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Optimization of Crude Palm Oil Fund to Support Smallholder Oil Palm Replanting in Reducing Deforestation in Indonesia

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Received: 29 July 2019; Accepted: 22 August 2019; Published: 9 September 2019



Abstract: Smallholders play a significant role in the Indonesian palm oil industry. They cultivate more than 40% of the total plantation area, and their production contributes to the national revenue. However, despite their significant role, smallholders continue to face crop management, financial and environmental challenges. The fact that some smallholder plantations are illegally located in state forestland poses challenges for smallholders as regards getting access to finance, improving yields, and obtaining sustainable certification. Government policy on the collection of levies from exported crude palm oil (CPO fund) and its derivative products provides smallholders the opportunity to replant and support their sustainable practices, thereby reducing deforestation. This paper discusses how fiscal incentives of the CPO fund may have been optimized to prioritize these outcomes. We should prioritize the use of the fund not only to support smallholder replanting, but also to clarify their land tenure rights, so that they could get access to sustainable certification and financial institutions. It is also recommended that funds be allocated to subsidize loan interest to the bank and build productive capital during the grace period. These efforts have to be accompanied by building and improving smallholder databases and strengthening local government.

Keywords: CPO fund; palm oil; deforestation; replanting; sustainable palm oil management

1. Introduction

Indonesia is currently the world's largest producer of palm oil, and, together with Malaysia, accounts for 85 to 90% of total global palm oil production [1]. In 2017, Indonesia produced around 37.8 million tons of palm oil, derived from around 14 million ha of plantation areas across different regions in the country [2]. The palm oil industry contributes fiscal and foreign exchange earnings to the country, employs large numbers of rural workers, and supports the livelihoods of a growing number of smallholders, who increasingly embrace this crop as their main income source [1,3]. Further the sustainable plantation management can accelerate economic development in the regions and reduce the poverty [4] and oil palm play important role in livelihood strategies in rural areas [5]. In contrast, oil palm expansion generates significant carbon emissions, particularly when planted in peatlands [6], and contributes to biodiversity loss when production involves the conversion of primary forests [7,8]. It is argued that for a developing country such as Indonesia, it is inevitable that the natural resources utilization through plantation development is aimed to prosper national and relevant stakeholders particularly the community.

While 56% of oil palm plantations involve forest conversion [7], it is, however, claimed that the proportion of plantations originating from the conversion of primary and secondary forests is very

small. Most plantations were planted on agricultural land, followed by secondary forest and marginal land [9]. Despite large increases in the extent of plantations, there has been a decrease in the proportion of plantations replacing forests, from 54% during 1995 to 2000 to 18% during 2010 to 2015 [10].

Demand for land for expansion of oil palm plantations from forest areas not only stems from large-scale companies, but also from smallholders rate of smallholder plantation expansion exceeds that of large companies [11,12]. Of the 2.5 million ha of oil palm plantations illegally located on state forest areas, around 68% are smallholder plantation. Some studies indicate that the likely reduction in forest areas is due to smallholder plantation expansion, and that the annual s [13]; this has been in the spotlight in the last few years as one of the causes of deforestation.

The last five years have seen a growing recognition of the importance of minimizing deforestation and work currently are underway to address negative impacts of deforestation and to improve the governance of palm oil in the country. Moratorium policies have been put in place to postpone the issuance of new licenses on primary and peat lands, and stricter criteria for permitted forest conversion have also been set to guide the use of low carbon areas for plantation and to limit expansion. The government further promoted sustainable palm oils by setting mandatory standards (Indonesian Sustainable Palm Oil) for more sustainable and environmental friendly practices among oil palm growers and industries. It also plans to oblige smallholders-which plays a significant role in the country's oil palm production-to adhere to these standards, ensuring that environmental and social impacts are controlled.

To promote sustainable palm oil and to finance the sector, in 2015 the government through Government Regulation No. 24/2015 and Presidential Regulation No. 61/2015 issued policies to levy exported palm oil and its derivative products, and to collect, manage and distribute Crude Palm Oil funds (hereinafter referred to as the crude palm oil (CPO) fund). Those policies is one of the fiscal policies issued by the government to support sustainability in plantation development. Fiscal instruments such as tax revenue can improve land management, which is needed in sustainable business models [14]. The fund is aimed to develop human resources, research and development, promote the country's sustainable palm oil in international markets, support smallholder replanting and develop infrastructure. There is a potential that CPO fund can be used to help finance smallholders in replanting and improving their sustainability practices.

It is widely recognized that smallholders have limited access to finance and poor incentives [15–17], limiting their capacity to improve their farming practices and use quality planting material and other input such as fertilizer and pesticides. They are often associated with include inappropriate use of fertilizers, illegal encroachment on forestlands, conversion of peatlands, and irresponsible clearing practices [18]. Smallholders in particular often lack the investment capital and financial flexibility to not only comply with higher standards of sustainability, but more importantly to reduce the risks of their operations [19].

Earlier studies indicate relations between finance and sustainability among smallholders. Funding smallholders could lead to increased productivity of oil palm lands, thereby obviating their need to expand their plantations into forests [17,20,21]. Long-term finance and replanting offers opportunity for farmers to improve their livelihood and sustainability practices and falling yields could lead them to return to their previous 'slash-and-burn' practices [22]. However, replanting activity requires substantial funds: IDR 29.54 million/ha [23]. A replanting program using plant material of good quality would lead to higher production. Funding can incentivize smallholders to adopt good and sustainable practices. Various financing schemes for smallholder farmers are already in place [24] and they have the potential to lead to increased oil palm production. Having an increased productivity level precludes the need to open up new land for oil palm plantations.

While there have been numerous studies focusing on the role of finance in promoting sustainability among smallholders and of various innovative financing for smallholders to increase crop productivity, less is still known about public finance such as CPO fund and its potential role in promoting sustainability in the oil palm sector. It is still not clear how the CPO fund—which is currently managed

by the Palm Oil Fund Agency—can be used to the maximum to incentivize smallholders. This paper aims to examine how the CPO fund can be optimized to incentivize smallholders to improve crop productivity and thereby discourage them from encroaching on and degrading forests.

2. Materials and Methods

2.1. Research Framework

Despite its important role in enhancing people's welfare and contributing to the national production of palm oil, smallholders face some challenges in getting their plantations certified under sustainable standards, particularly the Indonesian Sustainable Palm Oil (ISPO). There are some hurdles to be overcome, which include clarifying legality issues, as most of their plantations are illegally located on state forest lands. They also need to increase the productivity of their crops by using certified and high-quality planting material, and to engage in groups that facilitate collective actions. Due to land legality requirements set out by financial institutions and the government, many palm oil smallholders have limited access to finance sources and subsidies, making it difficult for them to adopt sustainable practices such as land clearing without burning, using good quality planting material, and replanting their unproductive plantations. The low level of production, along with other reasons, often push smallholders to expand their plantations, thus encroaching on state forest lands. Johnston [24] assume that increasing productivity levels can increase oil palm production, without the need to open up new land for oil palm plantations.

This paper, as depicted in Figure 1, has been based on the theoretical framework of sustainable development [25], highlighting a need to balance social, economic and environmental interests while realizing the goals of sustainable palm oil among smallholders, using policy incentives. The definition of sustainable development refers to the United Nations General Assembly (1987) [25]: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs." In the context of palm oil management, oil palm shall be cultivated in sustainable practices to ensure triple aspects of sustainable development. This expected condition requires active roles of all parties: growers, private sector, government, financial institutions, and others [26].

The role of government particularly in natural resources management such as palm oil management should be played in determining the right combination of policies instruments that will be implemented to encourage the achievement of sustainable palm oil management. Natural resources management policies according to Stiglitz and Barde [27,28] are classified into command and control, incentive system, and information delivery. Based on that theory, this paper uses the approach of incentive system to achieve the sustainable palm oil management. To prevent further forest degradation while improving access to resources, smallholders need to be incentivized. Incentives are what motivate or stimulate people to act [29] and can take the form of policy instruments that influence and cultivate the implementation of policy objectives [30,31]. Incentive mechanisms through which the environment can be managed and controlled can take the form of economic incentives, including fiscal incentives, funding incentives, and incentives for the development of environmental services markets [32]. Fiscal incentives can be used as an instrument to determine the performance of natural resource management [32,33].

The CPO fund, money for which has been collected by the Government of Indonesia since 2015 and managed by the Oil Palm Plantation Fund Management Agency (BPDPKS), serves as a fiscal instrument that has the potential to incentivize smallholders to adopt good and sustainable practices and increase crop productivity. These changes would ultimately lead to reduced pressures on forests. While the narratives underpinning the palm oil fund policy are geared towards sustainable palm oil and upgrading smallholder capacity, its implementation does seem to result in mixed outcomes. However, CPO fund can also be used for other additional purposes such as the development of upstream industries and food security, and to incentivize biodiesel production as regulated in Presidential

Regulation. Facing the multidimensionality of CPO fund utilization, it is important to study how to optimize the CPO fund utilization for enhancing the capacity and the welfare of smallholders.

Therefore, in this paper, various policies related to oil palm funds and decisions on the fund’s allocation were analyzed in terms of how they conform to or contradict the intended purposes. Procedures for fund collection, management and distribution of funds were reviewed. Progress on implementation to date and to what extent the oil palm fund has been effective according to various parties were assessed in this paper.

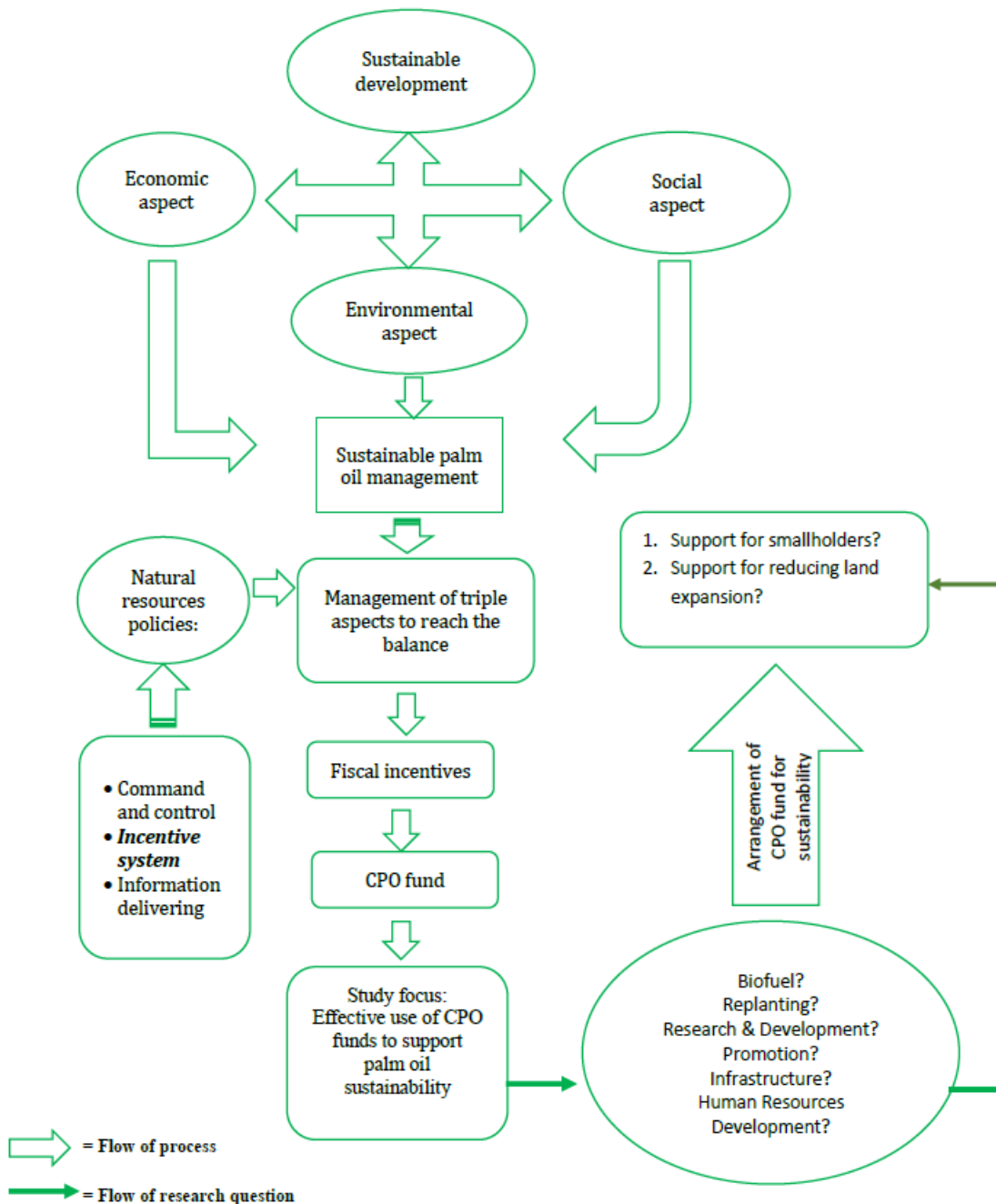


Figure 1. Research framework.

2.2. Method

The research was conducted from February 2017 to May 2018. This research aims to understand the gaps of the CPO fund policy and how it has been implemented by determining the difference between the current actual and desired conditions in the future. Therefore, this research uses a qualitative approach with the case study method. Based on Creswell [34], qualitative research aims to explore and understand the meaning of social problems based on a complete holistic picture. This means that qualitative research focuses on the processes that take place in the research, and tries to reveal the meaning behind the facts. Therefore researchers be able to explore in detail, intensive and comprehensive on the social issues that is studied without being burdened by measuring instrument as in quantitative research. This research use case study method as part of qualitative research. Based on Creswell [34], case study approach focus on cases specification that encompass individual, or community. Through this approach, researchers investigate the processes, activities, events, of groups of individuals.

Information was collected using in-depth interviews with 101 key informants, representing government, the private sector, nongovernmental organizations, smallholders, company associations, and academia at the national level as well as at project sites in Kotawaringin Timur district in Central Kalimantan and Landak district in West Kalimantan. In addition the data and information were also collected through focus group discussions (FGDs) and literature studies. Data were analyzed qualitatively descriptive using gap policy analysis as presented in Table 1.

Table 1. Objective, theory, and method of data analysis of the research.

Objectives	Theory Used	Data Analysis
To analyze the optimization of the CPO fund to support sustainable oil palm management, particularly for strengthening smallholders in the palm oil industry	Public policy [35] Sustainable development [25,36] Incentives [29,30] and incentive-based natural resources management policy [27,28,32]	Gap policy analysis

A gap policy analysis is used to identify the gaps of regulatory instruments through examining the conformity of policies and legislation with its implementation [37]. In this research, this type of analysis provided the current situation of the CPO fund policy and how it has been implemented, and using this method, we determined the difference between the current actual and desired conditions in the future, through the identification of current gaps in infrastructure planned to be achieved [38].

3. Results and Discussion

3.1. Smallholders Contribution to National Palm Oil Production: Importance and Challenges

3.1.1. Palm oil as Indonesia's Strategic Commodity

Indonesia is the world's largest producer of palm oil, currently producing around 37 million tons. The total planted area is estimated as 14.03 million ha. As indicated in Figure 2, the oil palm plantation area and production have continued to increase annually, reaching an average productivity of about 3.6 tons/ha/year. Smallholders account for 33.6% of the total production, and 40% of the plantation area [2]. As a strategic commodity, in the last few years, palm oil has become the highest source of foreign exchange. The export value of palm oil in 2017 reached its highest level, amounting to USD 23 billion or 15.9% of the total national exports [39].

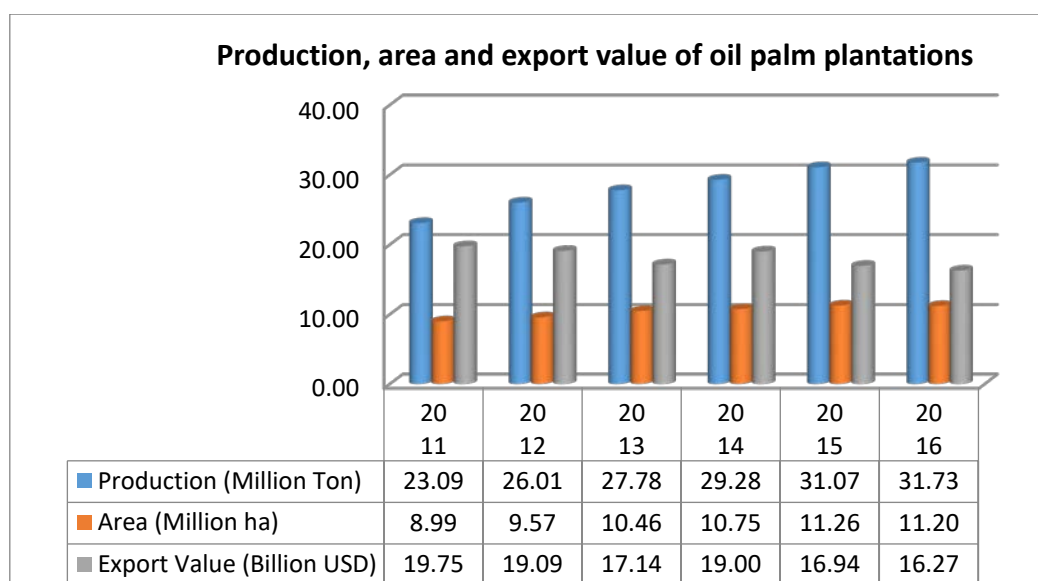


Figure 2. Production, area, and export value of oil palm plantations during 2011 to 2016 [2].

The oil palm sector contributes significantly to state revenue and encourages national and regional development. The revenue consists of non-tax state revenues, such as those from the CPO fund; taxes such as land and building, value-added, and income taxes; and export duties [40].

The oil palm plantation sector provides employment both on the scale of the farmer and on an industrial scale and improves the economy sector. Of the total oil palm plantations, smallholder plantations account for 41%, employing around 2.3 million farmers. The annual growth of job employment in palm oil industries reached a level of 10.8%, contributing directly to the development of social welfare.

In 2017, the oil palm plantation sector was able to offer employment of 5.5 million directly related jobs and 12 million indirectly related jobs [39]. Oil palm development is claimed to reduce poverty in rural areas, as can be seen from the lower number of poor people in rural communities whose main source of income is from the oil palm sector [41], thereby improving the rural economy and the welfare and education level of rural communities [42]. The oil palm sector has also contributed to national energy security by substituting imported fossil fuels equal to 3 million kilo liter through a biodiesel program in 2016, which led to savings totaling USD 1.1 billion [39].

3.1.2. Challenges in the Palm Oil Sector in Indonesia

Although the palm oil sector has much potential, it also faces various challenges and obstacles. Development of the palm oil sector is often highlighted as a major driver of deforestation, and previous studies have shown that 56% of oil palm plantations in Indonesia were developed via forest conversion [7,43]. However, the deforestation caused by oil palm plantations that were developed on primary and secondary forest land represents a minor percentage and most oil palms were planted on farmland rather than secondary forest and marginal land [9].

Some studies indicate that smallholder oil palm plantations have also caused a reduction in forest area and carbon content [11,12]. The annual rate of their plantation expansion exceeds the expansion rate of large companies [11,12]. Data from the Directorate General of Plantation [13] show that, nationally, around 1.7 million ha of the 2.5 million ha of oil palm plantations located illegally within forest areas are controlled by smallholders. This means that smallholders account for 68% of the total troubled oil palm plantations.

The presence of plantations in forest areas has prevented smallholders from obtaining any land legality certificates in order to secure their tenure of ownership. Smallholders often hold a Land Statement (Surat Keterangan Tanah) or Letter of Compensation (Surat Keterangan Ganti Rugi) issued

by the village head or subdistrict head [40]. The absence of evidence of land legality makes it difficult for them to access capital and obtain assistance from either financial institutions or government, and makes them ineligible for ISPO certification. Thus, smallholders have limited capacity to adopt good practices in managing their land and palm crops, and are inclined to use cheap methods of clearing land (i.e., fire), and to obtain uncertified seeds and poor types of fertilizer.

In addition, around 2.4 million ha are estimated to be old plantations of more than 25 years, which are not profitable to be maintained, but have not been replanted due to limited capital. Smallholder plantations are also found to have a low level of production of only 2–3 tons CPO/ha/year. This is because most smallholders use uncertified planting materials, which is indicated by their lack of ownership of cultivation and registration letters (Surat Tanda Daftar Budidaya) [12].

3.2. CPO Fund Policy: Implementation Challenges

3.2.1. Legal Basis

As mandated by laws and regulations, the government issued a policy on collection of funds from levied CPO and its derivatives exported in order to finance various programs relevant to oil palm development. These include the development of human resources, research and development, promotion, smallholder replanting and development of infrastructure. These are some of the efforts to support sustainable palm oil in Indonesia. Over the course of its implementation, the fund was also designed by law to support the development of upstream industries and food security, and to incentivize biodiesel production. Table 2 presents the legal basis, content of the relevant policies, how they have been implemented and the identified gaps in CPO fund policies and their implementation.

Regulations governing the use of plantation funds aimed to enhance the livelihood and capacity of smallholder are in place. Funds can be made available for educating farmer family members, increasing the capacity of smallholders through training, for providing quality seedlings, and building roads, and improving agricultural means that would make it easier for smallholders to harvest and sell their fresh fruit bunch (FFB) products, and to undertake replanting. However, as can be seen from Table 2, gaps still exist between the stated stipulations and their implementation. A much greater proportion (80–90%) of the fund has been allocated to incentivizing biofuel development, which limits the financial capacity to fully support smallholders. This is despite the fact that biofuel is not mandated in Plantation Law No. 39/2014, but is specified only in a lower level of regulation. This contradicts the principles of the formulation of laws and regulations in terms of hierarchy, where lower regulations have to refer to the higher regulation, as well as to policy content.

Presidential Regulation No. 61/2015 mandates the CPO Fund Agency to manage, collect and distribute CPO funds. However, decisions on CPO fund allocation highly depend on a steering committee that supervises the agency. This steering committee comprises eight ministries: the Coordinating Ministry for Economic Affairs, Ministry of Agriculture, Ministry of Industry, Ministry of Finance, Ministry of Energy and Mineral Resources, Ministry of Trade, Ministry of State-Owned Companies, and Ministry of National Development Planning/Head of National Planning Agency.

Two of those ministries, the Coordinating Ministry for Economic Affairs and the Ministry of Agriculture, play a significant role in setting a road map for smallholder replanting programs. The Directorate of Plantations under the Ministry of Agriculture is tasked with the issuance of regulations governing criteria on land and farmers who are eligible to receive CPO funds for the replanting program. It also provides technical recommendations on whether particular groups of smallholders are receiving funds. The Directorate of Plantations provides technical recommendations to the CPO Fund Agency as a requirement before funds can be distributed. However, the process of disbursement to support replanting is often hindered by a lack of performance in the selection of target smallholders.

Table 2. Legal basis of the crude palm oil (CPO) fund levy.

No.	Legal Basis	Content	Implementation	Gap
1.	Law of The Republic of Indonesia No. 39/2014 on Plantations	Financing plantation business carried out by business actors, including companies and smallholders, sourced from business actors, financial institutions, public funds, and other legitimate funds (article 93 paragraph 3). Fund collected shall be used for developing human resources, research and development, promotion, smallholder replanting, and infrastructure development.	Funds collected take the form of the CPO fund, which has been used for designated allocations. However, some portions have also been allocated for other uses such as for food needs, downstream industries and biodiesel, which are not specified in this law.	Disharmony in regulations between Plantations Law No. 39/2014 and Presidential Regulation No. 61/2015
2.	Republic of Indonesia Government Regulation No. 24/2015 on Plantation Fundraising	Funds collected from plantation business actors comprise levies on exported CPO and dues (article 5 paragraph 1).	Thus far, funds that have been collected are only levies on exported CPO.	The absence of dues from the plantation business operator
3.	Presidential Regulation No. 61/2015 on Collection and use of CPO fund (as revised by Presidential Regulation No. 24/2016)	Plantation fund source from levies on CPO exported and/or its derivatives and dues (article 3, paragraph 1). This regulation governs the use of plantation funds, particularly levies on exported CPO, for other uses such as food, downstream industries, and biodiesel.	Larger portion of funds is allocated to biodiesel incentive (80–90%) than to those allocated for financing smallholder replanting (1%).	Disharmony in regulations between Plantations Law No. 39/2014 and Presidential Regulation No. 61/2015
4.	Minister of Finance Regulation (PMK) No. 133/PMK.05/2015 on tariff charged on services provided by CPO Fund Agency	Tariffs consist of levies and dues. CPO funds take the form of levies on exported CPO, and/or their derivative products (article 2). Dues are charged only to companies, not smallholders (article 8). The rate of tariff ranges from USD 20 to USD 50 per ton of CPO or its derivative products.	Levies have been collected based on this regulation. However, dues have not been implemented. Based on Finance Minister's regulation No. 13/2017, export duty will only be charged if the CPO price is above USD 750/ton. The agency merely plays a role in distributing and disbursing fund.	Potential loss of state revenues from export duties when CPO price is below USD 750
5.	PMK No. 113/PMK.01/2015 on CPO Fund Agency Organization and Work Procedure	CPO Fund Agency is an organizational unit under the Directorate General of Treasury, Ministry of Finance, responsible for the collection, management and distribution of the CPO fund (articles 1, 2 and 3).	Disbursement of funds for smallholder replanting highly depends on technical recommendation from Directorate General of Plantation, Ministry of Agriculture.	Distribution of funds to support replanting is hindered by lack of implementing institution performance
6.	Minister of Finance Regulation (PMK) No. 152/PMK.05/2018 on tariff charged on services provided by CPO Fund Agency	Amending the above-mentioned PMK No. 133/PMK.05/2015, the rate of tariff changes to USD 0 per ton of CPO if the CPO price is below USD 570 per ton. The tariff will be charged USD 25 per ton of CPO or its derivative products, if the CPO price ranges from USD 570 to USD 619. The rate of tariff charged is USD 50 per ton of CPO if the CPO price is above USD 619.	Due to the decline in CPO prices, the government issued this regulation in December 2018. Since then, the CPO price was lower than USD 570, and therefore no tariff has been charged.	Potential loss of revenues from CPO fund

3.2.2. How Easy Is It for Smallholders to Receive Financing from the CPO Fund?

Decree of the Director General of Plantations No. 29/2017 provides guidelines for financing smallholder replanting and for developing human resources, facilities and infrastructure. It specifies the eligibility criteria for farmers and mechanisms through which CPO funds for smallholder replanting are distributed. In terms of replanting, smallholders are eligible to access the funds if the size of their plantation is up to 4 ha per household, and their plantations are more than 25 years old and/or of unproductive crop of 10 t/ha/year. They are required to hold a cultivation registration letter issued by the district plantation office, and land legality documents issued by authority offices, confirming

that their plantations are not located on state forest areas. Eligible farmers are also required to engage in farmer groups controlling plantations covering a minimum area of 50 ha. Their plantations are required to be close to CPO processing mills.

A maximum of IDR 25 million/ha (max 4 ha per household) will be granted to smallholders whose applications are accepted. Funding for replanting is not fully covered by financing from the CPO Fund Agency. Smallholders are required to secure other financial sources to fill the gaps between the granted CPO fund (i.e., IDR 25 million/ha) and the standard cost of replanting set by the Ministry of Agriculture (IDR 50–60 million/ha). Smallholders are also required to open a bank account, which allows for fund transfers from the CPO Agency.

Figure 3 depicts a flow diagram showing how smallholders or farmer cooperatives apply for CPO funds. Farmer groups or cooperatives present a replanting proposal to the district plantation service office, which is then submitted to the provincial plantation service office after verification by the district plantation service office. Then, the provincial plantation service office will verify and review the proposal before it is delivered to the Directorate General of Plantation for further verification. Hereafter, the Directorate General of Plantation will send the proposal to the district plantation service office to acquire the decree from the head of the district plantation service office. The decree assigns the CPO fund recipient and the location of the plantation. The decree becomes the basis for the issuance of a technical recommendation by the Directorate General of Plantation. The technical recommendation is submitted to the CPO Fund Agency as a requirement before the fund distributes money directly to the smallholders.

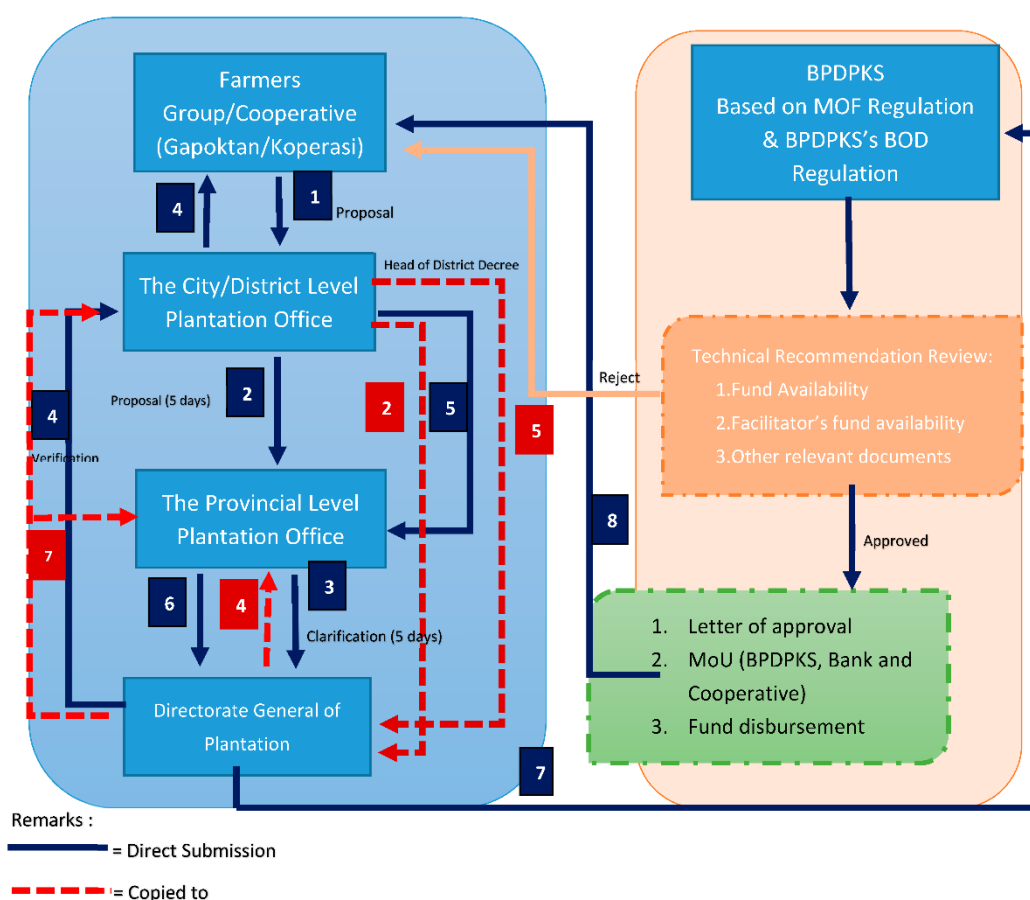


Figure 3. The CPO fund application process for replanting (Source: BPDPKS [44]).

The process of CPO fund application for replanting as the explanation of the Figure 3 is as follows.

1. Farmer groups submit replanting proposals, once they are considered to meet administrative requirements, to the district plantation office for verification.
2. The district plantation office verifies the proposals and recapitulates received proposals from farmers across district, and submits them to the provincial plantation offices, copied to the Director General of Plantations.
3. The provincial plantation office submits verification results to Director General of Plantations.
4. Director General of Plantations verifies all replanting proposals and resubmit verification results to the district plantation office, copied to the provincial plantation office. Once proposals are verified and considered to meet the requirements, the Head of district plantation office on behalf of the regent issues a decree determining prospective farmers and potential lands (CPCL) that are eligible for replanting funds. District plantation office delivers results of verification by the Director General of Plantation to the farmer group/cooperative proposer.
5. District plantation office submits CPCL decrees to the provincial plantation office, copied to the Director General of Plantations.
6. The provincial plantation office submits the verified CPCL decree to Director General of Plantations who will re-verifies relevant documents and conducts ground checks, if necessary.
7. Based on the verification results, the Director General of Plantation provides BPDPKS with technical recommendations, copied to both provincial and district plantation offices.
8. BPDPKS reviews technical recommendations and make decisions on those who are eligible to receive replanting funds, and issues a letter of approval, facilitates and disburses funds directly to targeted farmer groups through the Banks, according to stages of replanting activities.

Having received the technical recommendation, the CPO Fund agency reviews the availability of funds for replanting and facilitators and other relevant documents. Once approved, the CPO Fund Agency will then issue a letter of approval, enter into agreements with banks and farmer cooperatives, and finally disburse the funds. The agency will then monitor and evaluate the use of granted funds.

The replanting program has not been smoothly implemented for several reasons. Most smallholders are not able to meet land legality requirements as they have no proof of land ownership. They are seldom engaged in any smallholder groups or cooperatives, making it difficult for them to organize themselves; however, this is one criterion of eligibility for CPO funding. They tend to have a low bargaining position in running their farming activities. Smallholders are constrained by the lack of access to any other fund sources than the CPO fund to fill the gap in replanting financing. In addition, the lack of a database on the number and distribution of smallholders makes it difficult for the plantation officers to verify recipients of funds [45–47].

3.3. Policy Options to Optimize the CPO Fund to Support Smallholder Planting and Reduce Deforestation

While the CPO fund was originally designed as a fiscal instrument to support smallholder replanting through increased crop productivity, there are opportunities to optimize its use, not only to support replanting, but also to encourage oil palm smallholders to adopt good and sustainable practices, which will discourage them from encroaching on forests and forest areas.

Hellin and Schrader [48] have classified direct and indirect incentives to attract participating farmers in their context of a soil and water conservation program. While the program is designed to reduce soil and water loss and increase productivity, they found there was a low rate of adoption of the technology offered through such a program by farmers. The reason why farmers are less incentivized to adopt it is due to the fact that direct incentives were withdrawn. Referring to this study, we argued that the CPO fund could be categorized as a direct incentive, since it took the form of a cash payment to support smallholders in oil palm replanting. However, the performance level of the smallholder replanting program is still low due to various technical constraints such as the unreadiness of technical regulations and institutional governing of smallholder oil palm replanting.

3.3.1. Strengthening the Implementation of Smallholder Oil Palm Replanting Policies

As clearly stipulated in relevant policies, the CPO fund can primarily be used to finance smallholder replanting. It can also be allocated to support the development of relevant facilities and infrastructure such as agricultural machines, postharvest and yield processing equipment, plantation roads, transport equipment and market infrastructure, and to procure seeds, fertilizers, and pesticides. In 2017, the Director General of Plantation issued a decree (No. 29/2017) on guidelines for oil palm smallholder replanting, development of human resources, means and infrastructure, with support from the CPO fund. It sets out criteria, indicators and technical directives on how to enable smallholders eligible for accessing the fund for replanting and other purposes. They, for instance, must engage in farmer groups and have a minimum of 50 ha of legally certified lands, if they were to be eligible for the fund. Smallholders whose plantation size is less than 25 ha must also secure a document called an Surat Tanda Daftar Budidaya (STDB) based on a register issued by the head of local government attesting that information on the owner, position and size of the plantations along with other relevant information on types of crops, year of planting, origin of planting materials, etc., is valid.

To make the implementation of replanting policies as specified in the decree more effective, it is required, first, that smallholders are facilitated from the early stages to prepare working and financing plans for replanting and to realize the plans. Training in ISPO and certification need to be provided to smallholders so that they are acquainted with criteria and indicators and how their practices can be made more sustainable. Some guidance and training in managing finance are also necessary to anticipate the use of the CPO fund if funding was finally granted. The facilitator has a key role in the success of the replanting activities and therefore must be supported with an adequate budget from the CPO fund.

Second, while it is often neglected and not specified in the guidelines, it is also important to strengthen the role of provincial and district plantation offices, which play a very important role in determining the location of smallholder groups that are eligible to receive CPO funds for the replanting program. They are also key in the issuance of land certificates and STDBs, and verifying proposals from the district office and providing recommendations to the Directorate General of Plantation related to the proposed replanting activities, human resource development and facilities, and infrastructure assistance. The necessary budget deriving from the regional budget (APBD) and CPO fund needs therefore to be made available to support the effective function of the provincial and district offices.

Third, to accurately target the right smallholders, it is also fundamental to develop reliable tabular and spatial databases that show the number, distribution and characteristics of smallholders, both outside and inside forest areas. Such a database can also be used as a reference by the government and other parties in carrying out the development and empowerment program of smallholders as well as to solve problems related to tenure. The importance of the database of the number and distribution of smallholders was also confirmed by Schoneveld et al. [12], who found that characteristics of oil palm smallholders are very diverse; thus, this should be considered when determining prospective smallholders and land in order to achieve the right target of the replanting program. An amount from the CPO fund shall be allocated to finance the development of such a database.

To support the financing of the CPO fund, it is necessary to improve the role of financial institutions. Before CPO funds are disbursed, an agreement was made between the BPDPKS, financial institutions or banks, and smallholder groups. Financial institutions play an important role in the success of the CPO fund program and encourage smallholder groups as creditors to adopt sustainable practices. The banks need to adopt credit risk mitigation instruments to avoid negative impacts [49]. Before funds and credit are disbursed, it is necessary to ensure that the smallholders groups implement environmentally friendly methods and grow palms without clearing forests.

3.3.2. Financial Support to Legalize Smallholder Lands

One of the most challenging factors facing smallholders in becoming ISPO certified is the unclear and illegal status of the lands where they grow the palms. As indicated earlier, most smallholder

plantations are located in state forests. Jelsma and Schoneveld [50] stated that the oil palm smallholders have been discouraged from formalizing their ownership rights due to the perceived illegitimacy of informal claims, high cost and difficulty of obtaining land certificates. Therefore, the CPO fund is expected to overcome this situation by giving a priority use of the fund to help smallholders clarify the particulars of their land and become ISPO certified. The CPO fund can be used to solve the land legality problems of smallholder oil palm plantations through a supporting land certification process that can be in the form of a formal certificate known as the Ownership Rights Certificate (SHM) and other documents of land ownership that have less legal force such as a proof of land ownership letter (SKT)/Sporadik/Girik (Letter D)/Sale and Purchase Certificate (AJB).

3.3.3. The Allocation of Oil Palm Funds in Relation to Grace Periods after Replanting

The requirements to disburse CPO funds for smallholders include the provision of a supplementary budget for financing the advanced stages of replanting activity. The supplementary budget can come from the smallholders' own savings or as loans from financial institutions such as banks. Therefore, before the CPO funds are disbursed, an agreement will be made between the BPDPKS, financial institutions or banks, and smallholder groups as potential recipients of CPO funds. This is due to the gap in the amount of CPO fund allocation, which is only IDR 25 million/ha, while the government standard of replanting costs is IDR 50–60 million/ha. The standard of replanting costs should be fulfilled to ensure that the results of the replanting program give high crop productivity, by using good quality seeds, carrying out maintenance, and using good agriculture management practices.

To support the financing of smallholders, the government provides community business credit facilities (Kredit Usaha Rakyat-KUR) with an interest rate of 7% per year with a grace period of five years. There is special credit available for the community oil palm program (PSR), which is intended to help finance the replanting of the smallholders' oil palm plantations [39,51]. The requirements of self-financing for the disbursement of CPO funds through the cooperation with banks has certainly become a burden for the smallholders, particularly when they have to pay interest after the grace period. During the grace period, their plantations have not yet produced anything; however, the interest rate after the grace period will be charged accumulatively at the time when the plantation has produced. In order to reduce the burden for the smallholders, CPO funds should also be allocated to pay the interest that accumulates in the grace period. Thus, the CPO fund should be able to subsidize the interest rate in the grace period.

In addition, the CPO fund was also proposed as capital assistance for smallholders to undertake productive activities as an alternative livelihood during the grace period. It was expected to become an alternative source of income for smallholders. This is in line with the findings of Sahara et al. and Bronkhorst et al. [15,17], stating that there needs to be an alternative income given to independent palm oil smallholders in a grace period. The use of CPO funds to create alternative income for smallholders in the grace period can be synergized with village fund assistance programs from government, particularly to determine the types of activities and livelihoods that are suitable for the grace period. Another thing that is proposed as a policy option is that there is a need to consider the existence of a bank guarantee from the CPO fund for smallholder oil palm replanting credit. Hence, banks that provide credit have a guarantee and the credit disbursement is not hampered.

The period of financing or credit from a bank or financial institution must also be relatively long, at least 25 years to cover the period of financing when the smallholders accomplish the next period of replanting. By providing access to long-term financing, farmers will be encouraged to replant and maintain their production levels and provide opportunities to increase their income. Thus, they tend not to expand their plantation expansion by encroaching on forests [17].

3.3.4. Adjustment of Replanting Costs

In relation to the requirement of self-financing in undertaking advanced replanting, which becomes a burden to smallholders, it was proposed that the CPO funding should be disbursed in accordance

with the general costs faced by smallholders in the field. Based on interviews carried out in several regions, smallholders stated that replanting costs were generally in the range of IDR 30–40 million/ha, slightly higher than the assistance offered by the CPO fund of IDR 25 million/ha or approximately 42% of the standard cost of oil palm replanting according to the Director General of Plantation (IDR 60 million/ha). For this reason, replanting assistance from the CPO fund is recommended to be increased to 60% of the government standard costs for replanting.

However, efforts are needed to ensure that replanting activities are in accordance with the standards of the government, which requires the using of certified seeds, forming a smallholder group and carrying out sustainable plantation practices according to the ISPO. If the portion of CPO funds for replanting is increased, it will open up opportunities for farmers who will then not be bound by loans from financial institutions.

The use of CPO fund as an incentive to finance replanting for oil palm smallholders is expected to increase the productivity of independent smallholders, and ultimately will help increase the income of independent smallholders. It is expected it will prevent the land expansion to the forest. The conditions that are expected with the assistance of CPO funds are presented in Table 3.

Table 3. Expected condition before and after the CPO fund program disbursements.

Indicator	Before	After
Land	Uncertified	Certified
Fund	Commercial interest	Subsidized interest
Seeds	Uncertified	Certified and have a certain quality
Production	2–3 tons CPO/ha/year	5–6 tons CPO/ha/year
Land expansion	Tend to expand land to forest	Not expanding to the forest
Sustainability	ISPO uncertified	ISPO certified
Grace period assistance	No source of income in grace period	A source of income is available during the grace period

Source: Modified from innovative financing system [52].

4. Conclusions

There is the potential to use the CPO fund policy to incentivize smallholders to improve their crop productivity, help improve sustainability practices and prevent them from encroaching on forests. Gaps, however, were identified to occur between what is mandated in law and regulations concerning the intended use of the fund and how it has actually been used for various purposes. These gaps limit the effective achievement of the policy goals and particularly the intended use of the fund to promote replanting and sustainability practices among smallholders. In order to tackle this limitation and make the fund policy effective, it is recommended that rules governing the use of the CPO fund be strengthened by providing smallholders with productive capital assistance, particularly assisting them in going through grace periods after replanting. Costs for replanting assistance need to be adjusted to 60% of the replanting cost standards set by the government, which was originally set at 40%. The fund policy needs to be expanded, not only to support the replanting programs, but also to assist in land legalization and in facilitation of smallholders in becoming ISPO certified. To enable farmers to be eligible for CPO funds and ISPO certification, there is a need to encourage them to engage in farmer groups. It is also essential to strengthen the role of plantation services by enhancing the capacity of personnel and allocating financial resources.

These require political and technical commitments by the key actors affecting sustainable oil palm plantations of smallholders. Decision-makers allocating CPO funds must put a high priority on smallholders, and should develop a reliable database on smallholders so that any decision on fund allocation and intervention would be on target.

Author Contributions: Conceptualization, F.N.; Data curation, R. and G.K.S.; Formal analysis, F.N., G.K.S. and H.K.; Investigation, F.N. and R.; Methodology, F.N.; Project administration, F.N. and R.; Supervision, H.K.; Validation, F.N.; Writing—original draft, F.N., R., G.K.S. and H.K.; Writing—review & editing, F.N., R., G.K.S. and H.K.

Funding: This research was funded by USAID (USAID ASSISTANCE AGREEMENT No. 497-AA-030).

Acknowledgments: This research was supported by USAID through the Governing Oil Palm Landscapes for Sustainability (GOLS) project. The authors thank our colleagues from the Indonesian Ministry of Environment and Forestry's Research and Development Center for Social, Economics, Policy and Climate Change (P3SEKPI) and the Center for International Forestry Research (CIFOR) who provided insight and expertise that greatly assisted the research. They are also immensely grateful to all key informants affiliated with organizations and institutions at national as well as at local levels in Central and West Kalimantan for sharing their thoughts and ideas. Participants in focus group discussions and workshops that were organized as part of the research were also greatly acknowledged for their contribution to strengthening the policy recommendation options and arguments made in this paper.

Conflicts of Interest: The authors declare no conflict of interest.

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