic study of the education/training, science and technology and employment systems in the Madeira region [47] was developed to know which are the conditions that make possible an inflexion in the national and regional policies of education, science and qualified employment, and subsequent challenges for small-sized islander regions. The fact that Madeira was mostly supported by touristic specialisation of its economical activities, made several structural difficulties for an integrated development.

The main problem was to find alternatives to foster better living conditions and perspectives on long term for the Madeira population, in a context were the accessibility to information and services is being easier. The methodology was based on three phases:

1. Elaboration of three framework studies on education and training, science and technology and occupation structure and qualified employment;
2. Analysis of mutual contributions and influences of these sectors in terms of investment and regional modernisation, with public debate;
3. Presentation of recommendations and comments towards an interaction for an operational integrative strategy.

Statistical analysis, qualitative interviews and surveys to institutions of vocational training and firms, were made about the evolution of qualification needs and the vocational training needs. A final report was published and interim and final discussions took place in the region with social actors and the research team.

[47] J.M. Caraça (coord.): Estudo estratégico dos sistemas de Educação/Formação, de Ciência e Tecnologia e de Emprego da Região Autonoma da Madeira, Lisbon, CISEP, 1995.

Translation- and coordination mechanisms and institutions

The role of initial vocational education and training

In this point we will describe the education and the vocational training before entering in active life/labour market. We will give a short introduction in the educational system, including the initial vocational training and its on evolution. In order to reduce complexity we left out a few "special ways of school education" (special education, adults education - long distance education).

The system of education and training in Portugal has been object of profound transformations in the recent years, although, it is still premature to evaluate the real and actual amplitude of such changes. Whether they be, those that can be verified by means of recent reforms in official education (an increase of compulsory education from 6 to 9 years and the reintroduction of technical professional education, extinct since 1974 when the unification of secondary education occurred) or those connected with the training programmes by public and private entities.

A new law published in 1986 established the actual Portuguese education system. The main transformations were: the increase of compulsory school as we stated before; also the re-structure of professional education (vocational training) that, since then, is considered a special way of the educational system and not a parallel way of education has it was considered before; the introduction of more possibilities to choose technical and technological *curricula* subjects at the secondary level.

Before this new education law, the technical professional education inside the school system (industrial and commerce schools at the secondary level) was extinct. This process produced a "(...) education model based on a polyvalent long lasting education, (separated) distinct and far from the technical professional education and oriented in order to carry out this kind of education outside the regular education school system or only at

university" [48]. During the 80's the situation began to change and the technical professional education was reintroduced in the regular education system due to the following reasons: less vacancies in university, economic crises and youth unemployment; financial support for training courses of the European Social Fund; confrontation and adoption of European vocational training systems.

The creation of adequate vocational training structures and courses was only attempted recently. Started in 1979 with the implementation of the Polytechnic Superior Education (see A.3.) and in 1983 a law, before the final education reform, was put into effect allowing the return to a technical-vocational and vocational educational, creating technical-vocational courses (with a duration of 3 years) and vocational courses (with the duration of 1 year) at a secondary level. This law had as objective the training of young people with less than 25 years of age and who hold the 9-year of schooling. Actually the situation is stabilised and the technical professional education is developed both inside and outside of the school system (see following text).

Table 1. Portuguese Educational System

The Portuguese initial education system consists of a normal way of school education, characterised for being a regular and systematic education and a special way of school education that is characterised for being systematic, but non-regular education.

Regular School Education

The school education includes: primary, secondary and university education.

[48] cf. Neves, A.O., Emprego e Formação no Comércio, Lisbon, CECOA, 1994.

Primary Education

Primary education consists on 3 cycles of global and multidisciplinary teaching. Actually is the compulsory education and it lasts for 9 years (from 6 years old to 14).

Secondary Education

Secondary education lasts for 3 years and is destined to young people who are between 15 and 17 years old. The secondary education has four alternatives:

- General secondary courses, mainly oriented to follow up the studies at university, these courses are organised in 4 different areas: social-economic, natural-scientific, arts and humanistic;
- Technological secondary courses, mainly oriented to enter/begin active life, these courses are organised in 11 different areas: new technologies, construction and public works, electronics, mechanics, chemistry, arts and workmanship, trade and commerce, administration/ management, communication and cultural dynamization. Besides the school diploma, these courses also give a level III professional qualification (these courses substituted the technical-vocational education that began in 1983);
- Professional Schools and the Apprenticeship System (see B.1. and B.2.)

After finishing the secondary education students may enter in the university trough a classification system that consists of national written tests and secondary grades.

University Education

University education consists of university and polytechnic courses in public and private institutions. University courses last for 4 to 6 years and it is possible to follow up for higher graduation degrees. Polytechnic courses last for 3 or 4 years and give a bachelor degree.

The Polytechnic Education was implemented in 1979 with the objective of broadening technical training at a more advanced level and of regionalisation educational structures. However, this system has still even today not been able to attract young people who in the majority of cases continue to prefer attending university degree courses which are more prestigious despite the fact that they are out of synch in relation to the training needs required by the present job market.

Special Way of School Education

Professional Schools and the Apprenticeship System is the zone where the education system (Ministry of Education) and the training system (Ministry of Qualification and Employment) act together. However, sometimes it is difficult to separate between continuing vocational training and initial vocational training because the same institution develops both training systems.

Considering the actual situation of the all training system and its recent evolution it is possible to say as Ferrão and Neves states the "existence of training structures more than a training system".

Professional Schools

In 1983 the final educational reform was put into effect allowing the return to a technical-professional and professional education, creating technical-professional courses (with a duration of 3 years) and professional courses (with a duration of one year). This reform has as its objective the training of young people with less than 25 years of age and who hold the ninth year of schooling.

These courses include a component of general training, administered in the official educational establishments and a component of specific training administered in centres associated with the industries. Nevertheless. These courses continue to respond poorly to the aspirations of young people who in fact generally abandon their schooling before the ninth year. The remaining students prefer to follow a university degree. Just as in the case of the polytechnic courses, these courses are also not highly valued, nor do they enjoy much prestige for school-age youth.

Professional Schools were created in 1989 and they have as principal aim to prepare young people to the active life in alternative ways to the traditional/regular education system.

These schools are connected to local, regional and sectoral needs. They are created on protocols and framework programmes basis, signed by some institutions: local power, State/public administration, non-profit associations, employers associations, unions and private companies.

The access to professional schools is possible to those who accomplished the 6 or the 9-year of schooling in the regular system. After attending a 3 years course students, get both a professional certificate of level II or III of the EU, that allow to enter active life and a school diploma that allow to go to university. The teaching system is very flexible and diverse, organised in a modular system, the courses last mainly for 3 years, including technical and scientific education, general culture education, technological or artistic practice. These schools started with 2000 students in 1989/90 in 1991/92 they had 11360 students in more than 200 schools.

Apprenticeship System

The Apprenticeship System is a vocational training programme with the goal of assuring the transition from the educational system to the work force in a more efficient way [49]. This regime, defined as a system of alternative (training centre/company) professional training is meant for young people between the ages of 14 and 24 years and who hold the sixth or the ninth year of schooling. It has three components: general training, technological and simulated training and practical training, the first being administered in educational establishments and the latter two in the companies themselves, thus attempting to privilege company apprentice training centres [50]. This system was implemented due to the necessity of putting together vocational training and regular education.

These courses have an equivalence to the 9 or the 12 years of schooling and also a professional certificate diploma in several areas: agriculture and fishing, 17 sectors and sub-sector of the manufacturing industries and 7 sectors and sub-sector of commerce and services and finally Quality.

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[49] cf. Mota, A.; Grilo, E.M. e Soares, M.C.: Descrição do sistema de formação profissional - Portugal (A Description of the Professional Training System - Portugal), Berlin, CEDEFOP, 1985, 143 pp

[50] cf. "A formação profissional em grandes números" (Professional Training in Large Numbers), Emprego e Formação, nº 1, Lisboa, IEFP, 1987, pp.88

A three partite steering committee (ministries, unions and companies associations) is responsible for the development of this programme. The implementation and execution is made by the IEFP - Institute for Employment and Vocational Training, trough the net of public and/or protocol training centres (see 4.2.) in connection with the Education Ministry.

The apprenticeship programme started in 1985/86 with 1440 apprentices, in 1991 attended the programme more than 13000 apprentices and in 1994 more than 17000 apprentices and almost 6000 companies.

Recurring (appellant) Education

The system described so far is destined to young people bellow 25 years old, however there is a possibility to those more aged called "Recurring or Appellant Education". Usually the classes are during the night and the diplomas are the same of the regular education system.

Other (Initial Vocational) Training Forms

There is other initial vocational training courses organised out of the school system related directly to the labour market. They don't allow continuing studies to university and they don't give a school diploma, only a professional one.

This kind of vocational training like wise the apprenticeship system is co-ordinated and executed in training centres of the Institute (IEFP) or in protocol training centres.

Initial Qualification

The Initial Qualification programme last, usually, for not less than one year followed by a period of practice in a company lasting for 3 to 6 months. This programme is destined to young people and adults aged more than 15 years. These courses include a social-cultural education, scientific and technological education and practice training. After attending this programme trainees get a professional certificate of level II or III of the EU. In 1994 attended the Initial Qualification courses 2700 trainees.

The role of continuing vocational training

In Portugal CVT is provided by a diversity of actors. These actors are described in the following paragraphs.

The main actor in the CVT system is the IEFP - Employment and Vocational Training Institute who administrates an important net of public and protocol training centres. These institutions are the main instrument to develop the vocational training policy out of the school system:

- The public training centres (25) are a part of the employment service system and they develop courses, mainly in the following sectors: civil construction, electricity and electronics, metal industry, trade and commerce and services on a regional basis;
- The protocol training centres (27) were created by the State/public administration trough the IEFP and by companies associations or unions of the following economical activities: civil construction, textile industry, metal industry, trade and commerce, electronic industry, pottery, shoes industry, food and beverages, automobile repairing, wood industry, cork industry, water industry, agriculture, quality, justice and penal system.

The courses ministered here have as one of their main goals the promotion of qualifications among young people, contributing towards the consolidation of the alternative training system already mentioned. Both kind of training centres are developing initial and continuing vocational training courses, including high/superior and medium staff training and trainers training.

During 1994 attended the protocol training centres 11061 trainees in initial education courses, 24064 trainees in CVT courses and 5612 trainees in special groups.

These training centres also develop an important activity in training long term unemployed. During 1994, in public training centres only, about 4500

trainees attended courses. The second group of providers of CVT is the sectoral institutions (see 4.5.).

The third group actor group in CVT are private institutions. There are no available data about the market share of this kind of suppliers. In the services providers market, there are a lot of companies supplying vocational training courses, some of them with good curricula. The main courses are destined to high/superior and medium staff, industrial technicians and administrative workers.

In general, all these companies have standardised training courses, at the request of clients they can develop courses responding to companies particular training needs. However, due to the small dimension of Portuguese industrial enterprises they aren't able to implement in house training courses, so medium and small enterprises have to attend the mentioned standardised courses.

Actually CVT become a very important instrument to deal with economic, technological and organisational change. CVT is nowadays seen as the better way of getting new qualifications for companies and for employees (mainly for those who started to work without proper qualifications) in order to be able to master with new tasks, production ways, clients, etc.

The fourth group are the suppliers of machine systems and/or new materials. Usually the provider sets up training course curricula, i.e., they are the ones that transmit there on specific know-how to the purchaser, which in turn transmits the knowledge to the machine operators. However, this kind of training is non-formal, sometimes it isn't enough for the purchaser demand and it hasn't the quality needed. There are no available data about this kind of suppliers.

The role of vocational guidance

In Portugal vocational guidance or career guidance can be given by the school system, by the employment services and by private agencies and services experts on children and adults orientation.

Nowadays in the employment services guidance, counsellors are trying to get a compromise between what a person wants (personal life project) and what the labour market is offering.

A few ways are used to do vocational guidance; nevertheless they are geared mainly to young persons who have not yet decided about their future professional activity:

- General TV campaign to enhance the necessity of attending school for 9 years; information material to be used in schools was produced by the Ministry of Education;
- Job fairs - in a few regions local institutions organise this kind of fairs where all kinds of training institutions, schools, economic sectors, etc. are present to promote their products. Sometimes pupils tours are arranged in order to give the chance of everyone be present;
- Publication of magazines by private companies about future career, training courses, etc.;
- Information material (monographs, videos, pamphlets) is produced by the employment services (IEFP) in order to help to choose jobs, career, training courses, etc. at a national level;
- In a non-regular basis publicity campaigns are made by private institutions in order to sell their courses (e.g. Civil Construction Training Centre);
- Individual and/or group support orientation is made in the employment services (IEFP). These services are helping people in conducting the process of choosing a career, not only a job, i.e., if there is a necessity of training before entering a new job, or if is better to change to another profession.

This last one is not geared only for the youngest but also to those that become unemployed or are in danger to become unemployed. At the same time vocational guidance counsellors are always trying to meet the personal wishes and the labour market demands.

An Observatory of entries in working life (OEVA) was created in 1986, having representatives of the Ministry of Education and of the Ministry of Employment and Social Security. Although is not an anticipatory instrument, gives information on the demand side of employment, and the balance on the supply side, referring only data of graduated young people and labour market. The main objectives of the Observatory are:

- to obtain a deep and actualised information of the entrance of young people in working life, namely in what concerns the

relation between education, training, the jobs obtained and the professional career;

- to study the impacts of educational reforms;
- to develop a program of studies and investigation that contribute to the understanding of the movements between education and work;
- to contribute to the information system and vocational guidance for young people.

The methodology used is the statistical survey for ex-students or ex-trainees. The surveys are applied 9 months after the completion of the level of schooling or the training course, and are sent by mail. The collected information gives the possibility to know:

- the opinion of ex-students about the contents of curricula and functioning of schools and training courses;
- the ways of access to the first job and the match with training;
- the following of studies;
- labour conditions.

The studies developed having the basis of this information contribute to:

- to analyse the correspondence between the given and offered qualifications, curricula;
- to develop the information for vocational guidance;
- to evaluate the qualitative effects of the educational reforms and support the activities of formulation of educational, training and employment measures.

The role of employment agencies (services organisations)

At present time, exists in Portugal an active market of human resources consultant companies not only working in vocational training programmes,

but also with recruiting, selecting and placing workers. None uses forecasting analysis. These companies operate their mediation activities only on information of actual job vacancies provided by firms they work with.

Besides the competencies in the vocational training field, the Employment and Vocational Training Institute (IEFP) is the State institution responsible for the execution of employment and policies measures and for mediating labour demand and supply, as referred above. During 1994 employment services offices (78) received 35650 job offers from companies and placed almost 19000 unemployed. The difference is justified by the mismatch of qualifications and low salaries.

When IEFP organisations (centres for vocational training, protocolar centres and employment centres) are concentrated, with the unemployed, the workers threatened by unemployment, and youngsters looking or a first job (and provident IVT courses), the other private employment agencies are mostly targeting the middle and upper level employees (technicians, engineers, managers).

The employment Centres often have a depth and detailed knowledge about how the employment market works, and about the real social situation of companies. The planning of training actions can be structured taking into account the unemployment pattern, the social groups and the companies needs. They can also extract additional information to the candidates' selection task by the manipulation of databases about training courses. They have also a direct relationship with Employment Clubs and with Active Life Insertion Units.

Based on the monthly statistical knowledge or in regular contacts about the provisional outlets of training courses, the Employment Centres are fulfilling the market needs. But as referred above, no anticipating instruments are applied to forecast trends on the labour market (employment and qualifications).

The role of sectoral institutions

The sectors of industry have a strong influence in the vocational training plans at all levels. However industry sector have its on net of institutions that

carry out the human resources policy established in the Strategic Programme for the Development of Portuguese Industry II (PEDIP II). Programme 5 is oriented to support training plans of the industrial private companies that have an integrated plan of investments (production, marketing, environment, training, etc.).

Public Administration

Industrial training policies are performed trough all the institution described before but also by the Managing and Engineering Vocational Training Centre of the Engineering and Technological Industry National Institute (CEGEF-INETI):

- Management of PEDIP II training measures (mainly CVT courses);
- Development of other kind of training programmes like training (4 months) and integration (20 months) in active life for recently university graduated students in the following areas, engineering, economics, companies' management, accounts and other relevant areas for industry. Since 1985 more than 1500 companies and 2000 trainees participated in this programme;
- Technological Schools are destined to offer training courses for technicians in areas that the school system doesn't produce suitable qualifications. It is considered a "short university education". In 1994 there were less than 10 of this kind of schools.
- INFORCE created by the INETI together with the Support Institute for the Small and Medium Industrial Enterprises (IAPMEI) is destined to promote training courses in industrial management and technologies.

Industrial Private Entities

Technological Centres were created (with the support of the Ministry of Industry and PEDIP programme) with the aim of assist investigation, promote vocational training and specialist technology and also to provide

technical and technological assistance. The State, enterprises and associations in the respective sectors finance the activities of these centres.

Training in private firms is mainly done on the job as it is the case of big companies and training centres exists only in some sectors cases. The most important private training centres developing courses to industrial firms are Portuguese Industrial Association and Porto Industrial Association.

Actually it is impossible to quantify and evaluate the potential of companies that are developing in house training. The access to the European Social Fund as a way to promote vocational training in firms has to be underlined and since 1988 it became the major fact of the increasing of professional training activities in Portugal.

The Second Community Support Framework

The implementation of Second Community Support Framework brought the necessity of articulation between the (national) institutions in the field of employment and training, towards the achievement of evaluation objectives that were reinforced in the context of the implementation of Structural Funds.

The DG of Regional Development (DGRD) is responsible for the general management of the Structural Funds gather the information for the fulfilment of a package of financial (compromises, real expenses, execution degree) and physical indicators (number of persons, hours of training, number of companies) that are involved in the Second Aid Community Framework. In the field of employment and training:

- DG of Employment and Vocational Training (DGEFP) looks for the adjusted execution of the measures to the strategic and specific objectives of the employment and training policy (impact evaluation);
- Statistical Department of the Employment and Qualifications Ministry (DEMQE) produces inquiries about training needs and how the measures are being executed (*ex-ante* and *ex-post* evaluation). Some of the inquiries are destined to know better the problems and needs of marginal groups. Participates in the co-ordination of the system.

- Employment and Training Observatory (OEF) has a position to predict and to prevent the employment and training problems. It also carries out an evaluation of how measures are being executed and implemented. The studies and analysis that the Observatory produces is focused on local, sector and qualitative aspects.
- The Framework Programme Managers carry out the efficiency evaluation and the monitoring.
- The Department of the European Social Funds (DAFSE) carry out the control of financial and account aspects, and the Employment and Vocational Training Institute (IEFP) the financial and pedagogic aspects, both of second level in relation to the other institutions.
- The University Research Centres and Others (URC) participate in projects of evaluation of the entities above mentioned, after being qualified for the task.

The relation between these units can be presented in the following table:

Competencies in the fields of Monitoring and Evaluation

	Coordination	*Ex-ante*	Monitoring and execution	Efficiency	*Ex-post*	Impact
DGRD	**X**		**X**	**X**	**X**	
DGEPT	**X**	**X**		**X**	**X**	
DEMQE	**X**	**X**			**X**	**X**
OEF		**X**				**X**
MANAGERS			**X**	**X**		
DAFSE			**X (*)**	**X**		
EPTI			**X (*)**	**X**		
URC		**X**		**X**	**X**	**X**

(*) Second level

The role of initial vocational education and training

As an attempt to complement the measures just described, in 1984 the Apprenticeship Law was published with the goal of assuring the transition from the educational system to the work force in a more efficient way [51].

This regime, defined as a system of alternative professional training is meant for young people between the ages of 14 and 24 years, and has three components: general training, technological and simulated training and practical training, the first being administered in educational establishments and the latter two in the companies themselves, thus attempting to privilege company apprentice training centres [52].

Other mechanisms and institutions

Only in 1979 was the Polytechnic Superior Education implemented with the objective of broadening technical training at a more advanced level and of regionalization the educational structures.

However, this system has still even today not been able to attract young people who in the majority of cases continue to prefer attending university degree courses which are more prestigious despite the fact that they are out of synch in relation to the training needs required by the present job market.

[51] cf. Mota, A.; Grilo, E.M. e Soares, M.C.: Descrição do sistema de formação profissional - Portugal (A Description of the Professional Training System - Portugal), Berlin, CEDEFOP, 1985, 143 pp.

[52] cf. "A formação profissional em grandes números" (Professional Training in Large Numbers), Emprego e Formação, nº 1, Lisbon, IEFP, 1987, pp. 88-8.

The interaction between macro- and micro level with respect to anticipation of the effects of industrial change on human resources

The industrial tissue offers in Portugal interesting patterns when compared with other EU countries. The main characteristic is the diversity of sectors, and in some cases, the strong tradition of industrialisation. Although Portugal was until early 70's an economy based on agricultural products, developed competencies on agro-industry, and for the fertilisers, oils and other components, developed chemical specialisations that derivates also on the petrol-chemical (also with the oil prospecting in Africa during the 60's) and the pharmaceutical industry.

Textile and garment were sectors that based their competencies of agreements with England since the XVIII century, but always funded on cheap labour force. On the other side, shipbuilding although was one of the oldest trades, the metal operation is more recent, using highly qualified labour force, but went into crisis, as happened with most shipyards specialised in the production of large sized oil tankers. The metal activities have been developed either on metal product, or in moulds for plastic injection (this tradition was based on the experience of moulding for glass making in Leiria region). In both cases, several companies are developing their sub-contracting activities with advanced contacts using state-of-the-art technologies and organisational innovative procedures.

It was on this basis that the Porter report on the Portuguese competitive advantages referred the importance of the alliance between the traditional sectors, and the most advanced managing experiences, and the need for inter-relation among sub-sectors building up the so-called "clusters" of competitivity.

One of the main problems can lay on the (also) traditional un-coordination of entities, public administration, companies, training centres, research units, although there are available instruments to forecast effects of industrial change on employment and training. Some of these traditional sectors are competitive when, and if, they are supported on qualified labour force, and

on flexible organisation patterns with decentralised decision-making processes. Those are the major conclusion from the different studies on this issue.

In Portugal, the influence of the industrial change is produced in a top-down way; with (in some cases) an *ex post* analysis process to formulated training needs. This means that the industrial change impact is produced (normally, unexpectedly), and afterwards the responsible at the company level tries to know which training needs should be formulated in order those effects could be the smoother possible.

The training needs at the company level is not based on anticipatory studies, neither is done any long term forecast on qualification, or even employment level. In some cases there took place some influence from specific activities. It can be mentioned the case of two different FORCE projects on electronics and on telecommunications that influenced directly the design of vocational training courses for specific occupations on the basis of forecasting analysis [53].

These influences normally take years to become effective. Taking this same example, although the studies were done since 1992, just now (in 1996) some results can come into practice.

Another example comes from the bottom up approach of anticipation given by activities directed by regional networks: one could mention the case of automobile industry in Setúbal region, or the entrepreneurial activity in Madeira.

Referring the first one, the location of Ford-VW factory in Setúbal was decided on the basis of regional location, human resources infrastructure, available financial instruments, political decision, and communication system [54]. The fact that, by political reasons, was taken the decision to invest in Setúbal region, Ford and VW need to know which training needs should be performed to fulfil the organisational needs, in terms of JIT strategy and work group concept, using new technologies (FMS).

Some of the referred studies were completed having in consideration these needs that induced a more generalised policy towards employment and vocational training at a regional level. The above-mentioned OID

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[53] cf. M.J. Rodrigues et al: Necessidades de formação..., op. cit, 1994.; I. Kovács et al: Tendências de evolução ..., op. cit., 1993; and A. B. Moniz, M. Leitão: Qualificações ..., op. cit, 1995.
[54] A. B. Moniz: A evolução da indústria automóvel em Portugal, Lisbon, SOCIUS, 1995.

programme was a framework that made possible the development of these instruments, and made available other to test different methodologies.

The other example of Madeira region is just producing some lateral effects that could induce also new investment strategies in the agro-industry activities, the marine products development, telecommunications, or even new manufacturing products with regional relevance. Beside this trend, in Azores region, the same type of instrument can be applied, and in Peniche region, a study on the fisheries sector is about to use the same methodology, and at medium term, to support investment in different areas as the traditional ones, to diversify the economic activities in order to support the social development and the qualified employment.

Evaluation, plans and wishes regarding anticipation policies, tools and instruments

After some interviews with the Ministries of Economy and Qualification and Employment and the IEFP on the new policies, it is possible to know better the policies that are undertaken towards the development of employment and training in Portugal.

A Commission for the Innovation of Training was created recently, and can be developed into an institute that can start their activities, issued from competences of IEFP. This commission will endeavour a framework to establish the occupational profiles repertoire, which could be developed by the referred institute.

At the same time, was created an Observatory on sciences and technologies, with the support of Ministry of Sciences and Technology, that will re-organize all the statistics on S&T that were not developed since early 90's. Nevertheless, in order to permit the development of several instruments to anticipate the effects of industrial change on employment, and at least, on vocational training, this observatory could provide measures of articulation with the Ministry of Economy (for application of innovation measures in the industrial fabric), the Ministry of Planning (to articulate it with the policies of regional development), and the Ministry of Qualification and Employment (to re-define the strategy to development of human resources in a perspective coherent framework of scientific and technological change.

Other instruments can be developed having in consideration the experience felt by several institutions and research centres. In coherence with the Governmental proposals, articulation among the different administrative centres is a must for the development of adequate measures. In this sense the observatories are permanent instruments that need this articulation and are helpful when they introduce anticipatory proposes for the development of policies related to employment and vocational training. Some of the most needed observatories are the following ones:

- Observatory on restructuring sectors, with the support of Ministry of Economy and Ministry of Qualifications and Employment; this instrument

can follow-up the measures that are planned for the support to restructuring sectors under the PEDIP II programme, but can include the elaboration of scenarios with economic and social variables, and not only economical ones;

- Observatory of Qualification and Training Needs with the support of Ministry of Qualifications and Employment, Ministry of Economy and Ministry of Education; this instrument can also follow-up the emerging activities of the Commission on Innovation of Training of MQE, but can develop the methodology including economical variables, and not only social ones, articulating problematic and theoretical frameworks also from the perspectives of the industrial development and education
- Observatory of Labour Market developed by the Ministry of Qualifications and Employment and Ministry of Economy; this instrument should complement the available information on the characteristics and trends of evolution of labour market; should in first place be an anticipating to prevent negative aspects of shifts of technological nature, or organisational one that very rapidly provide, for example, a safe information on transitions from one occupation to another, demographic trends, or even new demands in specific sub-sectors due to strong investments occurred.

All of these observatories should add, beside the administration technicians, the social partners representatives, experts, industrialists pointed out by the regional and/or sectoral associations, and publish regularly the outputs and results of the studies achieved in terms of anticipatory methodologies.

Dissemination of information enables the possibility of reproduction of methodology in different sectors or regions, and contribute to an overall result the permits the prosecution of a global policy for employment and vocational training. The dialogue to find outcomes should be based not only on the governmental framework, but should use much more often the “civil society”, i.e., the social partners, the scientists, the industrial responsible.

The financial support to innovative experiences, and the interchange with other experiences at the EU should be developed (namely the Danish ISQA-Industrial Sociological Qualification Analysis, and ADAM-Annual Danish Aggregated Model, the British IiP-Investors in People initiative, or the Spanish ORO-Regional Occupational Observatory methodology, are considered as very good examples to be tested in Portugal).

In the same way some of the referred Portuguese instruments can be used as tested models and implemented elsewhere, namely in a more systematic way in Portugal (for example, the QUALIFOR model, the Observatory of Re-structuring regions, the Scenario for a Strategy of Human Resources development method).

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