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Achieving Sustainable Development Goals – An NDPE and Certification Strategy for Independent Smallholder for Oil Palm

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[ABSTRACT / EXECUTIVE SUMMARY]

Millions of smallholders depend on palm oil for their livelihoods, but their adaptation to sustainable agriculture practices are hindered by access to resources, knowledge, and awareness of sustainability. Addressing these challenges required an integrated approach to engaging in complex sustainability issues while empowering stakeholders. The Center for Sustainable Small-owners (CSS) was established to facilitate and empower Independent Smallholders (ISH) in promoting ethical and responsible production of oil palm with a commitment to no deforestation, no new plantation on peatlands, and no exploitation (NDPE) in the supply chain. The CSS approach is to execute it through two strategies i.e., empowering communities, ensuring sustainability through certification and compliance building farmer associations to safeguard their interests, and sourcing responsibly ensuring ethical and sustainable oil palm production while improving livelihoods through yield intensification. The research aims to demonstrate how through such initiatives CSS has been able to support sustainable development goals (SDG). Through the following six activities viz. Traceability and Verification, Training, Certification and Compliance, Livelihood Improvement, Community Development, and Monitoring and Guidance. CSS contributes directly to SDG 2, 8, 12, 15, and 17.

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Achieving Sustainable Development Goals – An NDPE and Certification Strategy for Independent Smallholder Farmers for Oil Palm

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Abstract: Millions of smallholders depend on palm oil for their livelihoods, but their adaptation to sustainable agriculture practices are hindered by access to resources, knowledge, and awareness of sustainability. Addressing these challenges required an integrated approach to engaging in complex sustainability issues while empowering stakeholders. The Center for Sustainable Small-owners (CSS) was established to facilitate and empower Independent Smallholders (ISH) in promoting ethical and responsible production of oil palm with a commitment to no deforestation, no new plantation on peatlands, and no exploitation (NDPE) in the supply chain. The CSS approach is to execute it through two strategies i.e., empowering communities, ensuring sustainability through certification and compliance building farmer associations to safeguard their interests, and sourcing responsibly ensuring ethical and sustainable oil palm production while improving livelihoods through yield intensification. The research aims to demonstrate how through such initiatives CSS has been able to support sustainable development goals (SDG). Through the following six activities viz. Traceability and Verification, Training, Certification and Compliance, Livelihood Improvement, Community Development, and Monitoring and Guidance. CSS contributes directly to SDG 2, 8, 12, 15, and 17.

Keywords: Sustainable Development Goals (SDG), Good Agriculture Practices (GAP), Independent Smallholders (ISH), RISS Certifications, Community Engagement

1. Introduction

Malaysia is a major producer of vegetable oil. In 2020, Malaysia account for 25.8 percent of the global palm oil production and 34.3 percent of the global palm oil export (MPOC, 2023). Palm oil has been the major economic driver for Malaysia, contributing significantly to its economy. The sector has led to job creation, foreign exchange earnings, and economic development, particularly in rural areas of Malaysia. Between January and June 2022, palm oil generated RM44.63 billion of export income to Malaysia. This figure accounts for 66.1 percent of the total export earnings in Malaysia (Azuar, 2022). Hence, the palm oil industry helps to mitigate the impact of urbanization by providing more equitable economic opportunities in rural areas. Businesses, academics, and researchers have made great efforts in researching, developing, and implementing yield intensification strategies and Good Agriculture Practices (GAP) in palm oil. These initiatives could enhance productivity while minimizing the environmental impacts of palm oil production. Such efforts have been intensified to address the sustainability concern of palm oil production. For example, Malaysian Sustainable Palm Oil (MSPO) and Roundtable on Sustainable Palm Oil (RSPO) have been established to accentuate all palm oil producers to adhere to stringent sustainability criteria. Hence, any efforts to intensify yield should utilize agriculture practices such as precision agriculture practices and fertilizer management while complying with environmental standards. The intention of this study is to examine the impacts of the programs like CSS in the realm of sustainable development goals (SDG) and promote the adoption of sustainable practices in the palm oil industry, especially among Independent Smallholders (ISH).

ISH can adversely affect environmental sustainability with practices such as unsystematic fertilizer application and harvesting practices (Ab Rahman, et al., 2008). ISH also encounters challenges such as high production costs, low productivity, and lack of market access. Several studies such as Idris (1998) were looking at the planned approach in the future development of ISH. Poor planning among ISH is also a major attributor for poor yield, 65 percent of surveyed ISH did not plan their activities leading to inorganized and unsystematic farming activities, which resulted in low FFB yield (Ab Rahman, et al., 2008). A planned approach can inculcate farmers with the proper agronomic and non-agronomic methods in managing farms to increase yield while improving their livelihood. This research highlights that ISHs have the potential to levelling FFB to the industry level while preserving environmental sustainability with proper planning and management. As such, it brings up the importance of external collaboration and support in facilitating the growth and development of ISHs. Hence, it serves as the research objective of this paper to assert the importance of NGOs in supporting ISHs by providing them with technical support, market access, training and guidance, and digitalization tools. NGOs like CSS can play a crucial role in addressing the challenges faced by ISH.

2. Literature Review

There is a lack of research on the sustainable development of oil palm among smallholders. Data on the adoption and implementation of sustainable management practices among ISH is still scarce (Mohd Hanafiah et al., 2022). Brandi et al. (2015) concurred with this viewpoint that more research should be conducted on examining the certification of ISH. Mohd Hanafiah et al (2022) also assert that research on sustainable development in palm oil lacks in-depth and long-term data; thus, it is unable to offer more scalable and applicable solutions. Hence, the Centre for Sustainable Small-owners (CSS) is filling this gap by promoting Good Agriculture Practices (GAP) while uploading sustainability commitments to independent smallholders. NGOs like CSS can collect and analyse this data across time to provide insight into GAP implementation and livelihood improvement for ISH. These results benefit policymakers in promoting the best practice of sustainable management practices among ISH. To contribute to the literature on smallholders, this article focuses on the implementation strategy on how to assist ISH in their sustainable journey in achieving SDG.

Certifications such as RSPO and MSPO are more effective shall they intergrade ISH in the scheme as more than 40 percent of global palm oil is produced by smallholders. Sustainability certificates offer recognized pathways for consumers to purchase sustainably produced products (Watts et al., 2021). Hence, certifying smallholders is a complementary instrument for reducing negative environmental impacts (Brandi et al., 2015). The majority of surveyed smallholders are willing to comply with certification guidelines such as reduction in agrochemicals pesticides and fertilizer (Saadun et al., 2018). Turning now to understanding barriers faced by smallholders in integrating innovative standards like RSPO certification, Lowitt et al. (2015) found that lack of access to knowledge, information, and market is the key barrier to smallholder agriculture innovation. Moreover, Watts et al. (2021) have identified several challenges in certifying farmers in oil palm; these challenges are limited capacity, lack of documentation, and traceability. Hence, while a considerable number of smallholders show eagerness to participate in environmentally-friendly palm oil certification schemes, various obstacles must be

addressed. To make certifications like RSPO and MSPO more effective, it is imperative to have a robust certification strategy that empowers ISH with the necessary knowledge and resources to embrace sustainable practices.

Like many agriculture sectors, the palm oil sector has been encountering sustainability challenges and climate change risks. Except for upholding the commitment to protect forest resources and tropical biodiversity within the context of palm oil cultivation (Koh and Wilcove, 2009), little can be done to make oil palm more hospitable for biodiversity. In that a growing awareness of the need of producing oil palm with a minimum environmental cost. The progressive nature of the oil palm sector allows a more inclusive approach to developing alternative mechanisms that support environmentally sustainable and socially responsible standards across its supply chain (Nagiah et al., 2013). Besides, Unjan et al. (2017) found that oil palm has higher out-of-bounds probabilistic risk than rubber with respect to rainfall, rainy day, and humidity. Such elements are examples of physical risks facing farmers such as temperature and rainfall increases can adversely affect the yield. Paterson and Lima (2018) contend that climate change may reduce climatic suitability for worldwide oil palm production and reduce the optimal condition for the crops. Hence, Zainal et al. (2012) predicted that the oil palm income would decline 341.29, 127.43, and 51.80 MYR/ha by 2029 for Peninsular Malaysia, Sabah, and Sarawak.

3. Research Design

3.1 History of CSS

The Centre for Sustainable Small-owners (CSS) is hosted and operated by the Asia School of Business endorsed by Procter & Gamble (P&G) in 2018. It is a continuation of the P&G Smallholder program established in 2015. CSS focuses on establishing a one-stop resource center in providing practical solutions to challenges encountered by ISH. It aims to sustainably increase fruit yield while improving farmers' livelihoods. Hence, the primary objective of CSS is to ensure the ethical and responsible production of oil palm while upholding the commitment to No Deforestation, No Peat, and No Exploitation (NDPE) policy.

3.2 Primary Data Collection

CSS grouped 3 sets of corresponding farms, Check Farm, Core Learning Farm (Core Lefa), and Primary Learning Farm (Primary Lefa). Each Core Lefa is paired against Check Farm to quantitatively examine the impact of GAP implementation. To reduce bias, Core Lefa and Check farms with similar field characteristics were paired for comparison. Check farms follow usual ISH practices where farms continue old practices without adopting Good Agriculture Practices or observing any recommended sustainability standards. Core Learning farms were selected among participating ISH to advocate for GAP implementation. Core Lefa would receive additional technical support. Primary Lefa implements GAP but without a corresponding pair with a Check farm. CSS's agronomy team provides guidance on GAP implementation and collected agronomic and non-agronomic data from farmers. Some farms are managed by contractors. Hence, the three primary sources of data are farmers, contractors, and laboratories. Data collected includes yield records, expense and cost records, fertilizer records, farm activities records, chemical records, farmer and farm profiles, mechanical weeding, and training record. Collected agronomic data such as foliar and soil health would be tested in the lab annually and biannually. Besides, GAP data such as farm information on palm status, nutrient data, number of green fonds, disease information, and fond arrangement data is collected four times per year.

3.3 Certification Strategy

CSS facilitates certification of ISH with documentation, training, traceability, monitoring, verification, and support services. One challenge encountered by many ISHs lacks documentation of their farms. CSS also helps farmers to verify their documents such as land titles, fertilizer application, and pesticide use to address their compliance challenges. Besides, NGOs like CSS can offer support services for smallholders to assist them in meeting the technical requirement of certification. Hence, CSS has established PERTANIAGA, which is registered under RSPO's Ordinary-Oil Palm Growers category, to create better value and enhance learning activities for ISH. PERTANIAGA aggregated sources of resources and promote them to ISH. For example, with CSS assistance, PERTANIAGA introduced RSPO certification and replanting assistance to ISH. CSS offers training to ISH to close the knowledge gap with intensive preparation for certification. Moreover, CSS plays a vital role in assisting ISH to trace the source of Fresh Fruit Bunch (FFB) supply and ensure these sources complied with sustainability standards throughout the supply chain.

3.4 Sustainability Diffusion

The other purpose of CSS is the diffusion of sustainable palm oil, which involved advocating policies and practices that uphold the commitment to support sustainable practices in the palm oil industry. One common challenge of independent smallholders (ISH) is the fragmented nature of ISH, hindering the adoption of sustainable palm oil practices. To address the fragmented nature of ISH, CSS launched a diffusion program, which strives to raise awareness of the importance of sustainable and good agricultural practice (GAP) to 8000 farmers. Consequently, this program can promote collective action and collaboration with the bigger community of smallholders. As a result, it brings together smallholders in facilitating knowledge sharing, creating awareness, and contributing to sustainable development goals (SDG).

4. Results

This report outlays the contribution of CSS to five sustainable development goals, namely SDG 2, 8, 12, 15, and 17. In addition to these SDGs, palm oil also brings additional health benefits to health. In an experiment conducted in China involving 40 males aged between 18–20-year-old, half of them were given a soybean oil diet while the other half were given pal. After 6 weeks, individuals who intake a palm oil diet did not experience a significant increase in their cholesterol or lipoprotein while those who consumed soybean oil suffered from an increase in cholesterol level (Zhang et al., 2003). Besides, red palm oil can improve vitamin A and β -carotene levels (Giri & Bhatia, 2020). As such, palm oil can enrich individual nutrients with less health hazards.



Figure 1: CSS Contributions to SGD

4.1: SDG 2: Zero Hunger

SDG 2 goal is to create a world free of hunger by 2030 to achieve food security and improve nutrition. Palm oil is an important source of vegetable oil, which is a food staple for millions of people. It contains rich nutrients for a balanced diet. Palm oil is rich in fat and vitamin. Palm oil contains tocotrienols, which is a potent source of antioxidant. Other sources of vegetable oil such as corn, olive, and soybean oils do not contain tocotrienols. Moreover, palm oil contained plenty of polyunsaturated fats, which can reduce the risk of stroke, dementia, and the growth of brain tumors (Chola, 2022). Hence, palm oil can contribute to SDG 2 by providing an affordable source of vegetable oil. CSS can contribute to SDG 2.3, 2.4, and 2.a.

In regards to SDG 2.3, CSS is working on improving the livelihood of independent smallholder (ISH) or small-scale food producers by helping them to increase farming productivity and income by increasing access to market and technical collaboration. Participated farms would receive a 4-month hands-on training on good agriculture practices and farm management to improve yield and facilitate claims of premium.

Parallel to SDG 2.4, CSS ensures sustainable food production. It includes not overusing inputs for short-term benefits. CSS endorses an eco-centric production of food. One key takeaway from CSS is encouraging ISH in using optimal input such as fertilizer, pesticides, and herbicides which could have negative impacts on the local environment while maintaining the output. According to RSPO, improper usage of agrochemicals could endanger the health of farmers and the environment (Brandi et al., 2015). We encouraged our farmers to use natural methods of pest control like biological pest control instead of chemical pesticides and herbicides. For instance, farmers have been encouraged to use goats and cows to eat the grass and temper on the red hole and reduce rats. Besides, some farmers use barn owls to control the population of rats. These eco-centric practices help to create may reduce pesticide usage and enhance biodiversity in the local ecosystem.

Finally, SDG 2.A, on increasing investment in agriculture research and productive capacity, CSS has been collaborating with many local institutions such as Universiti Teknologi MARA (UiTM) and Universiti Tun Hussein Onn Malaysia (UTHM) to further research on topics such as peat management and socioeconomic research. Such research is important to understand the opportunities and challenges of sustainable food production and develop effective intervention mechanisms that can achieve SDG 2. A.

4.2: SDG 8: Decent Work and Economic Growth

SDG 8 goal is about creating a decent work environment and economic development. The oil palm industry can create an economically, socially, and environmentally sustainable oil palm supply chain to improve gender equality and social inclusion (Mardiharini et al., 2021). Driven by economic liberalization, oil palm can increase economic activities, especially in rural communities. It provides job and market opportunities to rural communities and spur economic development of local economic.

8.3 on promoting development-oriented policies on micro-, small- and medium-sized enterprises, CSS has been supporting independent smallholders (ISH) in their journey of becoming more sustainable with planned agriculture activities. CSS helps micro-enterprises, especially ISH, to attain Malaysian Sustainable Palm Oil (MSPO) and RSPO Independent Smallholders Standard (RISS) certificates. In the process, ISHs gain new market knowledge and access with improvement in income and livelihood. For the first Core Lefa, farmers attained 183 percent marginal returns of investment. For every additional 1 dollar spent on Good Agriculture Practice, they would attain 183 of net income. Additional income allows ISH to invest in education, healthcare, and family well-being.

8.5 on improving productive employment for all genders and persons with disabilities. CSS empowers women in socioeconomics development. For example, 48 percent of CSS staff are women and women hold high positions within the CSS work structure. Besides, CSS also promotes women's participation in Community Leadership. More women in rural communities are given more social recognition in their role of promoting GAP. Women take up leadership roles in the ISH association and became role models for other farmers. Additionally, CSS is also dedicated to improving the livelihood of women. For example, 26 percent of RISS-certified farmers are women. CSS also has its social pillar in empowering gender equality and cultural diversity.

4.3: SDG 12: Responsible Consumption and Production

In ensuring the sustainable production of oil palm, CSS ensures the development of sustainable production practices. It aims to increase accountable and responsible practice in oil palm practices. CSS encourages farmers to record farming activities. Data collected deepen understanding of oil palm production and improve the decision-making process.

12.2 on achieving sustainable management and efficient use of the resource, CSS expands GAP to more smallholders. GAP has been instrumental in achieving and sustaining high FFB yield. GAP influences both “yield taking”, recovery of available mature bunches, and “yield making”, production of new bunches. Sustainable management of oil palm generates controlled practices to efficiently utilize the resource to maximize yield and minimize environmental impacts.

12.8 on providing sufficient information and awareness on sustainable development, CSS provides training on farm management towards sustainable palm oil production. Farmers would learn about best-in-class techniques and sustainable agriculture practices. At the same time, CSS offers guidance to ISH to improve and maintain oil palm plantations sustainably. CSS also explore knowledge-sharing of farmers to farmers in the Ambassador program, where CSS would empower certified to share their experience with other farmers for the development of sustainable production of palm oil practices. Empowering efforts include positive reinforcement

and certificates. Farmers are given social cognition for the positive change they have made in their fields. They are recognized for large events such as graduation, field days, and training. They also receive certification from CSS and ASB to openly showcase their commitment to GAP and sustainable development. It allows them to feel valued for their contribution to sustainability and produces a sense of accomplishment for their contributions to their society and terrestrial ecosystem. This positive reinforcement can foster a culture of continuous improvement and motivate farmers to become leaders in promoting sustainable development in the palm oil industry, especially among their peers.

4.4: SDG 15: Life on Land

CSS also responds to the call from Koh and Wilcove (2009) to demand greater transparency in land-use decisions and accountability from oil palm producers in its traceability function. 1350 smallholder farms have been tagged with GPS coordinators and 1933 ISHs have logged into the oil palm database. CSS also ensures Collection Centres complied with sustainability standards. Hence, 10 Collection Centres have been traced with sustainability scorecards. Besides, more than 2 million metric tonnes of FFB can be traced to the respective mill. Traceability pertinent to SDG 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” CSS and its farmers are committed to No Deforestation, No Peat, and No Exploitation (NDPE) pledge. This pledge shows CSS’s commitment to preserving and protecting biodiversity and sustainable use of terrestrial ecosystems in its operations. This aim aligns directly with SDG 15, which aims to halt biodiversity loss and promote sustainable management of terrestrial ecosystems.

On SDG 15.1, 15.2, and 15.5, CSS aligns these targets with functions in traceability, NDPE policy, and certification. In traceability, CSS traces, monitors, and certifies the farmers’ supply chain. This is to ensure that farmers have responsible procurement by NDPE policy. CSS also traces the location of the farmlands, ensuring that the expansion of the farm does not breach the NDPE pledge. The sustainability process includes verification, assessment, and documentation of High Conservation Value areas. Additionally, CSS also train farmers to be more transparent in their land-use decision and take action on local conservation efforts in the lands to which they operate. CSS also assists farmers in their journey toward RISS certification. RISS certification serves as a mark of credibility and proof of sustainable operation in oil palm. RISS certification also helps farmers to reduce the risk of land conversion and avoid biodiversity loss.

4.5: SDG 17: Partnerships for the Goals

SDG 17 pertains to strengthening partnerships for sustainable development. CSS promotes collaboration of oil palm between businesses, government, and farmers to encourage sustainability, improve livelihood, and develop the local economy.

On SDG 17.6, CSS partners with P&G, farmers, and PERTANIAGA to create positive impacts through knowledge sharing, and mobilizing financial and non-financial resources among the different stakeholders. PERTANIAGA is wholly owned by ISH, and created by CSS, to connect ISHs with local and international markets. It is established to support private small-scale farmers in promoting sustainable practices through MSPO and RSPO Palm Certification. Through collaboration with PERTANIAGA CSS offers peer-to-peer advice in improving the yield and quality of fresh fruit through the guidance of field officers and agronomists. As a result, . PERTANIAGA became the first ISH’s association in Malaysia to attain RISS certification. Currently, PERTIANAGA. PERTANIAGA has memberships of 527 ISHs. With these collaborations, CSS has successfully cultivated robust collaboration and garnered a commitment from diverse various stakeholders. Besides, CSS continues to leverage its alliances and remains positive to make lasting impacts on the communities it serves.

5. Conclusion

In conclusion, the Centre for Sustainable Small-owners (CSS) has emerged as a pivotal player in promoting sustainable development goals (SDG) within the palm oil industry, particularly among Independent Smallholders (ISH) in Malaysia. Through the important economic role, the palm oil sector plays in the local economy, it faces numerous sustainability challenges, particularly challenges in aligning its operation with SDG. It faces numerous challenges in climate change, sustainability, social equity, rural poverty, and environmental impacts. As such, this paper demonstrates NGOs could take instrumental roles in addressing these challenges and promoting sustainability in the palm oil industry. It empowered ISH to adapt GAP through knowledge sharing, technical support, market access, RISS certification, and training.

The impacts are evident across multiple SDGs such as SDG 2 (Zero Hunger), 8 (Decent Work and Economic Growth), 12 (Responsible Consumption and Production), 15 (Life on Land), and 17 (Partnerships for the Goals). CSS exemplifies a strong partnership with farmers, PERTANIAGA, and P&G to help farmers in their journey to increase yield and reduce local biodiversity loss. The program empowers women and ISH in socioeconomics development and improve their income. It contributes to food security by promoting palm oil as a reliable source of vegetable oil, rich in nutrients. It also increases resource efficiency and sustainable management practices for local communities. NGOs can actively empower farmers to embrace the NDPE policy and prioritize biodiversity protection as a crucial component in their operations.

Overall, CSS fills an important gap in research and data on sustainable palm oil among ISH, and its initiatives have significantly contributed to SDG. Hence, communities can benefit from cleaner rivers, lower climate change risk, and better access to the market. Furthermore, this paper presents an example of how an NGO in collaboration with various stakeholders, can create a lasting impact on sustainable palm oil. Ultimately, CSS's determination in creating positive impacts on people, society, the planet, and the economy can support responsible production, respect local communities, and protect biodiversity and the ecosystem.

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