The Implication of B20 Policy on Environment

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Abstract:

This paper investigates the impact of B20 policy, with the aims to reduce fossil oil import and increase production of biofuel, on environment impact. General Trade Analysis Project on Energy and Environment (GTAP E) model is using to analyze its impact. the result shows that reduction of 20 percent on import oil gives positive impact on reduction of carbon dioxode emission. While paddy rice, forestry, vegan fruit and agriculture gives negative impact on commodity market price, and natural resources gives positive impacts.

Keyword: import fossil oil, environment, GTAP-E

I. INTRODUCTION

Fossil fuel and agricultural commodity prices have always been connected on the production side, as crude oil contribute a large part of agricultural input costs. However, the ethanol mandate, introduced to promote energy security and to adress environmental concerns, now connects these prices on the consumption side as well. In particular, it created a direct link between fossil fuels and agricultural commodities used in renewable fuel production with potential spillover effects from the crude oil market to biofuel feedstock markets and possibly other agricultural commodity prices (Serletis and Xu, 2018). Other side mentioned that biofuel policies are considered as one of the potential drivers for both high prices and increased price variability in agricultural markets (Enciso, et al., 2016).

Nowdays, Biofuel development policies have been driven by concern over energy security, the need for convenient alternatives to fossil fuel, and a desire to reduce greenhouse gas emission. In addition, biofuels also mitigate climate change, as they are considered carbon neutral, generate income by export, and create jobs. Palm oil is one of the most productive oil seeds in the world, and this has been viewed as an opportunity to produce more biodiesel to meet the domestic and international demand. Due to the market potential of biofuel products for replacing fossil oil and export, several domestic and foreign companies have invested in biofuel industry (Senelwa, et all., 2012; Jupesta, 2012; de Carvalho, et all., 2015). Moreover, there is a wide array of policy measures to promote biofuels, the common mechanism to promote and use of biofuels is blending or use mandates. Blending or use mandates operate in a different way as they require biofuels to represent a certain minimum quantity or share in the transport fuel market, they can potentially create an obligation to consume or produce (Enciso, et al., 2016).

In early 2007, the national biofuels team, or Timnas BBN, announced that 60 agreements had been signed by investors for biofuel projects worth about USD 12,4 billion. These promising investment prospects were supported by government policy measures and a host of economic incentives, among these the simplification of licensing procedures, tax breaks, government subsidies, land allocation for biofuel feedstock production, assistance with land acquisition, and mandatory usage of biofuels by certain sectors. It was also expected that the low cost of labor, increasing productivity of oil palm and relative availability of land for plantations would further encourage the development of the biofuel sector. While biofuel demand is driven largely by government blending mandates, there is also potential for exporting biofuel to key markets in Europe and North America (Andriani, et al., 2011).

With an area of 2 million square kilometers and a population of 237 million in 2007. Indonesia is the fourth most populous nation in the world. This country is facing serious energy problems, with a change in status from net oil exporter to net importer in 2007, highly subsidized fossil fuel prices, depleting oil resources, and strong dependency on fossil oil for gross domestic production. Action needs to be taken to tackle these issues. In 2006, the government enacted the so-called energy mix policy to reduce dependency on fossil oil, by using a mixture of energy sources, utilizing local resources, renewable energy, and biofuels. The target is to reduce the share of fossil fuels in providing energy from 60% in 2006 to 20% by the year 2025 (Jupesta, 2012).

In 2004, the Brazilian government launched the National Biodiesel Program (PNPB) to increase energy security through the sustainable production of biodiesel from oilseeds. The aims focused on social inclusion and regional development with an emphasis on job and income generation and the sustainable use of various oilseeds. The program also hoped to reduce GHG emissions. Financial incentives were provided to foster the production of various crops. The mixing of 2% biodiesel into the fossil diesel began in 2008 and it was raised to 5% in 2010 and 7.6% at present.

There are plans to increase the mix to 20% in 2020. Thus, palm oil is an attractive crop due to high oil yields that can be achieved, its potential to adapt to climate change, and the opportunities it presents to promote social inclusion and sustainable development (La Rovere, dkk., 2009; de Carvalho, dkk., 2015).

The foundation for the development of biodiesel in Indonesia was established in January 2006, when the Government of Indonesia Issued Presidential Decree No. 5 establishing the National Energy Policy which aims to secure the domestic energy supply by setting blending targets for biofules. The overall goal is that biofuels constitute 5% of national energy consumption by 2025. Then by Minister of Energy and Mineral Resouces Regulation No. 25/2013 stipulated the obligation to mixing palm oil biodiesel by 10% (B10) in January 2014, followed by B15 in 2015, B20 in 2016 and B30 in 2020 in the transportation Public Service Obligation (PSO). This policy was followed by several supporting regulations seeking to accelerate the supply and use of biofuels and the creation of national taskforce for biofuel development and set several targets, including the development of 5.25 million ha of new biofuel plantations, most of them from oil palm. Thus, this policy aims to reduce dependence on imported fossil fuels and build national energy independence at the same time (Timnas BBN, 2007 in Andriani, et al., 2011; Purba, et al, 2018).

Unfortunately, most of the area needed for the expansion of the oil palm industry was supplied through the conversion of forest. This expansion and the increased productivity were the main factors that enabled the industry to become a globally important provider of affordable vegetable fat. Oil palm is harvested in many tropical countries on more than 12 million hectares and yields over 32 million tonnes of oil annually. It counts for more than one quarter of the global vegetable oil market and is the most important oil crop next to soybean. During the past 5 years the oil palm area harvested expanded at a rate of 400,000 ha per year (FAOSTAT data in Germer and Sauerborn, 2006).

Besides, A growing biodiesel industry leads to deforestation as landowners convert pristine rainforests into oil palm plantations. Therefore, a higher biodiesel price leads to greater deforestation. The conversion of rainforests to oil palm plantations alters the carbon storage potential of the forests. Thus, deforestation leads to reduction in the carbon credits from decreasing rainforests. The Malaysian government could raise the GHG efficiency of the palm oil industry by encouraging the mills to treat their POME and prevent the release of methane. Then a policy to prevent deforestation would maintain the large carbon credits that Malaysia claims against its GHG emissions. Moreover, an expanding biodiesel industry boost agricultural employment but could raise agricultural employment but could also raise agricultural prices, reduce exports and increase imports (Szulczyk and Khan, 2018).

On the other hand, many of the environmental challenges associated with palm oil cultivation and palm oil production for biofuels and food applications. Some of the environmental challenging factors facing the palm biofuels industry include massive emissions resulting from the production of the raw materials; type of production technology employed; amount of input resources used to obtain the overall products; waste managemeny practices; pollution control etc. In the plantation, for instance, the clearing of new forests and the conversion of peat lands for oil palm cultivation lead to biodiversity loss and rise in greenhouse has (GHG) emissions because of fossil fuel combustion and decomposition of organic matter in peat land. The contribution of environmental impacts from palm oil cultivation would eventually add to the rise in the environmental contributions from the production systems of palm biofuels. Therefore, there is a greater need to minimize environmental emissions from the feedstock production units (Lee and Boateng, 2013).

Thus, this paper aims to contribute the impact of B20 policy, with the aims to reduce fossil oil import in Indonesia by using General Trade Analysis Project (GTAP). This study show that it has a positive impact on carbon dioxide alleviation.

II. LITERATURE REVIEW

Enciso, et al (2016) assess the impact of abolishing biofuels policies on agricultural price levels and price variability as well as some aspect related to global food security by employ a recursive-dynamic agricultural multi-commodity model within a stochastic framework. The result show that abolishing biofuel policies for the major world players would imply a large negative impact on biofuel use and production, with the adjustment being more pronounced in those regions where the policies are more distortive. Our scenario results show that although agricultural commodity price levels decrease with the removal of biofuel policies, this does not necessarily lead to an increase in global food use. Our analysis shows that total crop production marginally decreases when biofuel mandates are removed. As a consequence, the removal of biofuel policies only leads to very marginal increases in food use for all crops. Furthermore, abolishment of biofuel policies would only moderately increase price variablity for agricultural commoditis. In contrast to the consesus about the harmful effects of price fluctuations on food security, it is less clear whether a household is a net seller or net buyer of agricultural products The result shows that abolishing of biofuel policies would have a significant effect on price variability of biofuels, but only a marginal impact on the variability of agricultural commodity prices. Without biofuel policies, global biofuel demand would decrease by 25% for ethanol and 32% for biodiesel.

Huang, et al (2012) assesed the future impacts of biofuel production on regional agricultural and related sectors over the next decade with a specific focus on the vulnerable regions of developing nations. Using a modification of the GTAP modelling platform to account for the global interactions of regional biofuel and food markets, the analysis shows that biofuel production levels depend on the assumption about the future price of energy and the nature of the substitutability between biofuels and petroleum-baed transport fuels. Low energy prices reduce the demand for biofuels and thus require greater government support to meet the desidered production targets. The analysis demonstrate, that whatever the reason for the expansion of biofuels, there are likely to be important effects on the agricultural economies of the major producing countries. Greater biofuel production from the US, brazil and the EU leads to price rises in the developing countries in Africa and South Asia. The prices of all crops rise, including the prices of corn, sugar and rapeseed as well as non-feedstock crops, such as wheat and rice. In the case of feedstock crops, such as corn, developng countries also experience increases in production, exports and self-efficiency. There is also a rise in value added in the agricultural sector-a gain that is enjoyed by the owners of land and labor, including unskilled.

Ali, et al (2013) studied the expected future effects of national and global biofuels policies on agriculture markets and food in Pakistan by using GTAP model. The results show that the global biofuel developments, particularly those in USA, EU and Brazil, will affect the prices, supply and trade of agricultural commodities in the respective national and world markets. The spillover effects of these changes will alaso reach Pakistan in terms of increased prices, higher production, and impproved trade of feedstock used in the three major producers. These results indicate that Pakistan's foreign exchange spending on its traditional agricultural imports. While the impacts of Pakistan's biofuels developments on world agriculture are less significant, they are very much evident from changes in domestic agriculture market of Pakistan. The rapid expansion of domestic ethanol production will substantially increase sugarcane production and reduce production of most of other crops and livestock. Changes in prices and production of agricultural trade. Overall, the agricultural trade deficit of Pakistan will increase significantly. While reducing crude oil imports through Pakistan's national biofuel program can improve its national energy security, it may have adverse effects on the national food self-sufficiency as the imports (exports) of food and feed will rise (fall).

Ajanovic (2011) investigate whether the recent increase of biofuel production had a significant impact on the development of agricultural commodity prices. The major conclusion shows that naturally, the use of feedstock prices mainly due to increases in feedstocks demands and corresponding higher marginal cost. In addition very cheap prices are not a target in any market per se. The goal should rather be prices, which reflect the acual marginal production costs. This is currently not the case in many countries because of agricultural subsidies and international trade restrictions. But farmers need a certain market price level to have an incentive to grow feedstock. Hence, a more intensive competition due to feedstock use for biofuels could finally lead to an over-all "healthier" market.

The results show that there are five activities that contribute most to the environmental impacts of CPO production. Burning fibers in the boilers in mills is the main source of S02, NOX, NMVOC, CO and PM emissions and cause human toxicity problems, photochemical ozone formation, and acidification. The use of fertilizers in plantations is the main source of N2O, NOX, NO3 and SO2 emissions and cause global warming, eutrophication, acidification, and human toxicity. Furthermore, wastewater treatment and empty-fruit-bunch disposal in mills are a main source of CH4 emissions and cause global warming. Next, gasoline use in weed cutters is the main source of CO and NMVOC emissions and cause photochemical ozone formation. Finally, glyphosate use for weed control leads to freshwater ecotoxicity problems (Saswatecha, etal., 2015).

Burning fibers is a main source of SO2, NOX, NMVOC, CO, and PM emissions, and contributes significantly to AD, EP, POF and HT impacts. The P-RSPO mills overuse and burn fibers. As a result, they produce larger emissions and environmental impacts than other cases in almost all categories, except for the GW impact. The lowest environmental impacts are calculated for CPO produced in C-RSPO mills. The results are most clear for the global warming and photochemical ozone formation impacts. On the other hand, CPO produced in P-RSPO mills shows the highest impacts on the EP, AD, and HT, mainly as a result of overuse and burn fibers in the palm oil extraction and excessive use of fertilizers in the plantations (Saswatecha, etal., 2015). Looking at the GW impact, a main contributor is not only N-fertilizer use but also POME treatment and EFB disposal in the mills. N-RSPO mills have a poor management for POME treatment and EFB disposal. On the other hand, C-

RSPO mills have better management for POME treatment and EFB disposal (Saswatecha, etal., 2015).

The main land use type identified to be suitable and available for oil palm expansion in the eastern region include mainly grassland, abandoned paddy field and abandoned cropland. In the south, these include abandoned paddy field, grasland, marsh and swamps. Most of the land area that could be used for oil palm expansion is represented by abandoned paddy field with 60% followed by grassland with 36%, while marsh and swamps conribute the remaining 5%. In the Eastern region, grassland is the land use offering the highest coverage for oil palm expansion with 56%, followed by abandoned paddy field with 31% and the abandoned cropland with 13% (Permpool, et al., 2016).

Moreover, the results also reveal that the conversion of abandoned paddy field and grassland to oil palm contributes to oil palm contributes each about half of the overall carbon saving. Marsh and swamps because of their comparatively musch smaller area coverage (as compared to grassland and abondoned paddy field) have minor impact on reducing the overall GHG saving associated to oil palm expansion in that region. It coul be seen that in Eastern area indicate that oil palm expansion in the east would contribute GHG savings amounting to 47,214 tonnes CO2-eq per year and oil palm expansion in the south also brings GHG savings which for this region are 2.5 times that of the east, at about 115,882 tonnes CO2-eq per year. Moreover, the greatest carbon savings are from the conversion of abandoned paddy field with about 62,183 tonnes CO2-eq per year. However, the conversion of marsh and swamps contributes net GHG emissions amounting to 5137 tonnes CO2-eq per year (Permpool, et al., 2016).

Andriani, et al., (2011) studied about environmental impacts of palm oil by using two different techniques, first by using time series of landsat images and questionnaire. The result shows that prior to oil palm establishment, 84 percent of the concession area was covered with secondary peat swamp forest, 12% with dry agricultural land, while the rest was swamp. In 2000, 6 years after the plantation establishment, secondary peat swamp forest within the concession was reduced to 42%, while the oil palm area increased to 34 percent. The most recent landsat imagery indicates that oil palm currently covers 39% of the concession, while secondary peat swamp forest covers 40% of the area. Oil palm still covers only about 7,700 ha of the 13,600 ha concession, indicating that further expansion is likely to adversely affect the remaining secondary peat swamp forest. In 2005, 7 years after the oil palm company started operations, we find that more than 1.900 ha of forest was cleared. Over the next 3 years until 2008, they converted more than 9.400 ha. Based on field survey carried out in March 2010, the plantation company reported only 17.000 ha oil palm planted. This indicated that after 12 years in operation, the company used less than 60% of the total concession area.

In the simulations shown, a comprehensive linkage is made between driving variabels (such as population change) and policies (such as biofuel usage) that could effect land-use change in India over the coming decades. Moreover, the simulations illuminate the consequences of an increasing demand for agricultural land (both for food and biofuel production) on the further depletion on natural resources in India. Important aspects include the consequences of changing land-use on biodiversity and on greehouse gas emissions related to land conversion and agricultural management, which can counteract potential benefits of substituting fossil fuels. For example, the conversion of unmanaged land to cropland can cause the release of carbon dioxide from soil organic matter and from burning aboveground biomass while the applicaion of fertilizer as part of the agricultural manegemnt is a source of nitrous oxide emissions to the atmosphere. It shoul be kept in mind that the calculated scenarios prohibit conversion of forest and therefore minimize the carbon debt of new sugarcane plantation (Schaldach, et al., 2011).

Glinskis dan Gutierrez-Velez (2018) based on satellite-based land cover change analysis, they found that between 2010-2016, smallholders utilized 21,070 ha more land area for oil palm than industries but industrial expansion occured predominantly in old growth forests (70%) in contrast to degraded lands for smallholders (56%). Large industries and smallholders ultimately differ in their expansion strategies into degraded lands and old-growth rainforest for oil palm production. Although smallholders converted more land area for production of oil palm as a whole, their land use as a proportion of total area converted tells a different story. By utilizing more degraded lands for cultivation, they avoided converting more than 40% forested land than big industries.

III. METHODOLOGY AND DATA

A computable general equilibrium (CGE) model is used to achieve the objectives of this paper. What is presented here is a modified version of the GTAP-E model (Burniaux and Truong, 2002). A multi-regional CGE model with focus on how variables like quotas, subsidies, and taxes interact and the dynamic through which these policy variables are connected to other indicators such as employment, income and trade are named as the Global Trade Analysis Project or GTAP model. Nevertheless, previous studies have used GTAP for modelling the energy-economy-environment-trade relations that is one of the important goals of the implementation of economic policy. However, the modelling of this linkage in GTAP is not yet complete. This is because the energy substitution, a key factor in this linkage chain, does not exist in the standard model specification.

In GTAP model, every region described in the same model structure. A country is associated as consumer in which subject to income factor, income tariff, and tax. These countries allocated their income to three expenditure categories: household expenditure, government expenditure and saving. In particularly for household expenditure, constant difference of elasticity non-homothetic function is applied. Input and primary factor such as land, employee and capital combined. Input is a combination from domestic and foreign input, whereas foreign input categorized by region and source (Armington's assumption). On production factor market, it is assuming that there is no unemployment, where all labor and capital only can be maximized domestically. Wage rate and capital determined endogeneous at equilibrium in agricultural production, farmers determines land allocation. It is assumed that land is only intended to grow a single kind of plant, therefore land renting is could be taking place. Every contry or region divide their income proportion for saving and consumption expenditure to maximize their utility.

Burniaux & Truong (2002) used GTAP E to evaluate energy policy. Burniaux & Truong (2002) remedied this defeciency by incorporating energy substitution into the standard GTAP model. It was begun by reviewing some existing approches of this problem in the contemporary CGE models. It then suggested an approach of GTAP that incorporated some of these desirable energy substitution features. The approach of GTAP model called GTAP-E. In addition, GTAP-E incorporates carbon emissions from the combustion of fossil fuels as well as a mechanism to internationally trade these emissions.

Data

Based on Burniaux & Truong (2002), this study used GTAP-E, a part of GTAP 9 in 2011. GTAP-E consist of 140 countries and 57 sectors aggregated into eleven regions and eight sectors. The aggregated region comprises Singapore, Malaysia, Arab Saudi, China, Indonesia, America, Oceania, East Asia, South Asia, North America, America Latin, European Union, Sub-Saharan and rest of world. While there are 5 aggregated sectors of the 57 sector consist of natural resources, paddy rice, vegen fuits, forestry and agricultural (wheat, cereal grains nec, oil seeds, sugar cane, sugar beet, crop nec, bovine cattle, sheep and goats, horses, animal products nec, raw milk, wool, silk-worm cocoons, fish).

Scenario

President has issued Presidential Regulation Number 66 of 2018 concerning mandatory biodiesel for the Public Service Obligation (PSO) and non-PSO sectors. The regulation signed on August 15, 2018 also revised the Presidential Regulation Number 61 of 2015 concerning the collection and use of oil palm plantation funds. In the revised new rules, the expansion of the use of B20 is clearly stated in the insertion of Paragraphs (1a) and (1b) in article 18. The two paragraphs regulate B20 financing for expansion to the non-PSO sector which initially was only addressed to PSO. On the other hand, the aims of B20 polices is to reduce import of crude oil due to deficit budget faced by Indonesia’s government. By increasing biofuel production, it could reduce import on crude oil and saving governmemt expenditure. This study assumes to account 20 percents of B20 policy as well as 20 percent of reduce crude oil. Thus, this study using 20 percent of reduction of crude oil as shock.

IV. RESULT AND ESTIMATION

1. Impact on Carbon dioxide

GTAP simulation predict the postive and negative impact of reduction on fossil fuel due to B20 policy in each countries. It could be seen on below:

Tabel I

The impact of fossil fuel alleviation on carbon dioxide

Countries	CO2 emission	Countries	CO2 emission
Singapore	-0,314236	South East Asia	-0,004119
Malaysia	-0,080578	North America	0,001316
Arab Saudi	0,018617	Latin America	0,002121
China	-0,000734	EU_25	0,002307
Indonesia	-0,157930	MENA	0,006320
AS	0,001287	Sub-Saharan African	0,002306
Oceania	0,001770	Rest of World	0,000792
East Asia	0,010954		

Source: Processed

Based on table above shows the effect of reduction fossil fuel on carbon dioxide emission due to B20 policy, blending biofuel on fossil foil about 20 percent. Reduction of fossil oil gives alleviation on carbon emission in Singapore, Indonesia, China, Malaysia and South East Asia by

0,314236, 0,157930, 0,000734, 0,080578 and 0,004119 respectively. While other gives increasing on carbon emission including Arab Saudi, America, Oceania, East Asia, North America, Latin America, European, Middle East North Asia, Sub- Saharan Africa and Rest of World. The highest reduction of carbon emission is Indonesia followed by Singapore. It means that by reduction of import fossil oil can reduce emission in Indonesia. It is in line with previous research. While Singapore is the highest importer of fossil fuel to Indonesia, also reduce carbon emission. It is based on Singapore does not have their own oil resources that makes them import from other countries. When demand in oil is decrease, it shows that Singapore does not increase the supply on fossil fuel.

2. Impact on market price on commodities

Tabel II

The impact of fossil fuel alleviation on market price commodities

Countries	Commodities				
	Natural Resources	Forestry	Paddy Rice	Vegen Fruits	Agriculture
Singapore	1,1890	-0,0076	0,0013	-0,0022	-0,0033
Malaysia	-0,3230	-0,0006	0,0178	-0,0050	0,0100
Arab Saudi	-0,0894	-0,0003	0,0003	-0,0090	-0,0065
China	-0,0008	0,0013	0,0012	0,0011	0,0012
Indonesia	0,2481	-0,0512	-0,1011	-0,0741	-0,0329
AS	-0,0228	0,0010	-0,0002	0,0001	0,0001
Oceania	-0,0120	0,0000	-0,0006	-0,0007	-0,0008
East Asia	-0,0045	0,0032	0,0023	0,0019	0,0015
South East Asia	-0,0653	0,0013	0,0017	0,0005	0,0009

South Asia	-0,0137	0,0015	0,0010	0,0012	0,0009
North America	-0,0226	0,0005	-0,0000	-0,0000	-0,0000
Latin America	0,0221	0,0001	0,0001	0,0001	-0,0000
EU_25	-0,0110	0,0008	0,0005	0,0002	0,0003
MENA	-0,0373	-0,0020	-0,0013	-0,0017	-0,0016
Sub-Saharan Africa	-0,0209	-0,0009	-0,0010	-0,0011	-0,0010
Rest of World	-0,0139	-0,0005	-0,0004	-0,0005	-0,0005

Source: Processed

Based on table above shows the effect of reduction of fossil fuel on market price of commodities such as natural resources, forestry, paddy rice, vegan fruits and agriculture. Reduction of fossil fuel gives negative impact on natural resources almost in all countries such as Singapore, Malaysia, Saudi Arabia, America, Oceania, East Asia, South East Asia, South Asia, North America, Europe, MENA, Sub-Saharan Africa and rest of World by 1,1890, 0,3230, 0,0894, 0,0008, 0,0228, 0,0120, 0,0045, 0,0653, 0,0137, 0,0226, 0,0110, 0,0373, 0,0209 and 0,0139 respectively. The highest impact on reduction of natural resources is Singapore by 1,1819, followed by Malaysia by 0,3230. While Indonesia and Latin America gives positive impact by 0,2481 and 0,0221.

Moreover, reduction of fossil gives positive impact on China, America, East Asia, South East Asia, South Asia, North, Latin America, and Europe. While, Singapore, Malaysia, Arab Saudi, Indonesia, MENA, Sub-Saharan Africa and rest of world. On the other hand, reduction of fossil fuel has no impact on forestry.

Paddy commodity gives positif impact Singapore, Malaysia, Arab Saudi, China, East Asia, South East Asia, South Asia, Latin America and European Union. The highest impact of reduction of fossil fuel to market price on paddy rice is Malaysia by 0,0178 while the lowest impact is on Latin America. North America has no impact of reduction fossil fuel on market price of paddy rice. Singapore, Malaysia, Arab Saudi, Indonesia, Oceania, North America, MENA, Sub-Saharan and rest of world gives negative impact on market price of vegen fruit by reduction of fossil fuel. On the other hand, China, America, East Asia, South East Asia, South Asia, Latin America and European Union gives positive impact on market price of vegen fruits. Reduction of fossil fuel gives negative impact on Singapore, Arab Saudi, Indonesia, Oceania, North America, Latin America, MENA, Sub-Saharan Africa and rest of world. While Malaysia, China, America, East Asia, South East Asia, South Asia and European Union. The result shows that Indonesia has an impact on decreasing on market price commodities such as paddy rice, vegen fruit, agriculture and forestry towards reduction on fossil fuel while natural resources has a positive impacts. Related B20 policy by government lead to decreasing on fossil oil which tends to saving government expenditure. On the other hand, it encourage domestic demand and increase the production of domestic palm oil which is impact on increasing the price of palm oil as renewable natural resources.

V. CONCLUSION

By implementing B20 policy, where blending fossil fuel and palm oil account 20 persent, government can enrich its goal to reduce fossil fuel import.

Besides, biofuel has positif and negative impact on environment. The result shows that by the reduction of fossil fuel import has positive impact on reduction of carbon emission 0,157930 percent in Indonesia. While it has negative impact on market proce on commodities such as paddy rice, forestry, vegen fruit and agriculture. On the other hand, it has pistive impact by increasing market price commodity on natural resources.

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