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PALM OIL INDUSTRY IS NON-EXTRACTIVE INDUSTRY

By

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RESUME

Unlike mining industry, oil and gas industry, logging industry or others industries, who extractive and exploiting natural resources, palm oil industry, especially in the plantation produces palm oil through cultivation process. The process also utilizes good management and science and technology innovation to create higher productivity and more sustainable. The factors are limited land, implementation of the moratorium and the demands of global consumers about the enviromental sustainability, are arguments about increased productivity (intensification) being direction for future development of the national palm oil industry in the upstream sector.

The method of increasing productivity (intensification) which can be achieved in three ways, namely: improvement of technical culture (GAP) with adopting Palm Oil 4.0 packet technology; replanting and a combination of both. The result of third method (combination method) is increasing total factor productivity and become a milestone in advancing the palm oil industry in Indonesia and and this is very relevant for today, in line with the implementation of moratorium policy, as well as to maintain Indonesia's position as largest producer in the world.

Another evidence shows that the palm oil industry is non- extractive industry, namely the development of a downstream industry, which is capable to processing palm oil and its biomaterials into products with higher economic added value. Currently, the palm oil-based downstream pathway is divided into three, namely: oleofood complex, oleochemical complex and biofuel complex. Downstreaming is able to create big multiplier effect to improve economy and increase the welfare of the community. Downstreaming is also a method of demand management to handle excess supply and stocks of palm oil in the global market, so stability price can achieved. In addition, through downstream, which is capable of producing palm oil-based downstream products that have high economic value, efficiency, competitiveness and sustainability, it will also strengthen Indonesia's position as a global player in the world market. In the future, it is hoped that researchs will produce inovations in palm oil-based products from three downstrea, routes, that can be provide solutions to the problems and needs of the global community.

INTRODUCTION

The anti-palm oil parties consider oil palm industry as one of economic sector that is extractive and exploits nature. In fact, they who accuse it don't understand with the mean of "extractive". Although the definition of extractive industry is quite diverse, but in general meaning that can be defined as an industry that only extract the nature resources to be used commercially. Example for extractive industries are mining, oil and gas, logging.

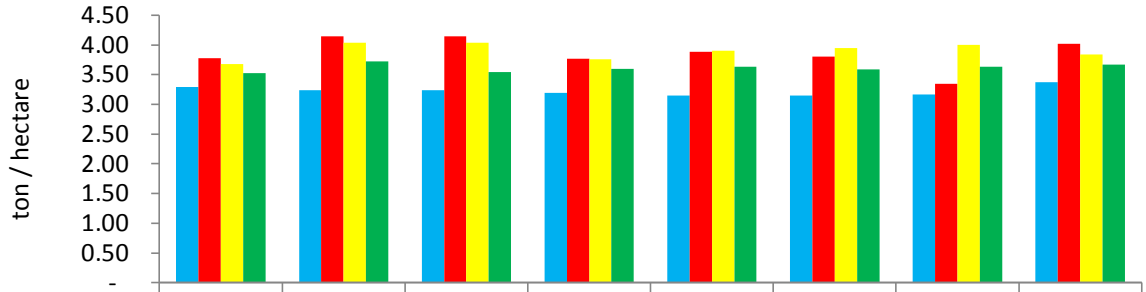
If we look this definition, it is very clear that palm oil industry is non-extractive industry. The upstream sector of the industry namely plantation, to produce palm oil through good cultivation with using best management practices and utilizing science and technological innovation. In addition, to further increase business profits, the plantation company does not always have to expand land to increase the palm oil production, but they can integrate their plantations with the downstream industries to produce the derivative products that have higher economic value. Downstream industry also utilizes good management as well as technological and scientific to product various product innovations, that can meet the needs or become solutions which can handle the human's problem.

This shows that the palm oil industry both at the upstream and downstream sectors doesny an extractive industry, on the contrary, by utilizing science and technology, this industry is non-extractive and more sustainable. Along with the improvement in the governance of the palm oil industry by stakeholders, it will increasingly prove that the palm oil industry is non-extractive industry. Therefore, this paper aims to discuss the development of the palm oil industry in the future which further proves the industry as a non-extractive sector.

THE EVIDENCE OF NON-EXTRACTIVE AT PLANTATION: INCREASED PRODUCTIVITY

To produce palm oil, it can be done through a combination of expanding the area (extensification) and increasing productivity (intensification). However, along with the development of science and technology innovation as well as cost efficiency, increasing productivity is the best option to increasing palm oil producing. The factors are limited land, the implementation of the moratorium on oil palm plantations (Presidential Instruction No. 8/2018 about Postponement and Evaluation of Oil Palm Plantation Licensing and Increasing the Productivity of Oil Palm Plantations) and the demands of global consumers about the enviromental sustainability, are additional arguments regarding the direction for future development of the national palm oil industry in the upstream sector in the context of increasing palm oil production is carried out through increased productivity (intensification) because it is more sustainable.

The average of national oil palm productivity increase from 3.53 tonnes per hectare to 3.67 tonnes per hectare during the 2011 - 2018 (Figure 1). If we compared with plantation companies, the smallholders's productivity (PBR) is the lowest and has increased from 3.29 tonnes per hectare to 3.77 tonnes per hectare. State companies (PBN) also decreased from 3.78 tonnes per hectare to 4.02 tonnes per hectare. Meanwhile, the productivity of private companies (PBS) also show increasing from 3.68 tonnes per hectare to 3.84 tonnes per hectare.



	2011	2012	2013	2014	2015	2016	2017	2018
Smallholders	3.29	3.24	3.24	3.19	3.15	3.15	3.17	3.37
State	3.78	4.15	4.15	3.77	3.88	3.80	3.35	4.02
Private	3.68	4.04	4.04	3.76	3.91	3.95	4.00	3.84
National	3.53	3.72	3.54	3.60	3.63	3.59	3.63	3.67

Figure 1. Palm Oil Productivity ((Source : Director General of Plantation, Ministry of Agriculture, 2020)

The average productivity of oil palm plantations in Indonesia is still below the standard potential productivity by Indonesian Oil Palm Research Institute (IOPRI) up to 7.8 tonnes per hectare. The challenge of managing oil palm plantations in the future is to increase productivity (both in plantations and milling) closer to standard potential so as to ensure the sustainability of Indonesia's palm oil supply. From an economic point of view, there are two methods to increase the productivity (Figure 2).

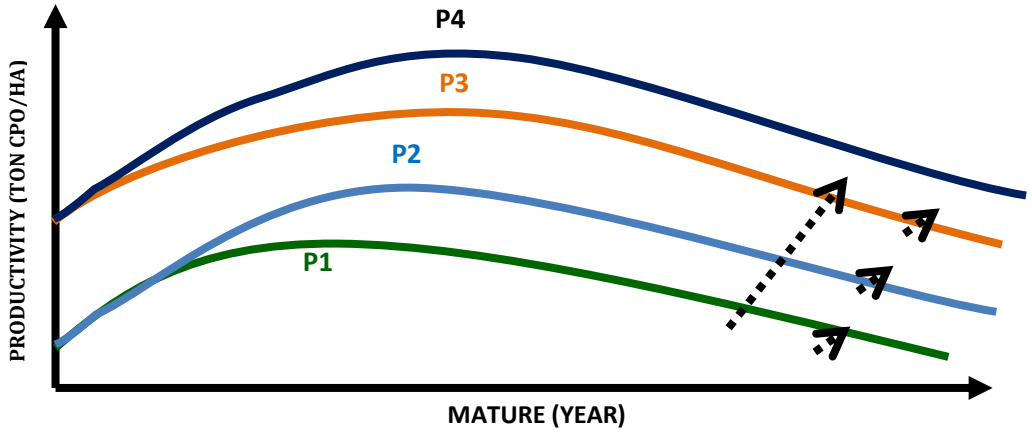


Figure 2. The Increased Productivity Due The Improvement of Cultural Technical (P2 and P4) and Total Factor Productivity (P3)

The first method (Partial Factor Productivity) is the increasing of productivity of oil palm plantations (including milling) on mature age, namely shifting the current productivity curve (P1) to a new productivity curve (P2). In implementation, this first method is carried out by improving technical culture (Good Agricultural Practices/GAP) of existing (mature) plantation or those that are still in the economic age. GAP is also a part of application and dissemination of technology package of using inputs (fertilizers and pesticides/herbicides) with the 4R principle (right type, right dose, right time, and right method) in achieving optimal productivity and more sustainable.

Innovation of oil palm cultivation technology that is being developed and has begun to be implemented at the plantation is Palm Oil 4.0 which utilizes digitalization technology (such as Big Data, Artificial

Intelligence (AI), Internet of Things (IoT), Robotic and Sensory) on plantation cultivation (fertilization, pest control, harvesting) until processing on milling to produce of higher productivity.

The second method is replanting, which is replacing unproductive plants that have entered their economic age (more than 25 years) by using superior seeds. IOPRI as a seed producer has also produced superior seed varieties with CPO potential ranging from 8.2 tonnes/ha/year to 10.2 tonnes/ha/year (IOPRI, 2020). In order for the ideal plant composition, the standard for replanting is 4 percent per year. With oil palm plantation area of 14.3 million hectares (Ditjenbun, 2020), it is expected that around 573 thousand hectares will be replanting every year. This second method will shifting the productivity curve from P1 to P3.

The combination of these two methods, improving technical culture on mature plants and replanting with using of superior seeds, they will result total factor productivity. And these methods will shift the total productivity curve from P1 to P4. Thus, the replanting program which is also complemented by the implementation of technical culture (GAP) is a milestone in advancing the palm oil industry in Indonesia, and this is very relevant for today, in line with the implementation of moratorium policy, as well as a moment of "advancing" to support the sustainability of oil palm plantations.

The momentum of replanting is very important in an effort to maintain the strategic position of Indonesian as a largest palm oil producer and to fulfill the sustainability aspect, so it requires the government's attention. Smallholders, which are one of the important actors in the national palm oil industry, but the productivity performance of their plantations is the lowest compared to plantation companies, so it is necessary to assist them in implementing the replanting program.

Therefore, the government through the Palm Oil Plantation Fund Management Agency (Badan Pengelola Dana Perkebunan Kelapa Sawit/BPDPKS) provides financial assistance for replanting programme on smallholders plantation (Peremajaan Sawit Rakyat/PSR). Because one of the obstacles faced by farmers to replanting are limited capital and limited access to credit. PSR funding received by farmers has also increased from IDR 25 million per hectare to IDR 30 million per hectare (PASPI, 2020 - NEWS 26). This funding assistance becomes an incentive for farmers to replanting their oil palm plantations, so that it is hoped that the realization target of 180 thousand hectares each year.

THE NON-EXTRACTIVE EVIDENCE AT INDUSTRY : PALM OIL AND BIOMATERIAL BASED DOWNSTREAM INDUSTRIES DEVELOPMENT

Indonesia has succeeded in becoming the largest CPO producer in the world since 2006. The next strategy is to make Indonesia not only the “king of CPO”, but also the “king of downstream products” in the future. This can be realized through the development of palm oil-based downstream industry. In addition, to increasing economic value added, the industries not just export palm oil, but the development of downstream industry that ultilize oil, biomaterial and waste can be processed into derivative products. Various government policies such as the application of export taxes (Export Duty and Export Levies) and industrial tax incentive policies also contribute to the development of the palm oil-based downstream industries in Indonesia.

Palm oil is a versatile vegetable oil, so the application to be developed into various product. Currently, the downstream pathway is divided into three, namely: oleofood complex, oleochemical complex and biofuel complex. **First**, the oleofood complex, namely the expansion and deepening of the downstream palm oil (including palm kernel oil) and its biomaterials to produce food and health products in the form of intermediate and final products, examples palm cooking oil (MGS), margarine, shortening, ice cream, creamer, cocoa butter / specialty-fat; and health products (micronutrients) such as Vitamins A and E, essential fatty acids.

Second, the oleochemical complex, namely the expansion and deepening of the

downstream palm oil (including palm kernel oil) and its biomaterials to produce oleochemical products in both intermediate and final products, examples biosurfactants (for example: personal care products such as soaps, shampoos, cosmetics, skincare; hygiene and sanitary products such as detergents), biolubricants / biopilants, bioplastics and other products.

Third, the biofuel complex, namely the expansion and deepening of downstream palm oil (including palm kernel oil) and its biomaterials to produce bioenergy products as an alternative to fossil energy, examples: biodiesel, biohydrocarbons, bioethanol, biogas, bioelectric.

Downstreaming is able to create a multiplier effect based on productive activities such as employment, growth of supporting and services industries, increasing government revenue and "healthier" trade balance (generate more export foreign exchange and saving foreign exchange for imports) so as to improve the economy and increase the welfare of the community. Downstreaming is also a method of demand management to handle excess supply and stocks of palm oil in the global market, so stability price can achieved. In addition, through downstream, which is capable of producing palm oil-based downstream products that have high economic value, efficiency, competitiveness and sustainability, it will more strengthen Indonesia's position as a global player in the world market.

To Indonesia's goals as the king of downstream products in the global market and can achieving the benefits described above, its needed to doing some research produce innovations of product that can be solutions to the problems and needs of the world community in the future. However, this research should not only be a final report, but the innovation research must be applied or disseminated on an industrial with commercial scale and can be marketed throughout the world.

Examples of palm oil based downstream research that have successfully offered solutions to problems faced by the Indonesian avtur (PASPI, 2020 - JURNAL MONITOR 27) is palm oil-based biohydrocarbon (diesel, gasoline and avtur). This palm oil-based biohydrocarbon products was developed by researchers at the Bandung Institute of Technology (ITB) with the aim of reducing Indonesia's dependence on fossil fuel, given higher our dependence on fossil fuel import. In addition the development of biohydrocarbon products will also absorb palm oil produced from smallholder plantations. It's means that this products can achiebe two goals at the same time, both to energy security and strenghthen smallholders.

Not only that, palm oil-based products can also be produced and traded to fulfill the needs of the global community to adapt with Covid-19 pandemic. The products in question include personal care products and sanitary products such as soap, detergent, handsanitizer and biodisinfectant. Palm oil-based downstream product innovations also continue to be developed, especially in the health and pharmaceutical goods, which aim to extract vitamins and micronutrients contained in palm oil to produce products that are useful for maintaining and boosting immune system so as to minimize the risk of corona virus infection.

CONCLUSION

Unlike mining industry, oil and gas industry, logging industry or others industries, who extractive and exploiting natural resources, palm oil industry, especially in the upstream (plantation) can produces palm oil through cultivation process. The process also utilizes good management and science and technology innovation to create higher productivity and more sustainable. The method of increasing productivity (intensification) which can be achieved in three ways, namely: improvement of technical culture (GAP), replanting and a combination of both.

Another evidence shows that the palm oil industry is non- extractive industry, namely the development of a downstream industry, which is capable to processing palm oil and its biomaterials into products with higher economic added value. Currently, the palm oil-based downstream pathway is divided into three, namely: oleofood complex, oleochemical complex

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