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WELL-BEING CHALLENGES OF PALM OIL SMALLHOLDERS COMMUNITY

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ABSTRACT

Malaysian government has introduceda commercial palm oil agriculture programme to enhance personal, family and at the same time increase national income. The programme aims to increase of smallholders not only with the economic growth of families and communities, but also promote the physical. The basic prerequisite about oil palm cultivation is good land for cultivation. Apart from access to farms which also pay an important role in facilitating farm management. The impact of the development will build more employment opportunities with good basic services, growth of various types of growth of various types of industry, housing, school facilities and other basic facilities. Therefore, the purpose of this paper is to identify the challenges to improve the well-being of smallholder's palm oil communities in Malaysia. Discussions on the challenges to palm oil smallholders focus on land shortages, lack of access to credit and loans, lack of improved planting materials, lack of training and skills, lack of processing facilities, high fertilizer prices, technological expertise and soil fertility challenges. Meanwhile, discussions on community well-being focus on the economic, social and environmental aspects of smallholder palm oils. This discussion of challenges and well-being is also linked to the Sustainable Development Goals (SDG) for future planning of the palm oil smallholder community.

Keywords: community development, infrastructure, smallholders, development, palm oil

INTRODUCTION

Palm oil is worldwide's most commonly traded oil for the production of 60 % of the world's oilseed exports (Dradjat 2012) and could be considered as a valuable commodity used worldwide in the biofuel, agri-food or body care industries (Mutsaers 2019). It is also one of the main strategies to improve the economy and, as a result of the high oil productivity, it can be regarded as a superior ability of food products (Sunarminto 2019; Yunus et al. 2009). Malaysia's palm oil history was dated back in 1911, when palm oil seedlings from Africa were planted in the Rantau Panjang district of Kuala Selangor. A significant number of African countries are home to the first "Elaeis Guineensis" palm-tree (Khatun et al. 2020; Hartley 1988). Given their needs for vegetable oil as a foodstuff, it is the reason on why the merchants so desire to trade palm oil in other tropical countries at the beginning of the 18th century. The palm oil industry subsequent growth as a commodity was supported the production and development of oil palm in the areas where it can develop (Wong and Er 2019).

Rural Malaysian oil palm farmers are about 18,000 with 4 million employees and 2.5 million are employed abroad from Bangladesh, Myanmar, The Philippines and Indonesia (Junaidi et a. L. 2020; Cramb & McCarthy 2016). Foreign laborers, especially in Indonesia, are mainly involved in oil palm plantations of well-managed small-holder farmers such as Federal Land Development Authority (FELDA) and Federal Land Consolidation and Rehabilitation Authority (FELCRA) (Cramb and McCarthy, 2016). The oil palm workers

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make a significant contribution to the mental and physical resources of palm oil production, but their earnings are low and have not been calculated to the extent of their workloads, making them catching up in a high level of poverty in a variety of rural areas (Junaidi et al. 2020; Bellemare et Meemken 2020). Furthermore, these workers also lack access to clean water, sanitation, clean kitchen fuel and the pipe water supply. Moreover, problems such as lack of access to modern input, insufficient credit facilities, unsatisfactory good facilities, inadequate marketing access, environmental degradation, and insufficient agricultural advanced services have often been experienced.

Therefore, to ensure the wellbeing of the smallholder communities, generic support should be provided, and infrastructures should be made available in the regions where these smallholders palm oil communities are concentrated (Aliber & Hall 2012). This is also to achieve the third and ninth goal in Sustainable Development Goals (SDG) which is to ensure healthy lives and promote well-being for all community at all ages and to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. The list of goals for SDG is stated in Picture 1 and Table 1, below:

Picture 1: Sustainable Development Goals (SDG) 2030

Source: United Nation Development Programme (2015)

Table 1 Sustainable Development Goals (SDG) 2030

No.	Goals
Goal 1	End poverty in all its forms everywhere
Goal 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Goal 3	Ensure healthy lives and promote well-being for all at all ages

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Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Goal 5	Achieve gender equality and empower all women and girls
Goal 6	Ensure availability and sustainable management of water and sanitation for all
Goal 7	Ensure access to affordable, reliable, sustainable and modern energy for all
Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Goal 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
Goal 10	Reduce inequality within and among countries
Goal 11	Make cities and human settlements inclusive, safe, resilient and sustainable
Goal 12	Ensure sustainable consumption and production patterns
Goal 13	Take urgent action to combat climate change and its impacts*
Goal 14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Goal 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Goal 16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
Goal 17	Strengthen the means of implementation and revitalize the global partnership for sustainable development

Source: *United Nation Development Programme (2015)*

Munasinghe et al. (2017) also found out that the smallholders in Sri Lanka are facing issues related to income as the amount paid to them is low and does not comply with the poverty line that had been stated by their local government. The same issue happened in Thailand as well where the smallholders in Thailand which consists of the poor people are facing problems related to land ownership. Due to the land ownership problem, the farmers are unable to increase the productivity of the crops thus caused them to have low income and lack of incentive (Praneetvatakul et al. 2013). Ahmed (2019) stated that employees mostly have lower (or similar) average income and consumption than their respective control groups. Here it can be concluded that the smallholder communities are often oppressed until they lost their job and trapped in poverty.

CHALLENGES FACED BY MALAYSIAN OIL PALM SMALLHOLDER COMMUNITY

Many smallholder farmers, however, face challenges that have hindered their productivity and growth (Collier & Dercon 2014; Karuku 2014). Smallholder production has been adversely impacted by the lack of land, lack of access to credit and loans, lack of improved planting materials, lack of training and skills, lack of processing facilities, high fertilizer prices, technological expertise and soil fertility challenges (Jelsmaa et al. 2019; Jelsmaa et al. 2017; Raimi et al. 2017; Enwelu et al. 2013). This is due to the existing land tenure system and the new land policy that is not ideal for young farmers who might be interested in investing in oil

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palm production (Arya et al. 2020; Enwelu et al. 2013). As mentioned by Erniwati et al. (2017), wealthy farmers have cultivated and transformed the land into oil plantations more frequently than the average farmers because of high capital. Many independent smallholders also do not have the official title to their oil palm plantation land and almost none of the independent smallholders register their oil palm business (Hutabarat et al. 2019). What makes the land issue worst is, although the independent oil palm smallholders with plantations located in forest area had legal documentation and land ownerships, they would not be permitted since forest land is under the ownership and management of the central government which is the Ministry of Environment and Forestry (Erniwati et al. 2017).

Lack of capital to buy new machinery and technology, lack of capital to plant, fertilize, poison, cut down the fronds, and collect revenue are also the problems that prevent smallholders to increase their production of palm oil. The situation also hindered them from exporting the oil palm to the world. Hence, some government agencies had taken initiatives to raise the income of smallholders by encouraging the smallholders to take advantage of and use all available facilities to enhance their productivity (Junaidi et al. 2020). In addition, smallholder farmers also have limited access to agronomic resources, such as effective fertilizer and herbicide application (Syafiq et al. 2020). According to Laizer et al. (2019) smallholder farmers are unable to do chemical control in their plantations as it is too costly, and they cannot afford it. Due to their smaller plot size, poor agricultural practices and poor access to higher-yielding oil palm varieties used by companies that operate large-scale oil palm plantations, independent smallholders are often less productive compared to other commercial growers. This is why the skills and effectiveness need to be improved, good management systems and sustainable practice among smallholders need to be practiced (Ali et al. 2014; Tilman et al. 2002). On top of that, studies by Junaidi et al. (2020) had found that the cost of managing oil palm cultivation is recognized to be quite high compared to other commodity crops.

The infrastructure was provided to the more remote farmers (poor road access conditions that were in poor condition), making them unable to harvest all the fruits during the rainy season due to poor accessibility of parts of their plantation (Jelsma 2019). For example, many of the smallholders in Sabah are located in remote areas that are geographically distant from mills, bad soils, infrastructure and ports in a region with poorly maintained roads (Martin et al. 2015). As the government does not have enough budget to build roads and facilities in rural and remote areas, the smallholder community must develop and maintain its farming roads (Hutabarat et al. 2019; Jelsma 2017). In the meantime, all the infrastructure that the smallholder lacks is contributing to lower productivity compared to the commercial estate in the palm oil sector (Suhada et al. 2018; Euler et al. 2016; Brandão and Schoneveld 2018; Beekmans et al. 2014). The recurrent incidence of fire in agricultural land often raises the risk to smallholders of investment losses (Purnomo et al., 2017).

Next, it also seems that some of the smallholder palm oil community have a low level of knowledge in keeping with best agricultural practices (Junaidi et al. 2020; Begum et al. 2016). For those working in the palm oil sector, competence could be acquired through experience as laborers or as part of a core partnership between the business and smallholders (Arya et al. 2020). The knowledge in the palm oil industry is essential for the balance of nutrition in order to ensure good oil palm productivity and to improve the nutritional status and productivity of local farms (Jelsma 2019). Besides, smallholders who have good technical skills will be able to produce higher yields and increase their income. They will also be able to improve their knowledge and skills related to palm oil cultivation. (Hidayat, 2015; Rietberg and Slingerland., 2016). It is also found that there are palm oil smallholders who are interested

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to engage in oil palm cultivation, but they do not have proper knowledge and skills to ensure that the palm oil that they have cultivated can produce high yields. Some of them even use an incorrect tempering technique in sowing the palm oil shrubs and only focussing on gaining fast profit while ignoring the quality of palm oil that will be produced (Junaidi et al. 2020). Some palm oilers pick up unripe and semi-cooked fruit to produce oil palm. This had caused little and low-quality palm oil. However, most rural people employed in the oil palm sector are made up of day-to-day employees as harvesters and other similar roles, which do not generally require additional skills and specialized knowledge. In order to support and encourage the youths to reach their full potential, proper job training, supervision and motivation should be provided (Junaidi et al. 2016). This is because generally, the surrounding communities are low educated and have no opportunities to go to school due to poverty (Junaidi et al. 2020; Sunarminto 2019). Thus, they just take whatever jobs are offered to them in order to continue their livelihoods (Sunarminto 2019). Even though the tasks assigned to the laborers do not require specific skills, but the ability in using the latest modern technology is needed and should be emphasized as it could help to ensure profitability and high productivity of palm oil produced (Junaidi et al. 2020; Gratton and Goshal 2003). This is in line with research done by Zaki, Er and Chamhuri (2015) which stated that knowledge provided by MPOB regarding good agricultural practice can not only increase the income of the smallholders but can also reduce damage to the environment as the smallholders are taught on the best techniques that can be used in oil palm cultivation. As an example, in Iran, implementation of an agricultural-education program should be implemented in order to produce experts in the field of agriculture which it does not only involves technical skills but also involves aspects of management and implementation of policy related to agriculture (Allahyari et al. 2009).

Besides that, a smallholder in the palm oil industry is often associated with a lack of awareness of technology, good practices and financial problems (Junaidi et al. 2020). Bryan (2013) also explained that often smallholder production is associated with a lack of awareness of technology, good practices, and financial problems. In order to increase the productivity of smallholders, agencies such as the Malaysian Palm Oil Board (MPOB), the Smallholder Farmers Authority (RISDA), the Farmers' Organization Authority (LPP), the RISDA Community Developers (PMR) have allocated capital contribution to oil palm planters. This is done in order to encourage the oil palm planters to purchase modern and advanced technology from developed countries such as Japan and Korea to increase their productivity. Besides, the usage of modern and advanced technology will help the laborers and oil palm planters to better understand and recognize new machinery and skills Junaidi et al. (2020). Thus, their oil palm production will also become easier, faster and more efficient.

Another challenges that are often faced by the smallholder palm oil community is social issues. To some extent, the concept of corporate social responsibility that has been introduced to the smallholders has helped them to improve to be a better farmer. However, some previous studies have shown that it is difficult for companies to be responsible for social sustainability, to educate and to inspire smallholders to be experts in problem resolution, networking and innovation through the process of thinking outside the box (Pasaribu, Vanclay and Zhao 2020). Thus, the stakeholders should be wise in determining the appropriate program for the smallholders to ensure there are no conflicts related to agricultural development in the area. Begum et al. (2016) also stated that the training scheme provided by FELDA to smallholders did not help them in understanding the concept of sustainability itself. This is coupled with the fact that women farmers in Nigeria often have to compete with male farmers to get jobs in plantations. Therefore, this group relies on Corporate Social Responsibility (CSR) initiatives

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in the fight against gender discrimination to get jobs to support their families who are in poverty (Uduji et al. 2019). Moreover, the smallholders also often have no proper channel to voice out their problem to the government and this had contributed to low performance in their agricultural activities. Thus, associations and groups of smallholders were established. Surprisingly, when smallholder communities participate in associations and groups, their agricultural activities were seen to increase significantly. The participation of farmers in the association allows them to always communicate with each other in solving any problems that arise. For instance, in Sweden, an initiative has been taken to curb the issues of agriculture by establishing farmers' associations and groups. These groups would act as intermediaries to convey information and problem faced by the farmers to the government (Archambault 2004). Other than improving their knowledge, they are also able to share any problem that occurs in their communities with the authorities so that it can be resolved quickly.

Pest disturbance has issues associated with adverse factors in environmental aspects. Although this issue is not as severe as the economic and social problem, it could cause smallholders low productivity and great losses. Pest attacks are like pigs, caterpillars, and horned beetles. Most of the time, the pig will damage the small oil palm plantation that is newly planted and still young while invasive caterpillar will damage palm oil crops by eating the palm oil leaves causing the palm oil photosynthetic process to not occur (Junaidi et al. 2020).

EFFECTS OF PALM OIL INDUSTRY PRODUCTION ON THE WELL — BEING OF PALM OIL SMALLHOLDER COMMUNITY

The Palm Oil market has successfully been able to bring significant social benefits and costs by employing rural people in a significant way, generating investment in services and infrastructure, and improving the distribution of income among rural people (Junaidi 2020; Meijaard & Sheil 2019; Hein 2016; Dradjat 2012). Besides, the rapid growth of the oil palm industry has also created significant economic and social benefits, such as foreign exchange and jobs (Dradjat 2012). The oil palm industry has also become a significant resource for farmers and out-growers relying on the oil palm sector 's incomes to sustain their lives (Osei et al. 2012; Nchanji et al. 2016; Ahmed et al. 2019). In Malaysia, the palm oil industry is seen as a pillar of the economy, as it plays an important role in providing food and energy to the growing world population (Junaidi et al. 2020). It is also undeniable that palm oil has made substantial contributions to the economy, and a fall in palm oil exports will do greater harm to the land tenure of households in rural areas (Rifin 2020). The rapid growth of the palm oil industry also produces multiplier effects, such as being a source of foreign exchange and employment, and contributes to major changes in rural communities, particularly in economic terms. (Dradjat 2012; Prawoto 2010; Syahza 2011). In Indonesia, the rural communities regard oil palm plantations as their best way to meet the development needs of their communities and give them better access to education, health care, and infrastructure (Pasaribu 2020).

ECONOMY

The positive impacts of the palm oil industry include economic development, infrastructure development, job creation and poverty reduction (Raharja 2020; Pasaribu 2020; Apurv and Uzma 2020; Sunarminto 2019; Haimin 2010). Access to jobs, increased business opportunities, increased community income and socio-economic revenue are the benefits of the community's oil palm production (Pasaribu 2020; Sunarminto 2019). The significant increase in the growth

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of the oil palm also shows a major contribution to potential land shifts through small to medium-sized land conversions (Erniwati et al. 2017).

Although the growth of the palm oil industry has many positive effects, infrastructure development be it a soft infrastructure or a hard infrastructure is the principal impact of palm oil industry development. The infrastructure behind or under the system was built as a superstructure (Bagchi 2017). All these supports are important for the implementation of a business method, project or even manufacturing process (Sunarminto 2019). Infrastructure is also considered as access to a certain form of infrastructure for households, such as water, power, irrigation and roads (Medeiros et al. 2020). In an economic context, all those activities and services which, in addition to the generation of revenue, contribute to the economy, can also be seen as "infrastructure" (Majumder 2005) in other economic sectors. Zhang et al. (2020) claimed that economic infrastructure, such as transport and electricity, can romote development, while it is influenced by social infrastructures, such as education, health care and social security. Furthermore, in any form of growth infrastructure is often known to play an important part, and its absence often represents an important aspect which restricts economic progress (Zhang 2020; Bagchi 2017; Dradjat 2012). As the positive impacts of public infrastructure funding, it is not only the city but also the regions surrounding it that are also essential to poverty reduction (Medeiros et al. 2020). For example, infrastructure expansion and development will help to open market access and opportunities, reduce business risks and uncertainty, increase sales & efficiency, create jobs, and drive improved production growth (Han et al. 2020; World Bank 2020; Medeiros et al. 2020; Bagchi 2017). Consequently, access to infrastructure in a certain region can have an impact on economic development through enhanced social security and services (Zhang et al. 2020; Apurv and Uzma 2020). The growth of the palm oil industry also helped smallholder farmers benefit from comprehensive installations such as palm oil mills (Hein 2016; Sandker et al. 2007). This has proven to be optimistic and significant concerning infrastructure building and economic development (Apurv & Uzma 2020). Only then will many small-scale growers cultivate oil palm independently without funding from government agencies, as the demand for oil palm grows, and more infrastructure is available (Jelsma 2017).

The presence of oil palm plantations themselves supplied the community with a lot of job opportunities, from every day to workers (Drajat 2014). This is because the expansion of palm oil plantations requires more laborers and manpower be it skilled or unskilled. Thus, more job opportunities were offered to the people living in rural areas especially for those who are unemployed (Sunarminto 2019). Balde et al. (2019) also said that communities in rural areas would be benefited from the development of palm oil plantations as it could generate employment and income opportunities (Mudombi et al. 2018; Achterbosch et al. 2014; Negash and Swinnen. 2013). The involvement of communities in oil palm cultivation also generates significantly higher incomes, allowing them to spend more money on food (Balde 2019). More people with permanent employment could secure monthly wages, improve the economic flow in the village and raise the buying power of the people (Sunarminto 2019). The cultivation of oil palms in small farmers and large farms also allows millions of people to generate jobs and provides better salaries than they might get by producing food crops. Abazue et al. (2019) stated that in terms of job opportunities, people staying in rural areas would be those who will be in favour and receive more benefit due to the expansion of the palm oil industry. Not only that, the expansions and growth of the palm oil industry should also support local business development (Mahmood and Sabir 2020). This is because the construction of infrastructure in rural areas is directly related to upgrading the living conditions of the population. At the same

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time, the rate of employment would also increase and helps in eradicating poverty (Meijaard and Sheil 2019*;* Ahmed et al. 2019). In addition, expanding oil palm plantations offered new business opportunities for residential areas and numerous investment opportunities while indirectly bringing in workers from abroad, making it possible to operate more efficiently because of previously unexisting market opportunities (Sunarminto 2019; Unjan et al. 2013). A number of jobs have been created in the community and it has somehow helped to speed up the growth of village infrastructure around the plantation (Sunarminto 2019; Mara and Fitri 2013; Prawoto 2010; Susila 2004).

The agricultural sector, such as palm oil, also plays a key role in combating poverty and ensuring food security (Dradjat 2012; Sheahan and Barrett 2014; Affognon et al. 2015; Dossou 2020). For instance, the major contribution of the palm oil sector to the economy is seen through economic growth, poverty alleviation and income distribution within society (Susila 2004). Other than economic growth, the palm oil industry was also promoted to boost development in the rural area while alleviating poverty at the same time (Balde 2019; Gasparatos et al. 2015; Jones and Gibbon 2011)**.** The development of the palm oil sector in rural and remote areas helps to eradicate poverty by boosting rural development, creating more jobs for the locals and improving housing conditions (Medeiros et al. 2020; Rifin et al. 2020; Ayompe et al. 2020; Enwelu 2013). Research by Edwards (2019) has also shown that it has been achievable for the palm oils industry to lift people from poverty in rural areas. Moreover, shifts in the palm oil sector have a higher chance of affecting rural labor than those in urban regions (Rifin 2011). The rise in the share of palm oil in districts with the biggest expansion will also decrease poverty and narrow the income gap (Edwards 2015). Aside from increasing access by rural households to private goods such as piping and non-solid fuel, the expansion of oil palms has had a positive effect on small-households by increasing the disposable income of farm households and the wages of plantation workers (Krishna 2020).

SOCIAL

The production by companies and communities of oil palm plantations has brought not only physical landscape or change of the environment, but also social change in rural areas (Arya et al. 2020). Oil palm plantations are being developed in many developing countries by large farmers that provide many children with access to education and contribute simultaneously to SDG 4 (ensuring inclusive and equitable education in quality, facilitating lifelong learning opportunities for everyone) (Bennett et al. 2019).

On top of that, children of the smallholder communities were able to get access to proper education even though they live in rural and remote areas as education infrastructure like schools are now available, thanks to the development of palm oil plantation (Sunarminto 2019). The production of palm oil field plantations has had a positive effect on social and cultural aspects, such as increased community expertise, work ethics and community understanding of village education and institutions. Every society has the right to improve their quality of life to be better than in the past. Therefore, providing quality education to the children of oil palm plantation workers and specialized training related to oil palm could be considered as a good initiative implemented by FELDA. By providing a quality education to the children, not only the level of education can be improved, but the crime rate in the community could also be reduced. The initiatives that have been taken will then give an indirect positive impact in the social aspect as seen on Nigerian farmers. Although the Nigerian farmers were trapped

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in poverty and cannot afford to go to school, but they are able to curb the social problem and improved their living standards by working in the plantations (Ohimain, Emeti and Izah 2014).

The growth of palm-oil industries also benefitted local communities through the development of infrastructure such as new access roads to major cities, and to improve health, education, employment, living standards and technology availability. Accessibility is also one of the community's significant effects. Living in a rural area leaves the smallholder groups disconnected from the outside world. The presence of the oil palm business therefore made accessible the isolated villages possible and indirectly made the population more mobile. For independent smallholder farmers, the construction of roads and other infrastructure in rural and remote areas continue to be largely dependent on local authorities (Hutabarat et al. 2019). This is because individual farmers' plantations are not clustered in one area, and the very wide distances between them have created another barrier to governmental infrastructure (Hutabarat et al. 2019). Consequently, it also helps in restructuring the economic flow in that area (Sunarminto 2019). Gibbons et al. (2017) have suggested that improvements in road conditions have a positive impact on local jobs, increase plant productivity, added value, and also wages. By having better road access and road network, the smallholder community has better option to sell their commodities to the entrepreneurs who can afford to buy the product at a better price. Hence, the monopoly in purchasing commodities by one company or collecting palm oil commodities in the palm oil will not occur (Yunus, 2009). In addition, access to the farm also plays an essential role in making it easy for farm maintenance to be carried out.

ENVIRONMENT

Although the palm petroleum industry has brought many economic and social benefits, there are some negative environmental aspects, such as waste water from building activities, noise generated by heavy machineries use, trees dropping, and so forth. (Afzal and Naseem 2018). Expansion of agriculture like palm oil is also the primary factor of the transition in land use (Ashraf et al., 2017; Geist and Lambin, 2001; Sharma et al., 2019).

In addition, waste produced by palm oil mill in the shape of coats, fruit fibres, empty bunches, pome sludge and, unless used, waste from olive palm trees pollutes the atmosphere and causes global warming by producing CH4, CO2, CO2, AND NH4. In addition, eutrophication and silting are also caused by the establishment of oil palm plants next to water bodies that affect local water purification and supplies (Ayompe et al. 2020). Moreover, road development in forest frontiers leads to several primary and secondary impacts (Alamgir et al. 2019). The primary impacts include local deforestation for road construction, some greenhouse gas emissions, local changes in abiotic and biotic conditions caused by edge effects, increased erosion and stream sedimentation, and wildlife roadkill (Alamgir et al. 2017; Laurence et al. 2009). The secondary impacts include incursions of hunters and poachers; legal and illegal logging, mining, forest fires, and land encroachment; landslides and impeded water flows; invasions of disturbance-favoring species; and land speculation; among other impacts (Alamgir et al. 2017; Laurance et al. 2009; Blake et al. 2008). Therefore, to minimize the environmental impacts caused by the independent smallholder of oil palm plantation, the independent oil palm smallholders should be monitored closely to make sure they did not simply pollute the environment with waste generated from palm trees (Erniwati et al. 2017). In addition, public policies should also be enforced to ensure the future projects of oil palm expansion do not jeopardize the areas of high biodiversity and high conservation value. The smallholder plantation should not be developed in the areas that are sensitive to environmental degradation,

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or areas with high conservation values such as a protected forest. Deforestation also should be avoided at all costs to make sure the smallholders' plantation did not increase methane or carbon dioxide emissions (Dradjat 2012).

CONCLUSION

To conclude, the development of the palm oil industry had succeeded in bringing various positive impacts to smallholders' livelihoods whether for the poor who lived in the rural and remote areas or to those who have more land and capital. The impacts do not only safeguard the well-being of the smallholders and the palm oil workers, but it also contributes to economic development and social changes. The impacts could be seen via three aspects which are economic, social and environmental. Among the impacts are generating job opportunities for the locals, alleviating poverty, developing infrastructure, increasing wages and income of smallholders, improving standards of living and providing accessibility from oil palm plantation to town. Since most of the oil palm smallholders are from those with low income and often have a less distinguishable infrastructure, the infrastructure provided from the expansion of the palm oil industry are able to improve their standards of living and make them succeed in getting out of poverty. The positive impact resulted from the development of palm oil industries is also in line with the new approaches taken by the government in implementing the National Development Policy. One of the approaches is to eradicate poverty by reducing the poverty rate and increase the employment rate. Consequently, the development of palm oil industries also helps in poverty alleviation and creating job opportunities especially for the people living in the rural areas. This shows that the implementation of the NDP approach in addressing the urban and rural poverty is successful.

For the negative impact, the development of palm oil plantation had cause damage by causing reduction of forest areas and small-scale infrastructure, affects water availability and local water purification, contamination of water, deforestation and induce climate change. Although some of the impacts are negative, they can be tackled by the community and local government using precautionary measures and enforcing stricter laws. Thus, society needs to play their part to ensure that the expansion and development of the palm oil industry will be able to run smoothly without jeopardizing the environment. This can be done by working with Non-Governmental Organizations (NGOs). The society also holds a responsibility to be the mediator and reporter by reporting all the environmental issue and problems caused by oil palm industry while pressuring the local government to solve the issue. For instance, there are NGOs in Sabah and Sarawak, named Borneo Resources Institute and Sahabat Alam Malaysia that help the local community on the issue of customary land rights. Asides from delivering talks on the impact of the oil palm industry, the NGOs also guide the local community on the customary land rights and actions that can be taken to defend their land rights. Meanwhile, the responsibilities to increase public awareness should not be passed solely to the community and NGOs. On the other hand, the responsible parties should provide credit facilities to the farmers as 'borrowing hands' for them to purchase sophisticated equipment and machinery and technology to facilitate the smooth production of oil palm and increase the direct income of the workers. In addition, the government should reconsider the opening of the new agricultural areas to help the smallholders of oil palm communities. This is because, the limited agricultural area and the number of agricultural plantations had resulted in the decline of oil palm production in Malaysia. The government too should play their part by enforcing stricter laws to those who pollute the environment with the waste of palm trees. Broader sustainability

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benefit from industrial crop plantation can be delivered by taking possible measures such as ensuring the wider community benefits from the infrastructure and social services developed by plantations, and improve the working conditions for plantation workers and the company's overall sustainability performance. By adopting the sustainability standards as mention above, income level and working conditions could be improved and the people working as plantation workers and smallholders would have a better quality of life.

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