



Roundtable on
Sustainable Palm Oil

A REPORT BY PRINCE OF SONGKLA UNIVERSITY FOR RSPO



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Oil Palm Development in Thailand: Trends and Progress of Sustainability Efforts in Palm Oil Production and Procurement

Summary Report

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The oil palm sector in Thailand, the world's third-largest producer of palm oil, is predominantly sustained by smallholders, who manage more than 70% of the country's total oil palm cultivated area. This poses a significant challenge to the industry's pursuit of sustainability. Acknowledging the pivotal role played by smallholders and in alignment with endeavors to enhance their participation, the Roundtable on Sustainable Palm Oil (RSPO) has developed and adopted the RSPO Independent Smallholder (ISH) Standard since 2019.

Following this progress, the RSPO has commissioned the Prince of Songkla University to conduct a comprehensive study to examine the palm oil sector in Thailand. This study aims to examine the palm oil sector in Thailand and assess its environmental, economic, and social impacts. Additionally, it aims to provide insights for the RSPO regarding the impacts of RSPO Certification, particularly within Thailand's smallholder dominated palm oil industry.

The objectives of this study are listed as follows:

1. Understand palm oil production and consumption trends and to review the environmental, economic, and social impacts in different parts of Thailand.
2. Evaluate the benefits and challenges, including associated costs, faced by Thai smallholders, with a particular focus on the implementation of the RSPO Independent Smallholder (ISH) Standard.
3. Identify the impact of RSPO Certification on the livelihoods of smallholders, drawing comparisons between RSPO Certified and non-certified farm households.
4. Policy implications related to productivity growth, forest protection, mosaic landscapes, land rights, and sustainability certification in the context of palm oil's impact on livelihoods and the environment will also be explored.
5. Provide recommendations for mitigating the environmental, economic, and social impacts of oil palm plantations in Thailand, with a special emphasis on enhancing the ISH Standard.

METHODOLOGY

The research process encompassed both desktop investigation and the gathering of primary data, as outlined in Table 1. The study focused on seven RSPO Certified smallholder groups in southern Thailand which are distributed across five provinces, as illustrated in Figure 1. Each smallholder group has been officially certified for a minimum duration of three years. They can be further categorised into two groups: well-established groups who obtained certification prior to 2019, and newly certified groups that achieved certification in 2019. The collected data was subjected to qualitative, descriptive, and quantitative analyses, including the application of a t-test for quantitative analysis.

Table 1: Overview of Primary Data Collection Methods and Participating Groups

Primary Data Collection	Groups Involved
Personal interviews	302 smallholders, comprising 158 certified and 144 non-certified individuals.
In-depth interviews	Key supply chain stakeholders, including partner mills of certified groups, auditors, the President of the Thailand Sustainable Palm Oil Alliance (TSPOA), consultants of certified groups, representatives of the GIZ project, and government officials at both provincial and national levels.
Focus group meetings	Organised seven focus group meetings involving certified group managers and committees.
RSPO meetings and seminars	Research team participated in RSPO meetings and seminars.

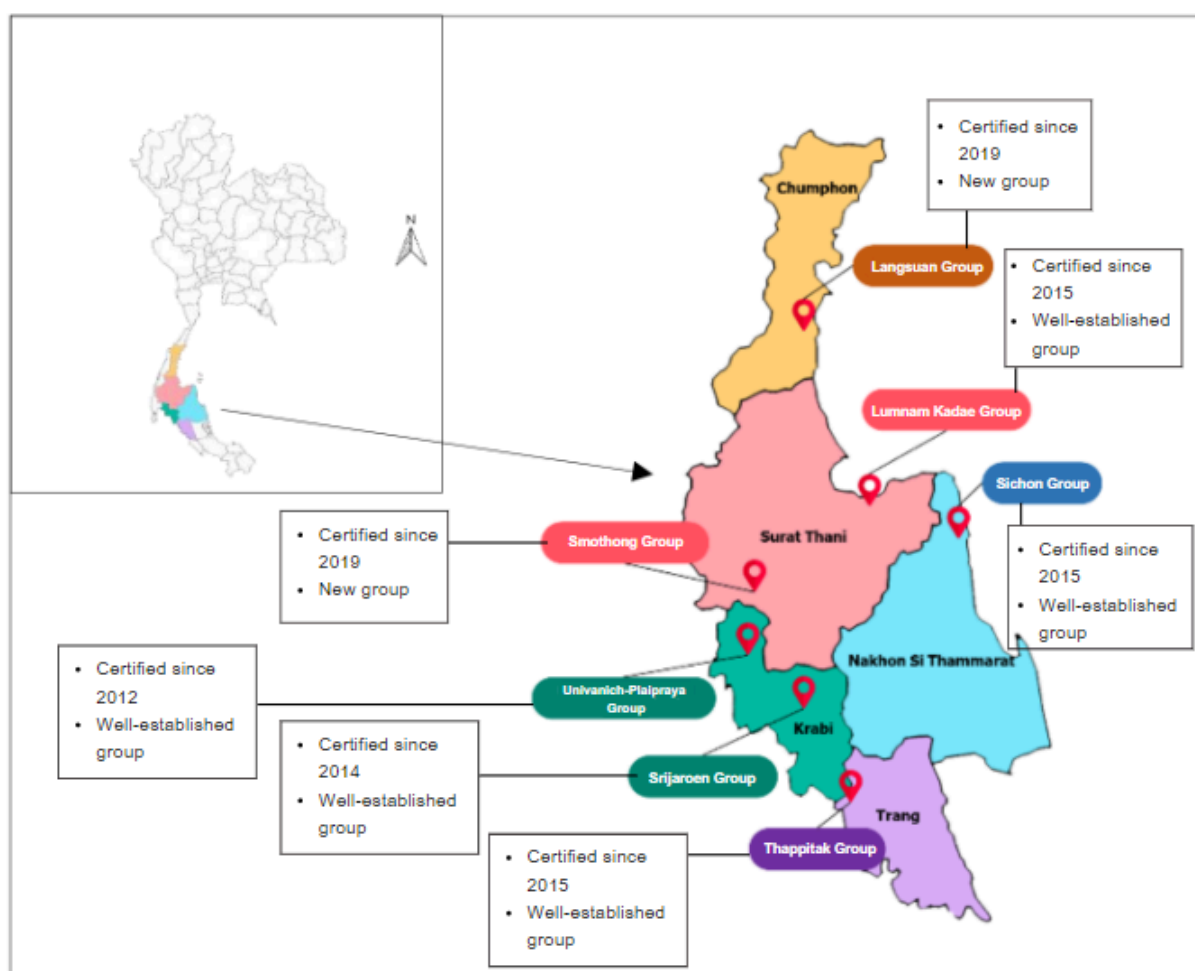


Figure 1: Study area in five provinces and location of certified groups

KEY FINDINGS

OBJECTIVE 1: PALM OIL PRODUCTION AND CONSUMPTION TRENDS AND THE ENVIRONMENTAL, ECONOMIC AND SOCIAL IMPACTS IN DIFFERENT PARTS OF THAILAND

PRODUCTION AND CONSUMPTION TRENDS

As of 2021, 85.5% of the country's planted area is located in the southern region, with the top five planting provinces being Surat Thani, Krabi, Chumphon, Nakhon Si Thammarat, and Phang Nga (Office of Agricultural Economics, 2013a-2021a). From 2012 to 2021, Crude Palm Oil (CPO) production in Thailand grew from 1.893 million tonnes to 2.960 million tonnes, reflecting an annual increase of 5.64% (Department of Internal Trade of Thailand, 2022d). These increases resulted from the expansion of the cultivation area and a slight (0.69% per year) improvement in Oil Extraction Rate (OER).

While Thailand's fresh fruit bunch (FFB) production lags behind Malaysia and Indonesia, it has experienced a significant 48.46% increase since 2012, primarily concentrated in the southern region (Office of Agricultural Economics, 2013a-2021a). Nevertheless, challenges persist in improving FFB productivity and optimising OER for increased CPO production. These challenges include expansion into less suitable regions, insufficient knowledge in oil palm production, low FFB prices due to distant CPO mills, delayed replanting in the south, and the young age of oil palm in new production areas etc.

In terms of consumption, Thailand predominantly utilises palm oil domestically, accounting for over 80% of its annual production (Office of Agricultural Economics, 2013b-2021b). The growth in domestic palm oil usage is attributed to activities such as biodiesel production and cooking oil consumption. Both palm oil exports and imports remain limited, mainly due to its inability to compete with larger markets such as Malaysia and Indonesia. However, data from 2012-2021 indicates some level of export and import activity (see Table 2). During periods of oversupply, the Thai government promotes palm oil exports to alleviate domestic surplus. Conversely, when there is a shortage, imports become necessary to meet the domestic demand.

Table 2: Quantity of Thailand's palm oil exports and imports, 2012-2021

Year	Palm oil exports (tonne)	Palm oil imports (tonne)
2012	411,925.54	158,458.36
2013	725,222.44	110,587.52
2014	355,330.60	127,737.53
2015	131,189.49	158,007.99
2016	117,537.97	116,077.75
2017	429,957.78	81,789.17
2018	472,037.68	70,651.10
2019	380,877.31	72,749.70
2020	297,939.27	105,415.78
2021	789,495.01	59,215.72

Source: Office of Agricultural Economics, 2013b-2021b

ENVIRONMENTAL, ECONOMIC AND SOCIAL IMPACTS IN DIFFERENT PARTS OF THAILAND

The palm oil industry has significantly contributed to economic development in Thailand. About 400,000 farm households in Thailand are involved in the industry, with smallholders benefitting from regular income to meet household expenses (Office of Agricultural Economics, 2013b-2021b). Approximately 65% of smallholders hire local labourers, especially for harvesting, further reinforcing the positive effects of oil palm production on local communities (Thongrak et al., 2021). This increased income has led to higher spending on essential needs such as food, healthcare, education, and consumer goods (Qaim et al., 2020).

The industry has also played an important role in generating economic growth across the supply chain, creating employment opportunities and providing economic returns. The surge in demand resulting from the expansion of oil palm cultivation has spurred growth in input businesses, ramps, oil palm processing, and the midstream and downstream sectors.

Thailand's oil palm cultivation has largely steered clear of extensive deforestation, with plantations often established on marginal or converted agricultural land (Dallinger, 2011; Mukherjee and Sovacool, 2014; Korfak, 2018; Dumrongrojwatthana et al., 2020; Thongrak et al., 2021). Hence, the main environmental concerns of the industry is around increased greenhouse gas emissions, primarily due to the excessive use of chemical fertilisers (Jaroenkietkajorn & Gheewala, 2021).

KEY FINDINGS

OBJECTIVE 2: COSTS, BENEFITS, AND CHALLENGES FACED BY THAI SMALLHOLDERS REGARDING RSPO CERTIFICATION

COST OF RSPO CERTIFICATION

In Thailand, the studied independent smallholders did not initiate any RSPO Certified groups on their own. Instead, the certification process was facilitated and supported by mills and third parties. Most certified groups have strong affiliations with CPO mills, which took the lead in initiating and financing the group formation process. Most groups sell certified FFB physically to their partner mills with only one certified group selling certified FFB in the form of credit on the global market. Another group sells its FFB physically to the partner mill, but sells a portion of it in the form of credit.

In terms of certification costs, upfront costs for a group with a starting membership of 60 and 100 smallholders were approximately 1,204,000 and 1,280,000 Thai Baht (THB), respectively. The expenses for staffing, certification procedure, and training and organisation accounted for the top three biggest upfront costs. For an audit involving 60–100 members, the cost amounted to approximately 295,000 THB. As for ongoing expenses, groups with various membership sizes incurred the following annual recurrent costs: 972,500 THB for 100 members, 1.120 million THB for 150 members, 1.410 million THB for 200 members, and 1.604 million THB for 250 members. The recurrent costs per member decrease as the number of members increases, but in a non-linear pattern. These recurrent costs are not a major concern since,

following certification, the groups are able to sell certified sustainable FFB and generate a portion of their income from it.

BENEFITS OF RSPO CERTIFICATION

Once the smallholders adopted and enhanced their oil palm sustainable practices, the benefits of RSPO Certification became apparent (see Figure 2). The adoption of RSPO Certification proves to yield positive economic outcomes for certified smallholders, evident even within groups as small as 60 members. As the size of the smallholder group expands, so do the benefits, culminating in annual gains of up to 10.416 million THB with 260 members.

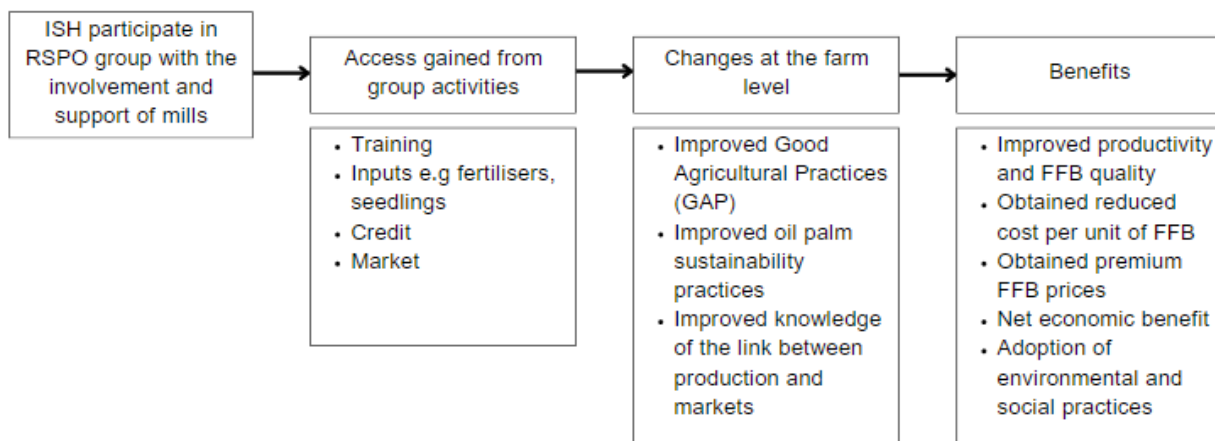


Figure 2: Overview of the benefits of RSPO Standard Certification for ISH in Thailand

CHALLENGES OF RSPO CERTIFICATION

Despite the above listed benefits gained from RSPO Certification, smallholders continue to face challenges in meeting the RSPO Standards. The key challenges are listed below:

- **Market Challenges:** Limited demand for CSPO in Thailand results in lower prices, making it difficult for Thai mills to promote RSPO Certification, especially for independent smallholders.
- **Policy Ambiguity:** The Thai government's stance on RSPO is unclear, lacking explicit inclusion in sustainability plans.
- **Lack of Awareness:** Limited knowledge and awareness about RSPO Standards and benefits among stakeholders, especially smallholders, hinder adoption.
- **Complexity of RSPO Standards:** Complexity poses challenges, particularly for unorganised smallholders with budget constraints. Interpretation issues within the Thai context add to compliance difficulties.
- **Specific RSPO Challenges:** Issues in land titles, documentation, and high audit costs, coupled with time-consuming processes, create barriers. Discrepancies in interpreting environmental and social indicators add to complexities.
- **RSPO Organisational Challenges:** Insufficient local and national RSPO staff to help smallholders understand the RSPO Standards and the certification process.

- **Smallholder Constraints:** Demographic factors, including education and age, limit smallholders' understanding and adoption of RSPO Standards.
- **Personnel Shortage:** The absence of personnel providing technical support on RSPO Standards to smallholder groups is a significant challenge.

KEY FINDINGS

OBJECTIVE 3: IMPACT OF RSPO CERTIFICATION ON THE LIVELIHOODS OF SMALLHOLDERS

When comparing the impacts of certification on non-certified and certified smallholders, the results reveal differences in social, environmental, and economic aspects. Generally, certification enhances knowledge in oil palm production, fosters better relationships among smallholders, reduces health risks, improves safety, and increases sustainability awareness among non-certified smallholders. Environmentally, certified smallholders also adopt more environmentally friendly practices compared to non-certified smallholders. In terms of economic impacts, certification offered smallholders with better access to inputs, services, market access, and premium prices for FFB. Table 4 provides an overview of the differences in social, environmental, and economic impacts between non-certified and certified smallholders.

Table 3: Overview of the Thailand smallholder profile

Demographic Profile of Smallholders	<ul style="list-style-type: none"> ● 90% of smallholders are over 40 years of age ● More than half of the smallholders are male (55.6%), with certified smallholders having a higher proportion of males at 63.3% ● 75% have obtained at most, secondary education ● 80% of smallholders are married ● On average, smallholders have 3.5 people per household, with two working members
Labour and Production	<ul style="list-style-type: none"> ● Housewives assist male farmers; hired labourers are common. ● Certified smallholders have larger production areas (5.06 hectares) compared to non-certified smallholders (3.44 hectares). ● 85.1% of smallholders depend on palm oil as their primary income source, although many also engage in additional sources of income. Common secondary sources include rubber plantations and fruit tree production. ● 54.7% of smallholders have more than 15 years of experience in oil palm production, with certified smallholders having more experience than non-certified ones.

The researchers also looked into the opinions of smallholders regarding RSPO Certification. Nearly all certified smallholders expressed their agreement on the benefits of belonging to a certified group (97.5%) and expressed satisfaction with their group membership (100%). Interestingly, the non-certified group also displayed favourable opinions about RSPO Certified groups. However, while all these non-certified smallholders mentioned they were invited to join the RSPO groups, they chose not to pursue certification,

due to factors such as time constraints for training (59.6%), limited oil palm acreage (21.3%), and a variety of other factors (25.5%) due to issues such as land title disputes, old age, health concerns, and geographical distance from the group.

OIL PALM PRACTICES OF CERTIFIED SMALLHOLDERS AND NON-CERTIFIED SMALLHOLDERS

The findings reveal that certified smallholders have embraced all studied oil palm sustainable practices (OPSP) more extensively than their non-certified counterparts, as illustrated in Figure 3. When comparing the adoption of OPSP between well-established (oil palm smallholders who have been certified since 2012-2016 against RSPO Principles & Criteria, P&C) and newly (oil palm smallholders who have been certified since 2019 against RSPO ISH standard) certified smallholders, the results show minimal differences for most practices. However, in the case of Integrated Pest Management (IPM), arranging oil palm fronds for plantation coverage, OSH, and soil and fertiliser improvement, well-established certified smallholders exhibited higher adoption rates than their newly certified counterparts (refer to Figure 4).

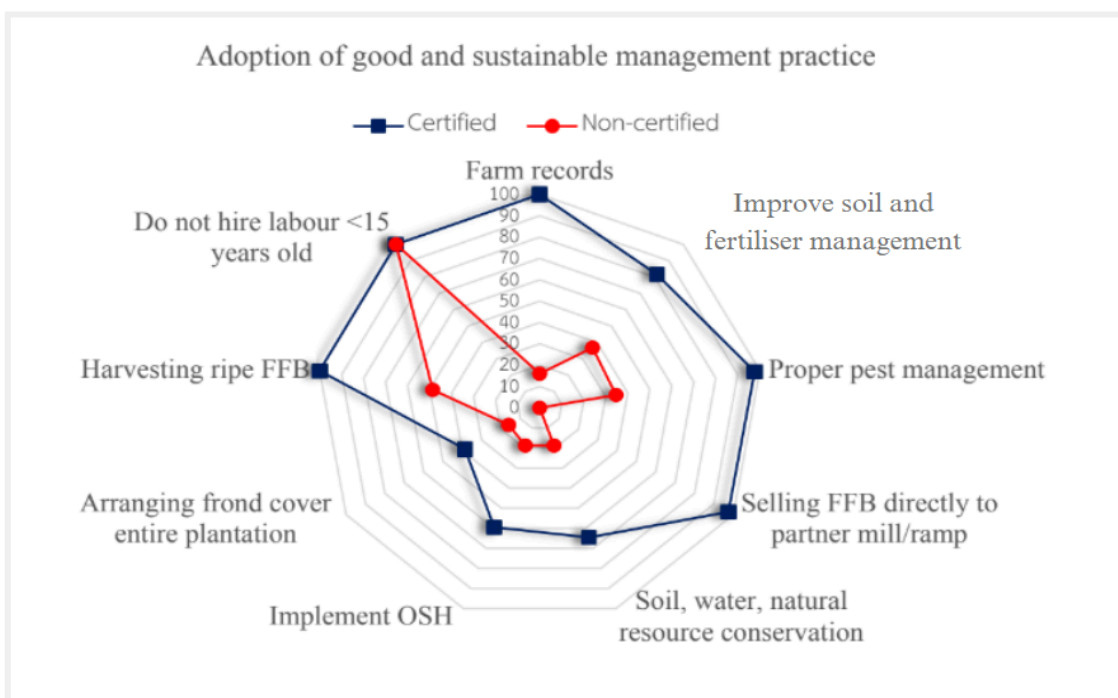


Figure 3: Adoption of good and sustainable management practices, comparing certified and non-certified smallholders

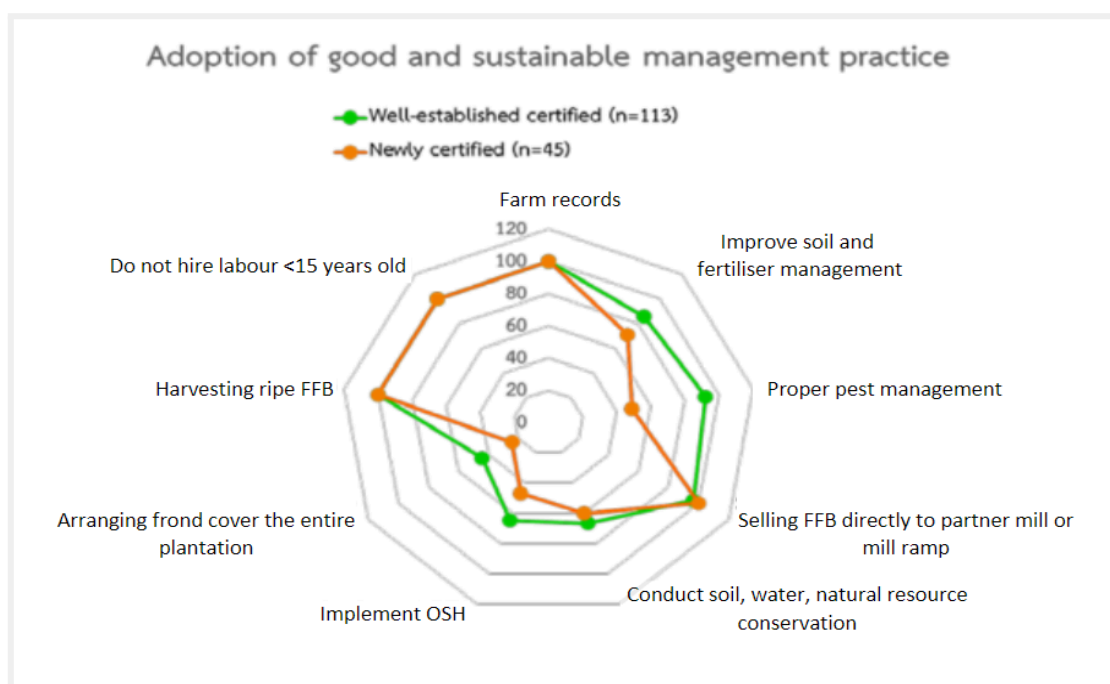


Figure 4: Adoption of good and sustainable management practices, comparing well-established and newly certified smallholders.

SOCIAL, ENVIRONMENTAL AND ECONOMIC IMPACTS OF RSPO CERTIFICATION

RSPO Certification has demonstrated a positive impact on the social, economic and environmental dimensions (refer to Table 4, 5 and 6) for smallholders in the Thai oil palm industry. Certification has led to improved knowledge, relationships, health, safety and sustainability awareness among smallholders. Economically, certified smallholders enjoy better access to resources, market opportunities, and premium prices for FFB resulting in higher yields and net returns compared to non-certified counterparts. Well-established certified smallholders experience even greater economic advantages. Additionally, certified smallholders in Thailand show a higher adoption of environmentally friendly practices compared to non-certified ones.

Table 4: Results of the survey and in-depth interview with certified and non-certified smallholders

Type of Impact	Variable*	Certified (n=158)	Non-certified (n=144)
Social Impacts	Smallholder's knowledge on oil palm management improves	100%	13.8%
	Relationship amongst the smallholders, and between smallholder and mill improves	99.4%	1.4%
	Health risk of smallholder, family member, and labour decreases	98.6%	18.8%
	Safety from accident of farm household and hired labourers improve	99.4%	18.1%

	Benefits for non-certified smallholders <ul style="list-style-type: none"> • More knowledgeable farmers in the community who can help others • Availability of best management practice plantation in the community • Raising awareness of the non-certified smallholders 	91.4%	(n=47)** 97.9%
Environmental Impacts	Land use prior to oil palm production***	76.9% of plots	79.7% of plots
	Placing frond and leaf spread cover the entire plantation to cover weed and soil erosion	38.6%	16%
	Stop applying chemicals	73.5%	65.3%
	Reducing chemicals use	26.5%	16.0%
	Applying IPM	12.0%	0.0%
	Adopting soil, water, and natural resources conservation	64.6%	18.8%
	OHS Adoption	59.5%	18.8%
Economic Impacts	Access to harvesting teams with reasonable wages	88.6%	4.9%
	Access to soil or leaf analysis	60.8%	4.9%
	Purchasing chemical fertiliser at a lower price than the market price due to collective buying	24.7%	4.2%
	Obtained empty bunches from the mill or at lower prices	7.6%	0.7%
	Purchasing oil palm seedlings at a lower price than market prices	6.3%	0.7%
	Credit from the mill for purchasing chemical fertiliser	1.9%	2.1%
	Access to credit	0%	1.4%

*An oil palm smallholder can give more than one answer

**Percentage was calculated from the respondents that perceived about RSPO

***Refers to areas that were previously utilised for agriculture

Table 5: Average cost, return, and net return from oil palm production in 2021 and 2022

Year	Variable*	Certified	Non-certified	Well-established certified	Newly Certified
2021	Production cost* (THB/rai)	5,346.20	4,601.60	5,444.30	5,099.90
	Yield (kg/rai)	3,454.70	2,578.20	3,605.60	3,075.70
	Prices (THB/kg)	6.72	6.18	6.89	6.20
	Return (THB/rai)	23,217.20	15,945.10	24,861.60	19,087.90
	Production cost/kg of FFB (THB)	1.51	1.78	1.51	1.66
	Net return (THB/rai)	17,871.00	11,343.50	19,417.10	13,982.20
	Oil palm net return (THB/household)**	548,640.00	231,407.00	436,884.80	339,767.50

2022	Production cost* (THB/rai)	6,710.40	5,759.90	6,920.70	6,182.10
	Yield (kg/rai)	3,569.80	2,662.40	3,762.30	3,086.20
	Prices (THB/kg)	7.70	7.34	7.84	7.24
	Return (THB/rai)	27,494.80	19,532.60	29,509.30	22,436.40
	Production cost/kg of FFB (THB)	1.88	2.16	1.83	2.00
	Net return (THB/rai)	20,776.10	13,772.70	22,624.20	16,263.90
	Oil palm net return (THB/household)**	637,826.30	279,943.00	509,044.50	395,212.80

* production cost includes only variable cash-cost

** obtain from net return per rail X average harvested area

Table 6: FFB yield in 2021 and 2022

Year	Yield	Oil palm smallholders (%)		Oil palm smallholders (%)*	
		Certified (n=158)	Non-certified (n=144)	Well-established certified (n=113)	Newly Certified (n=45)
2021	≤ 2,000	9 (5.7)	16 (11.1)	9 (8.0)	0 (0.0)
	2,001-3,000	52 (32.9)	99 (68.8)	31 (27.4)	21 (46.7)
	3,001-4,000	63 (39.9)	28 (19.4)	42 (37.2)	21 (46.7)
	4,001-5,000	19 (12.0)	1 (0.7)	16 (14.1)	3 (6.6)
	> 5,000	15 (9.5)	0 (0.0)	15 (13.3)	0 (0.0)
	Mean (S.D.)	3,454.7 (1,313.1)	2,578.2 (552.3)	3,605.6 (1,496.2)	3,075.7 (499.2)
2022	≤2,000	7 (4.4)	13 (9.0)	6 (5.3)	1 (2.2)
	2,001-3,000	45 (28.5)	98 (68.1)	28 (24.8)	17 (37.8)
	3,001-4,000	66 (41.8)	32 (22.2)	43 (38.1)	23 (51.1)
	4,001-5,000	24 (15.2)	1 (0.7)	20 (17.7)	4 (8.9)
	> 5,000	16 (10.1)	0 (0.0)	16 (14.1)	0 (0.0)
	Mean (S.D.)	3,569.8 (1,398.1)	2,662.4 (518.6)	3,762.3 (1,579.1)	3,086.2 (541.0)

* well-established and newly certified smallholders are those from well-established and newly certified farmers groups.

OBJECTIVE 4: POLICY IMPLICATIONS RELATED TO PRODUCTIVITY GROWTH, FOREST PROTECTION, MOSAIC LANDSCAPES, LAND RIGHTS AND SUSTAINABILITY CERTIFICATION IN THE CONTEXT OF PALM OIL'S IMPACT ON LIVELIHOODS

The Thailand Oil Palm Board (TOPB), has developed three major palm oil development plans in the past, namely the “Oil palm and palm oil industry development plan 2008–2012”, “Oil palm and palm oil industry development plan 2013 – 2017”, and “Comprehensive oil palm and palm oil development strategy in 2017–2036”. The researchers conducted an assessment of the policy implications as highlighted below.

POLICY IMPLICATIONS FOR NEW PLANTING, PRODUCTIVITY AND LAND RIGHTS

All three development plans emphasised promoting new planting in suitable areas and increasing yield. The implementation of those plans reveals some progress toward targets. The expansion of new planting areas has accounted for about 320,000 hectares, most of which expanded into agricultural land, such as rubber plantations, abandoned paddy fields, empty fields, and orchards. However, the targeted yield of 3.5 tonnes per hectare per year has not been achieved. In terms of land rights, plantations have not been reported to encroach forests at that time; rather, traditional agricultural areas were converted for new plantings. There were some Thailand Land Title Deeds, otherwise known as Por Bor Tor 5 (8.6%) that were not eligible for the RSPO Standard. The government, however, is more concerned with the issue of land rights and is attempting to address the complicated and challenging legal and structural aspects of the nation's land tenure.

POLICY IMPLICATIONS FOR PRODUCTION STANDARDS AND SUSTAINABILITY

There has been a growing emphasis on production and sustainability standards in the second and third plans. These plans have focused on establishing internationally recognised production standards, including Good Agricultural Practice (GAP), and Good Management Practices (GMPs) for ramps and factories. While sustainability standards are recognised at the development policy level, the RSPO Standard was not explicitly mentioned in these national plans. However, there has been evidence of gradual adoption and recognition of the RSPO Standard in Thailand. For example, the Surat Thani Provincial Oil Palm and Palm Oil Development Plan and the SCPOPP Project were the two agricultural development projects at a provincial level that clearly demonstrated RSPO objectives for oil palm development. As of May 2022, RSPO Thailand's oil palm growers' membership includes 63 groups of small-scale and large-scale farmers, with 19 of them being RSPO Certified Independent Smallholder (ISH) groups. This accounts for over 5,400 farmers with a certified area of 27,295 ha, equivalent to 2.8% of the total oil palm plantation area. The dominance of RSPO Certified groups is particularly noticeable in Surat Thani and Krabi provinces, primarily due to the efforts of CPO mills and refinery factories. To further enhance RSPO Standard certification during the current plan, government agencies have started to engage and involve farmers in farmer development projects.

OBJECTIVE 5: RECOMMENDATIONS

The researchers recommend that the most suitable model for advancing towards RSPO Certification is to adopt the Public-Private Partnerships for Agribusiness Development (Agri-PPPs) model, as shown in figure 5. This approach holds promise for sustainable oil palm development, benefiting smallholders and creating a mutually beneficial situation for all stakeholders involved.

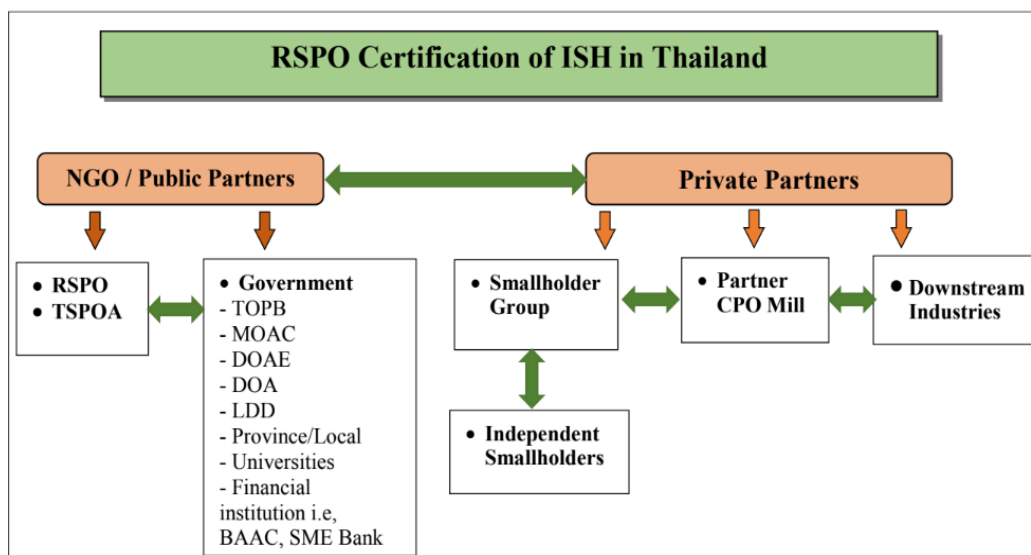


Figure 5: Model for the RSPO Certification of ISH in Thailand

The researchers have also proposed key recommendations for stakeholders on moving towards RSPO Certification as follows:

Stakeholders	Recommendations for Stakeholders
Mills	Create a robust framework for promoting CSPO demand, fostering group formation, ensuring equitable benefits, providing marketing information to smallholders, enhancing group participation, efficiently allocating resources for smallholder group certification preparation, and record-keeping to track investments in smallholder groups. Collaboration between mills and smallholder groups were also emphasised to reduce production costs and promote sustainable practices.
Smallholders	Strengthen adherence to RSPO Standards by dedicating more time to training, fostering collaboration among certified smallholders, actively engaging non-certified smallholders, emphasising accurate record-keeping for self-assessment, and encouraging diversification into other agricultural commodities to boost family income.
Smallholder groups	Regularly update information on factors influencing their performance and livelihoods, enhance committee capacities for resilience and self-reliance, hire permanent staff for ongoing development, prioritise efficient and business-focused management by boosting revenue and minimising costs, address members' challenges, and commit to the RSPO ISH Standard.

	Groups pursuing certification without adequate resources should explore partnerships, seek assistance, or consider hiring consulting organisations. For newly formed groups, aiming for a minimum of 100 members is advised to ensure cost-effective administration and benefit from economies of scale.
RSPO	Bolster RSPO's presence in Thailand by increasing staff and initiating awareness campaigns through TSPOA and other channels. Focus on aiding smallholders in understanding RSPO and certification processes, clarifying RSPO Standards' criteria that often cause confusion, and enhancing group managers' capabilities. Technical assistance should also be provided to groups in collaboration with academic and governmental institutions. There's also a proposal to reevaluate the 100% internal audit requirement, streamline auditing processes for efficiency, and enhance auditors' capacity in Thailand for timely and affordable services.
Government	Consider partnering with RSPO for increased awareness on sustainable practices and the RSPO Standards, establishing a local administrative division for coordinated development, expedite the adoption of Thailand Sustainable Palm Oil Standards within the RSPO framework and adopting it as national production standards, creating a government-led sustainability platform, providing financial support for efficiency improvements and farmer group activities, and implementing incentive measures for downstream industries to enhance global market competitiveness.

For the full version of this report, please download it [here](#).

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