

# Social intervention in improving smallholders welfare in realizing eco-friendly palm oil plantations

Umar Atik<sup>1</sup>, Rofikoh Rokhim<sup>1\*</sup>, and Nurul Rusdayanti<sup>2</sup>

<sup>1</sup>Department of Management, Faculty of Economics and Business, Universitas Indonesia, Depok, 16424, Indonesia

<sup>2</sup>School of Environmental Science, Universitas Indonesia, Jakarta, 10440 Indonesia

**Abstract.** The Indonesian government continues to strive to increase the production, productivity, and quality of oil palm. Several studies on the welfare impact have shown that some smallholders benefit greatly in terms of income. Meanwhile, there are challenges to improve the welfare of smallholders, such as financial and knowledge barriers. Therefore, this article aims to identify social interventions' contribution to improving farmer welfare and realizing environmentally friendly oil palm plantations. Social intervention can be interpreted as an effort to help in the form of planned changes to individuals, groups, and communities, which can come from government, corporate, third parties, communities, and individuals. This article contributes to define and gather social intervention perspective in improving smallholder welfare. The study employs a method approach combining literature review and descriptive analysis. These social intervention approaches, ideally embedded in a community strategy developed by the stakeholders in palm oil practice, have the potential to improving smallholder's welfare in realizing eco-friendly palm oil plantations. To complement previous researches, this research is important because it is specific to enhance smallholder welfare through social intervention approach. Social intervention can be a form of law intervention, financial scheme and support, community programs, and corporate social responsibility (CSR) programs. Through that can help palm oil farmers, especially smallholders, to increase productivity while paying attention to environmental sustainability.

## 1 Introduction

Palm oil is currently still a mainstay commodity and has the largest biomass in Indonesia. Palm oil plantation owners are ranging from State Plantation (PBN), Private Large Plantation

---

\* Corresponding author: [rofikoh.rokhim@ui.ac.id](mailto:rofikoh.rokhim@ui.ac.id)

(PBS), and Smallholder Nucleus Plantation (PIR) [1]. Indonesia and Malaysia produce about 85% of the palm oil traded worldwide, with estimated demand growth of 5% per annum [2].

Jambi Province is one of the areas known for its extensive palm oil plantations in Indonesia. Jambi was recorded as the second largest plantation crop after rubber in the past two decades. The expansion of palm oil plantations in Jambi continues to occur until it reaches more than 500 thousand hectares with the highest area in Muaro Jambi Regency, 96,587 hectares in 2018. The number of oil palm farmers in Jambi has also been recorded to have increased to reach the second largest plantation farmers since 2005 until the time. Palm oil production in Jambi in 2018 was recorded to be seven times greater than the production of rubber commodities, reaching more than 2.2 million tons [3]. The growth in demand for palm oil has increased. Therefore, Indonesian Sustainable Palm Oil (ISPO) and Roundtable on Sustainable Palm Oil (RSPO) certification requirements have increased to make the performance of palm oil plantation more sustainable in terms of production unit and development. Implementing actions that can support the increase in sustainable palm oil production and preserve and conserve biodiversity is needed for oil palm farmers [4].

The Indonesian government continues to strive to increase the production, productivity and quality of oil palm through several programs offered, including (a) increasing production through intensive programs (providing fertilizers, using quality certified seeds, and other inputs), extensification (utilizing available land), and rejuvenation (plantation revitalization) (b) increasing productivity through the development of palm oil plantation with government contributions and increased productivity missions to produce 35 Fresh Fruit Bunches per hectare per year, (c) improving product quality through the implementation of oil palm development with a sustainable palm oil label and product standardization such as ISPO certification, RSPO, and so on [4]. The assessment of the treatment of farmers in Jambi has been practicing sustainable palm oil plantations by considering economic, ecological, and social dimensions. The status of sustainability from the economic dimension (farmer income and welfare) and social (education and planting tradition) is sustainable, and the ecological dimension (planting other trees) is entirely sustainable [1].

Palm oil plantations are often in conflict with the environment due to plantation expansion which often leads to increased greenhouse gas (GHG) emissions. Data from 1988 to 2014 recorded an increase in palm oil plantation in one area in Jambi province showing an increase in the area of palm oil plantations reaching 6 times from the initial year, while the forest area had decreased by more than 50% [5]. The Indonesian government has made efforts to make plantation activities and oil palm production more environmentally friendly and sustainable. The government sets a national target to exploit oil palm biomass residue's full potential for renewable energy and emission reduction. However, policy implementation is progressing slowly. In 2015, Indonesia produced around 150 Mt of residual oil palm biomass, a significant source of GHG emissions. At the same time, it will result in lost opportunities for economic benefits from bio-based products that can be further processed to have added value [6]. Efforts to realize sustainable and environmentally friendly oil palm plantations cannot only rely on the government, it requires the involvement of many parties, namely, individual farmers themselves, communities, organizations, or companies.

Smallholders in Jambi are generally not aware of the ISPO program except with the existence of promotion and counseling from the government, but, although not known, most of the smallholders have implemented palm oil management actions that comply with ISPO standards. The practices used are not few and not fully standard because not all ISPO practices directly benefit smallholders. Therefore, a strategy for implementing ISPO for smallholders requires a gradual process and requires financial and technical support. The introduction of ISPO practices on a large scale can be seen as an intermediary step towards achieving internationally recognized certification of Indonesian palm oil [7]. Another study reveals that smallholders' main problems and challenges in implementing sustainable palm

oil. The results of the identification of gaps between the standard requirements in sustainable palm oil and current practices show that there are still gaps in both the special requirements that are difficult to meet and the basic requirements such as land ownership and plantation management [8].

In Indonesia, oil palm has increased wealth and food balance for poor farming families. The adoption of oil palm has improved the quality of households among smallholders in Jambi Province. One of the reasons for adopting palm oil plantation is small quantity labor to use for plantation processes, which give the farmers or planter to involved other economic activities [9]. Several studies on the welfare impact have shown that some smallholders benefit greatly in terms of income. The challenges associated with the palm oil industry vary particularly for smallholders making certification like this that can help improve smallholders' welfare and promote cooperation between smallholders and companies. So, there is cooperation and shared responsibility between various stakeholders in improving the welfare of small farmers. The welfare is not only from a financial or socioeconomic perspective of farmers but also other dimensions of basic human welfare such as physical and natural or socioecological [10].

As one of the main suppliers of palm oil, it is very critical to optimize palm oil production in Indonesia, both by extending palm oil plantations without deforestation and by increasing palm oil cultivation. The benefits of oil palm in improving the welfare of farmers are certainly very beneficial, but it has many challenges. Efforts to improve the welfare of oil palm farmers require social intervention from both groups and communities, which can come from the government, companies, third parties, communities and individuals. These efforts can take the form of developing farmer knowledge, funding for palm oil cultivation, and so on, which can increase the productivity and welfare of farmers [6].

Another study revealed that Jambi Province still needs extra challenges in achieving certification standards for palm oil plantation sustainability. The challenges faced in this case is that smallholders often do not have a good understanding of their position in the oil palm business. So, when stakeholders make decisions about their palm oil plantation, smallholders are more likely to impact these decisions. That indicates there is information, knowledge, capability gap in smallholders [11]. Therefore, the large potential and opportunities, as well as the many challenges faced by oil palm farmers in Jambi, require further identification of the contribution of social interventions in improving farmer welfare and realizing environmentally friendly palm oil plantations. This research aims to identify social interventions' contribution to improving farmer welfare and realizing environmentally friendly palm oil plantations.

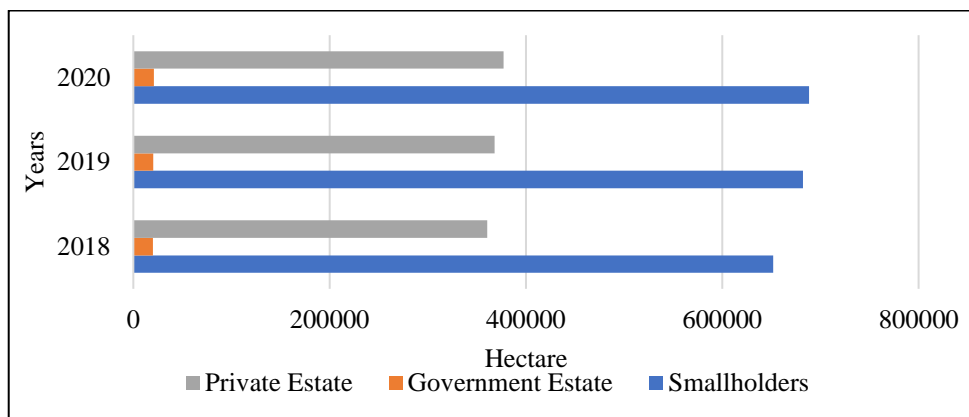
## **2 Method**

This article was conducted by reviewing previous literature to identify the contribution of social interventions in improving farmer welfare and realizing environmentally friendly palm oil plantations. The study area analyzed and reviewed was Jambi Province with a major focus on smallholder farmers. The documents reviewed include government documents, newspapers, journals, and books. The data obtained from the documents are then reviewed and analyzed.

The research followed a method approach between literature review and descriptive analysis. A comprehensive understanding of palm oil potential, identification of stakeholders and social intervention was acquired through literature analysis. To associate the connection among the stakeholders, descriptive analysis was addressed. The analysis contributes to add perspective in terms of overcoming problems solving of economic, social and ecology in palm oil smallholders.

### 3 Results and discussion

The increase in the number of smallholders in Jambi every year makes smallholders one of the stakeholders who greatly influence the development of the palm oil sector. In Fig. 1 it is seen that smallholders in Jambi own about 68% of the total oil palm plantation land found in Jambi. It is also estimated that there is a 6% increase from 2018 - 2020 for land owned by smallholders in Jambi. Therefore, due to the amount of land dominating in Jambi, smallholders' management of conflicts becomes very important to do. The increase in the number of oil palm lands owned by farmers needs to be accompanied by efforts to improve the quality of the farmers. Social intervention is one way to improve the quality of smallholders to achieve prosperity and sustainable palm oil practices.



**Fig. 1.** Oil palm area in Jambi 2018-2020 [12].

Oil palm farmers in Indonesia generally have 2 hectares of land to cultivate. However, there are some problems faced by palm oil farmers. One of them is the low productivity of palm oil plantations compared to palm oil plantations under private and government [13]. That can be addressed through more available capital, adequate agricultural counseling, and technology transfer for better planting. Thus, smallholder productivity is able to increase [14]. The low productivity conditions are not necessarily charged to the capabilities of palm oil farmers. Other factors that cause low palm oil productivity are the condition of plantation land, infrastructure, management, and handling after harvesting. Thus, social intervention is needed to palm oil farmers to increase productivity while paying attention to environmental sustainability.

Social intervention can be interpreted as an effort to help in the form of planned changes to individuals, groups, and communities. Changes must be measured and evaluated as a form of accountability to see what changes occur. The involvement of farmers is one factor in realizing the sustainability of palm oil plantations. Participation from various parties to realize environmentally-friendly palm oil plantations is indispensable. Social intervention is one of the efforts to improve farmers' welfare to realize environmentally-friendly palm oil plantations.

This form of social intervention can come from a variety of sources or stakeholders. One form of social intervention is from the Non-Government Organization (NGO). Social intervention by NGOs contains at least several dimensions such as (1) the creation of an engagement space of the stakeholders so that the parties know the relationship between different dimensions that are of concern to each (2) the creation of a connecting room so that the parties can fully participate and increase the empowerment of the parties (3) the creation

of interdependence spaces to become the basic foundation for the governance structure [15]. Social intervention presented by NGOs can be the initial basic structure so that the parties' involvement is recognized. Recognition of the parties' presence and existence is necessary so that each party knows the role and can see different perspectives of interests to achieve the same goals.

The Indonesian government has implemented social interventions to help the sustainability of palm oil plantations. One form of intervention by the government is through a finance scheme. The government provides sub-provision and credit or regulates financial institutions in the provision of [16]. Intervention in the form of subsidies is also carried out by the Thai government. They provided financial subsidizes with low-interest rates to increase palm oil production [13]. Another form of intervention by the government is through regulatory intervention and law enforcement. Some of the government interventions of concern to be applied to palm oil farmers are land ownership arrangement in forest areas, the introduction of land certification programs, value-chain improvement programs in the raw material market, and investment in field extension [17].

Social interventions can also arise from private parties or corporations. One form of social intervention from the company is corporate social responsibility (CSR). CSR activities are seen as a commitment of the company that voluntarily fulfills the responsibilities that arise from the community's expectations for the activities carried out by the company. CSR becomes a mechanism to bridge business development and community relationships. CSR also plays a role in improving its collaboration with governments, institutions, and other private parties to ensure long-term economic sustainability [18]. Generally, CSR's goal is to make a positive contribution to the development of the environment and the community around the company. That can help improve the development of the area for the better, improve education, and improve community welfare [19]. CSR implementation contributes to the fulfillment of people's needs and enhances the company's reputation. Nevertheless, the CSR strategy's implementation should involve the company's shareholders considering the activities carried out in the long-term and considering maximizing the company's profits in the long term [20]. The private sector, including companies affiliated with oil palm farmers, can provide social intervention through assistance. Smallholders affiliated with the company were better able to cope with certification challenges, particularly as they received technical assistance and knowledge transfer. This is different from independent farmers who do not receive assistance. A total of 57% of farmers attended ( $n = 194$ ) in the sample never received training or extension services; those who receive training often only receive it once [21]. Social intervention in the form of assistance by the private sector is able to increase understanding of oil palm farmers in the direction of sustainable palm oil practices.

Social interventions made to palm oil farmers are not only a direct benefit in the form of palm oil plantation techniques. However, there are interventions related to the sustainability of palm oil combined with livestock farming. A company in Sumatra in 1996 initiated an empowerment program. Each household head is given three farm animals, where the animal is herded in the plantation of palm oil, with additional feeding from palm oil waste and kernel cake. By 2003, the number of livestock in the scheme had doubled. Meanwhile, the area of harvest per worker had increased from 10 to 15 ha, and their associated income had increased [22]. Thus, the implementation of social interventions can increase economic potential.

One of the efforts towards the sustainability of palm oil plantations is the fulfillment of ISPO and RSPO certification. This certification does not only assess palm oil mills but also oil palm farmers. In fact, not all oil palm farmers can meet certification requirements. Smallholders who are already RSPO certified can meet certification requirements of up to 70%, but non-certified smallholders have the highest gap between RSPO requirements and field practice [23]. Based on research conducted by Rietberg and Slingerland, there are 56 audit findings in 10 recertification reports for independent farmers [24]. The biggest

challenge of the RSPO certification requirements for palm oil smallholders is Principle 2 (regulation and law), Principle 4 (conservation and environment) and Principle 6 (community and employee) [23]. Given the limited knowledge of the certification requirements, assistance is necessary for oil palm farmers. Assistance and technical assistance in palm oil plantation management for smallholders can increase agronomic productivity [25]. Assistance is a form of social intervention that can be carried out by the government, NGO or private institutions in supporting oil palm farmers towards sustainable certification.

The obstacles faced in the implementation of social intervention are the level of sustainability. In fact, social intervention becomes a long-term effort and becomes a sustainable system. However, some concepts of programs from social intervention meet challenges in terms of funding support. Mentoring to farmer groups often encounters limits in terms of funding and duration. Indeed, the assistance provided is only the initial capital that must be developed by the farmer group and not become a dependency. Nevertheless, programs built as a form of social intervention must also be an integrated program in terms of legality, sustainability, and productivity to not stand alone. Social intervention needs to return to the main goal of making positive and accountable changes. Thus, there will be a solid foundation when social intervention encounters limitations in its implementation. A solid social foundation will realize community development. By focusing more on community development, instead of focusing solely on economic development, the communities can integrate land-use planning [26].

The development of the palm oil farming community aims to encourage farmers' ability and independence in palm oil plantation management activities so that it can be in line with the sustainable requirement of the stakeholders in palm oil [27-29]. Social intervention at the community level of palm oil farmers can be one of the methods used in the framework of farmer development through a series of strategies and processes carried out by the interventionist based on a desire and commitment to help for the progressive improvement of farmer welfare. There are changes in local communities' living conditions, especially in the social and economic fields, through applying social intervention models in the development of local communities. Among others are increased community income, clear livelihoods, regional development, and relationships, or social interactions are intertwined because conflict can be reduced [27].

## **4 Conclusion**

The increase of palm oil plantations area in Indonesia with low productivity of smallholder plantations has an impact on the life and survival of farmers. However, farmers' limited ability, especially smallholders, to get better resources to develop their plantations required social intervention from governments, companies, communities, or related individuals. Social intervention can be in the form of financial assistance, commitment to environmental and community development, and supporting their plantation support process. Social intervention in the form of assistance by the stakeholders is able to increase understanding of palm oil smallholders towards sustainable palm oil practices. The implementation of social interventions can increase economic potential. Support in the form of social intervention will encourage the process of growing farmers to be better and produce high plantation yields by minimizing environmental issues that will arise from the palm oil plantation process. Further studies are needed to show the impact of the studied social intervention in an Information and Communication Technology (ICT) approach. A suggestion would be to elaborate the correlation among stakeholders in integrated social intervention through ICT. Thus, it can be seen the ideal type of social intervention approach according to the characteristics of the smallholder's region.

## Acknowledgements

This research is funded by Program Penelitian Dasar Unggulan Perguruan Tinggi (PDUPT) Kementerian Riset dan Teknologi/Badan Riset dan Inovasi Nasional (KEMENRISTEK/BRIN)-Universitas Indonesia with contract number 8/E1/KP.PTNBH/2020 and 255/PKS/R/UI/2020.

## References

1. Rosyani, Edison, Asmadi, IOP Conf. Ser. Earth Environ. Sci. **314** (2019)
2. Y. Kunz, F. Otten, R. Mardiana, K. Martens, I. Roedel, H. Faust, Indonesia Soc. Sci. **8**, 1-28 (2019)
3. Badan Pusat Statistik, Provinsi Jambi Dalam Angka 2019 (CV Dharmaputra, Jambi, 2019)
4. Direktorat Jenderal Perkebunan, Statistik Perkebunan Indonesia Kelapa Sawit 2015-2017 (Sekretariat Direktorat Jenderal Perkebunan, 2017)
5. A. Nurwanda, A.F.M. Zain, E. Rustiadi, Procedia - Soc. Behav. Sci. **227**, 87–94 (2016)
6. F. Harahap, S. Leduc, S. Mesfun, D. Khatiwada, F. Kraxner, S. Silveira, Energies **12**, 1-24 (2019)
7. Ernah, P. Parvathi, H. Waibel, Southeast Asian Econ. **33**, 291–316 (2016)
8. C. Brandi, T. Cabani, C. Hosang, S. Schirmbeck, L. Westermann, H. Wiese, Research Report Sustainability certification in the Indonesian palm oil sector: benefits and challenges for smallholders; Studies, No. 74 (Deutsches Institut für Entwicklungspolitik (DIE), Bonn, 2013)
9. M. Euler, V. Krishna, S. Schwarze, H. Siregar, M. Qaim, World Dev. **93**, 219–235 (2017)
10. T. Santika, E. Law, K. Wilson, F. St. John, K. Carlson, H. Gibbs, C. Morgans, M. Ancrenaz, E. Meijaard, M. Struebig, SocArXiv **4**, 6-20 (2020)
11. K. Martens, Y. Kunz, I. Rosyani, H. Faust, Soc. Nat. Resour. **33**, 634–650 (2020)
12. Direktorat Jenderal Perkebunan, Statistik Perkebunan Indonesia 2018-2020 (Sekretariat Direktorat Jenderal Perkebunan, Direktorat Jenderal Perkebunan, Kementerian Pertanian, Jakarta, 2020)
13. I. Mukherjee, B.K. Sovacool, Renew. Sustain. Energy Rev. **37**, 1–12 (2014)
14. S. Vermeulen, N. Goad, Towards Better Practice in Smallholder Palm Oil Production (International Institute for Environment and Development (IIED), London, 2006)
15. L. Pesqueira, P. Glasbergen, Playing the Politics of Scale: Oxfam’s Intervention in the Roundtable on Sustainable Palm Oil Geoforum **45**, 296–304 (2013)
16. E.P. Pramudya, O. Hospes, C.J.A.M. Termeer, Indones. Econ. Stud. **53**, 57–82 (2017)
17. I. Jelsma, G.C. Schoneveld, Mewujudkan Petani Kecil Sawit Mandiri yang Lebih Produktif dan Berkelanjutan di Indonesia: Pandangan dari Pengembangan Tipologi Petani Kecil (CIFOR, Bogor, 2016)
18. NEAC, New Economic Model for Malaysia – Part 1 (Percetakan Nasional Malaysia Berhad, Kuala Lumpur, 2010)
19. M. Ismail, S.N. Alias, R.M. Rasdi, Soc. Responsib. J. **11**, 109–130 (2015)
20. O. Falck, S. Hebllich, Bus. Horiz. **50**, 247–254 (2007)
21. C. Brandi, T. Cabani, C. Hosang, S. Schirmbeck, L. Westermann, H. Wiese, Sustainability Certification in the Indonesian Palm Oil Sector (Deutsches Institut für Entwicklungspolitik gGmbH, Bonn, 2013)
22. Z. Zen, C. Barlow, R. Gondowarsito, ANU Res. Publ. 1-25 (2005)
23. S. Hutabarat, M. Slingerland, L. Dries, J. Environ. Dev. **28**, 253–281 (2019)
24. S. Hutabarat, M. Slingerland, P. Rietberg, L. Dries, Int. Food Agribus. Manag. Rev.

- 21**, 681–700 (2018)
25. M. Euler, M.P. Hoffmann, Z. Fathoni, S. Schwarze, *Agric. Syst.* **146**, 111–119 (2016)
  26. O. Pye, J. Bhattacharya, *The Palm Oil Controversy in Southeast Asia A Transnational Perspective* (ISEAS Publishing, Singapore, 2013)
  27. A.A. Achmad, R.N. Nurwati, N. Mulyana, *J. Public Policy* **5**, 111–122 (2019)
  28. A. Suratin, M. Karuniasa, S.W. Utomo, *J. Environ. Sci. Sustainable Dev.* **1**, 1 (2018)
  29. I. Budiani, *ASEAN J. Community Engagement* **4**, 1 (2020)