

# Low ILUC-risk certification: Pilot report and recommendations

Malaysia, Oil palm yield increase, June 2022

**Prepared for:**



European Commission

**European Commission DG ENER**

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Commission reference: ENER/C2/2018-462/LOT 2/SI2.822263  
Guidehouse reference: 210301

Date: June 2023

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## Table of Contents

<b>1. Pilot introduction.....</b>	<b>3</b>
1.1 Recap Phase 1 pilot .....	3
1.2 Feedstock and Geography .....	3
1.3 Audit.....	5
1.4 Key issues tested .....	6
1.5 Relevant documents.....	6
<b>2. Yield increase measures .....</b>	<b>7</b>
2.1 Fertiliser credit scheme .....	7
2.2 Bio farm.....	9
<b>3. Findings .....</b>	<b>11</b>
3.1 Availability of data and evidence .....	11
3.2 Additionality test .....	13
3.2.1 Barrier analysis .....	13
3.2.2 Validity of the additionality measures .....	14
3.3 Determining the dynamic yield baseline .....	15
3.4 Calculation of additional biomass .....	16
3.5 Sustainability of the additionality measure .....	18
3.6 Low ILUC for groups .....	18
3.7 Definition of small holder .....	19
3.8 Other.....	20
3.8.1 Would low ILUC be worthwhile for farmers?.....	20
3.8.2 Variances in farm size.....	20
<b>4. Conclusions and recommendations for low ILUC-risk methodology.....</b>	<b>21</b>
4.1 Key conclusions from this pilot .....	21
4.2 Improvements to the certification guidance.....	23
<b>Appendix A. Audit details.....</b>	<b>24</b>
<b>Appendix B. RSPO sample method for group certification.....</b>	<b>25</b>

## List of Tables

Table 1. Audit attendees .....	24
Table 2. Audit itinerary .....	24
Table 3. Example RSPO sample method.....	25

## List of Figures

Figure 1. The farmers are located in the Beluran district (marked by red dotted line) of the Sabah region of East Malaysia.....	4
Figure 2 Picture of the audit team during the audit .....	5
Figure 3 Small farm participating in the fertiliser credit scheme .....	8

Figure 4. Three stages of bio farms..... 9  
Figure 5 Small farm who participates in the bio farm programme ..... 10  
Figure 6 Box plot of yield range Beluran group (t FFB/ha/yr)..... 12  
Figure 7. Historical yield data pilot farms..... 15  
Figure 8. Historical yield data pilot farms who have taken an additionality measure..... 15  
**Figure 9. Dynamic yields baselines for individual farms in the pilot audit sample ..... 17**

## 1. Pilot introduction

This pilot was conducted to test the low ILUC-risk certification methodology for the cultivation of biomass as part of a group certification, as defined in the Implementing Regulation (EU) 2022/996 on rules to verify sustainability and greenhouse gas emissions saving criteria and low indirect land-use change-risk criteria.

### 1.1 Recap Phase 1 pilot

In Phase 1 of the project, a pilot was conducted which focused on oil palm yield increase measures on a plantation owned and operated by a large agribusiness in the Sabah region of East Malaysia. The pilot company who supported the Phase 1 pilot had the necessary data on historical yields and on the costs of the yield increase measures taken, which enabled them to conduct the calculations required for low ILUC-risk certification and for those calculations to be verified by an independent auditor. The outcome showed that it was hard to demonstrate additionality of the measures already taken and as their achieved oil palm yields were already relatively high. Therefore, the volume of “additional biomass” that could have been claimed if the plantation was low ILUC-risk certified was low.

For Phase 2, it was decided to focus the pilot on testing the certification approach for small holder farmers, and how the concept of low ILUC-risk certification can be applied in a group certification context. The hypothesis was that small holder farmers typically have lower yields than large agribusinesses, so may have more potential to increase yields and claim (relatively) larger volumes of low ILUC-risk biomass. However, their data availability may be lower and the level of administration, resources and access to existing certification could present a challenge. To reduce the administrative burden of low ILUC-risk certification and to enable the approach to be used with existing biofuels certification, it will be important to ensure there is a clear and robust approach set out for group certification.

The pilot company from Phase 1 was able to introduce us to a group of small farmers, some of whom supply their mills, and who are certified as a group to the Roundtable on Sustainable Palm Oil (RSPO). Whilst RSPO is not currently a Commission-recognised voluntary scheme, the group certification principles applied by RSPO are in line with those required by Commission-recognised schemes. This Phase 2 pilot was therefore conducted with an RSPO-certified oil palm group in Sabah, East Malaysia.

### 1.2 Feedstock and Geography

This pilot tests the low ILUC-risk certification methodology, focusing on how the approach can be implemented as part of an existing **group certification**. We worked together with an existing certified group of small oil palm farmers. Note that within this pilot, we also considered the definition of ‘small holder’ farmer as stated in the Delegated Regulation 2019/807<sup>1</sup>. However, the group we worked with in the pilot includes ‘small farmers’ with various sizes of land under their tenure, some of whom are larger than 2ha, and is therefore not limited to farmers with less than 2 ha only.

The group is located in the Sabah region of East Malaysia and certification is managed by a central office named Wild Asia Group Scheme (WAGS). The group is currently certified to

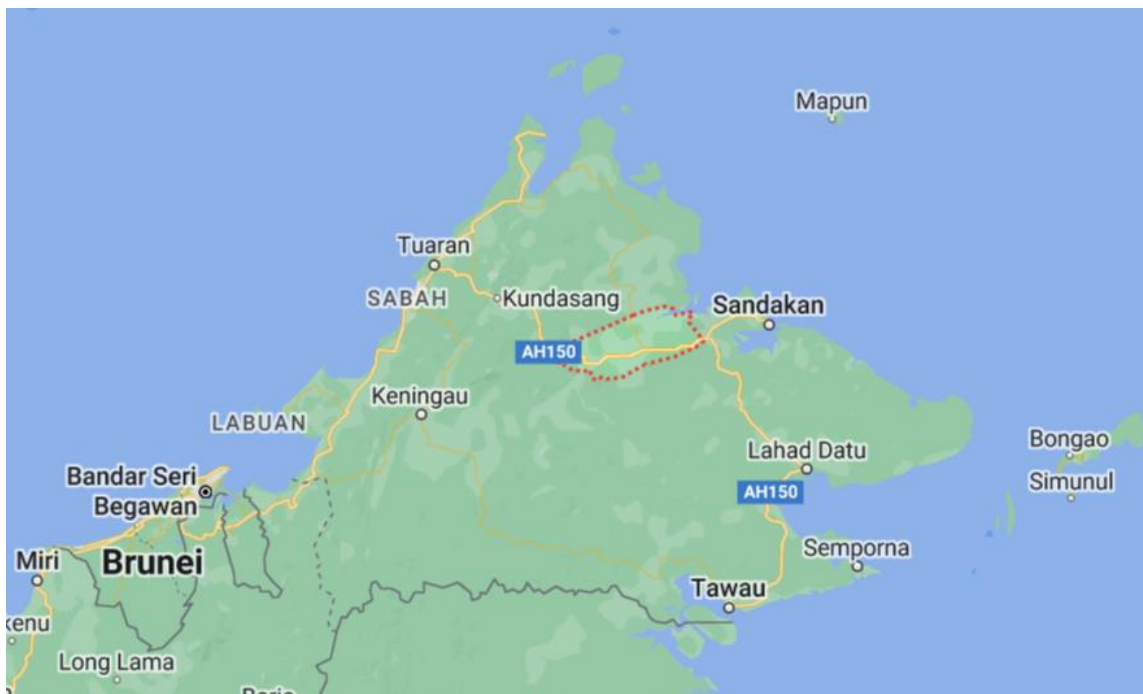
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<sup>1</sup> To get low ILUC-risk certified, small holders need to take an “additionality measure” (i.e. yield increase measure), but are exempt from the “Additionality test” (i.e. financial attractiveness test or barrier analysis). Small holder is defined as (a farmer) who conducts independently an agricultural activity on a holding with an agricultural area of less than 2 hectares for which they hold ownership, tenure rights or any equivalent title granting them control over land, and who are not employed by a company, except for a cooperative of which they are members with other small holders, provided that such a cooperative is not controlled by a third party.

both **Roundtable on Sustainable Palm Oil (RSPO)** and **Malaysian Sustainable Palm Oil certification scheme (MSPO)**, although not to an EC-recognised voluntary scheme. The group was first certified to RSPO in 2014. Since 2019 it is mandatory to be certified to MSPO in Malaysia. Therefore, all group members are certified to both RSPO and MSPO. However, note that not all the members are certified to MSPO as part of this same group. The Malaysian Palm Oil Board (MPOB) assigns local groups, so if a farmer was already in a local group for MSPO certification, WAGS's preference is not to change this.

The WAGS RSPO group currently consists of **712 members**, of which 280 are new members who joined the group in 2022. Since the first certification of this group to RSPO in 2014, the number of group members has almost doubled.

Within the WAGS RSPO group there are four geographical regions, each with a regional coordinator, and within each region there are member groups. We worked with the Beluran region (see map in Figure 1), which consists of **108 oil palm farmers** with an average size of 3 ha.



**Figure 1. The farmers are located in the Beluran district (marked by red dotted line) of the Sabah region of East Malaysia**

The oil palm trees on the pilot farms were planted between 1988 and 2008, depending on the farm, meaning the trees are generally in the age range of 18 to 25 years old. As many trees are already 25 years old or older, replanting of the oil palm trees is expected in the next few coming years. As independent small farmers, the timing of replanting is the decision of the individual farmers.

WAGS supports the farmers with training and arranges RSPO certification. WAGS is responsible for the collection and verification of yield data for the group members as part of the RSPO certification. They visit farmers and monitor (amongst other things, checking yield receipts) every quarter. Before RSPO certification, WAGS reports that most farmers did not tend to systematically record their yields or keep their mill receipts.

This group was chosen as members of the group supply to the Phase 1 pilot company. The group has good data availability, and the group has a variety of members who implement different measures, face different barriers and supply mills in different ways (i.e. direct to the mill or via a collector). This allows for testing of different situations, options and approaches in the low ILUC-risk certification methodology.

### 1.3 Audit

The pilot audit was conducted on-site by lead auditor Mohd Musa Bin Mohd Yusof between **27 and 30 June 2022**. The lead auditor was accompanied during the audits by a local Control Union colleague, two members of the Guidehouse project team, and several representatives from WAGS. During the audit the project team spent one day at the WAGS office to review the management plan and learn more about small farms and group certification in Malaysia. On the second day, WAGS accompanied the project team to visit four of the farmers to conduct interviews and verify the additionality measures and yield data. On the third day the project consortium visited the mill from the Phase 1 pilot to discuss the outcome of the report and learn more about the difference between small-scale and large-scale agriculture in Malaysia. The last day was spent on the closing meeting and reflecting if low ILUC certification would be feasible for groups.

The objective of this pilot audit is to verify and test the methodology and guidance for low ILUC-risk certification for a group of small and medium sized farms. The scope of the certification is group certification with WAGS as the central office. WAGS were able to provide yield data for **111 group members of the Beluran region**. The audit focused on a **sample of six individual farmers** within the Beluran region (of which four were visited on-site as time did not allow to visit all six). The audit checklist was filled in for the six farmers combined. This is in line with RSPO procedures but different from an ISCC audit, for example, whereby the audit checklist would be filled in for each individual farmer separately.

For the pilot audit, the selection of farms to visit is based on an initial short-list recommendation from WAGS, whereby we considered a range of additionality measures applied, the way of supplying the mill (direct or via collector), and the willingness to increase yields. The six farmers are chosen to represent the group and show the variety that exists on each of the considerations.



**Figure 2 Picture of the audit team during the audit**

## 1.4 Key issues tested

The key issues that the pilot aimed to test are:

- **Data availability.** To test to what extent small farmers had access to accurate historical yield data and the degree of granularity (e.g. farm or group level etc).
- **Group certification methodology.** To test how the group certification approach should be implemented in practice as part of low ILUC-risk certification, for example whether the whole group needs to take the same additionality measure and pass the additionality test as one entity, or whether different farms can take different approaches etc.
- **Methodology to determine dynamic yield baseline and additional biomass in the context of group certification.**
- **Methodology to define barriers to yield increase.** To test an objective approach to define the barriers to yield increase that small farmers experience in the context of the Additionality test.
- **Sustainability of additionality measure.** To test that the additionality measure is conducted in a “sustainable manner”, as required by the Delegated Regulation 2019/807.
- **Definition of small holder, as defined in the Delegated Regulation 2019/807.**

## 1.5 Relevant documents

During the audit, a number of documents were collected including:

- Filled in management plan for the six farmers who participated in the pilot (from WAGS)
- Group yield data of 111 farms (from WAGS)
- PowerPoint presentation on bio farms (from WAGS farmer training)
- Audit checklist (filled in by Control Union)
- Audit report (filled in by Control Union)

## 2. Yield increase measures

Within the WAGS RSPO certified group, some farmers have implemented yield increase measures and some not. The main yield increase measures identified were participation in a “fertiliser credit scheme” and implementation of the “bio farm” concept, as described below. Farmers within the group implemented these measures at different times.

All members of the WAGS RSPO certified group are invited for yearly training. The training works on continuous improvement and thereby fulfils the RSPO requirement for continuous productivity improvement. The focus of the training is best management practice, for example, application of fertiliser, quality of seeds and collection of loose fruits to avoid harvest losses. WAGS estimated that simply applying these practices alone could already increase yield by 5%. The training is offered to farmers every year, although WAGS cannot force farmers to attend or to implement the best management practices. Besides best management practices, the training also covers the following topics:

- Previous non-conformities of group members (anonymised)
- Changes to principles and criteria from RSPO
- Growing other crops alongside palm to increase and diversify farmer income e.g., soft wood or ginger alongside palm

### 2.1 Fertiliser credit scheme

Some of the group voluntarily participate in a “**fertiliser credit scheme**”, which aims to support small farmers to increase their yield by providing access to better fertilisers and knowledge on best fertiliser application practices. The fertiliser credit scheme is offered by the agribusiness who supported the Phase 1 pilot. The scheme targets small independent farmers who supply their mill and who do not use fertiliser as is it often too expensive for them. It is estimated that for these small farmers, fertiliser costs could be up to 50% of the total cost of operating their farm. The fertiliser credit scheme supports the small farmers by selling them the fertiliser at wholesale price (plus transportation cost) and providing the opportunity to pay the cost back on a zero-interest credit basis within three months. With this, the fertiliser credit scheme makes fertiliser **financially** and **physically** available for farmers.

Additionally, the agribusiness offers the farmers training on best fertiliser practices and agronomic advice on-site at their mill, as part of the fertiliser credit scheme, although participation in the training is voluntary. The agronomic advice on nutrient levels in the soil and application of the fertiliser are based on the MPOB best practices. Better nutrient levels in the soil result in yield improvements. It is preferred if participants in the fertiliser credit scheme supply one of the company’s mills, but it is not obligated as this is not something in the control of the company. Some farmers always supply the same mill, but others supply via a collecting centre if it is closer to them, or farmers may vary their supply route depending on who is offering a better rate.

Challenges for the fertiliser credit scheme identified in interviews during the pilot include:

- (Small) farmers are not always focused on maximising their yield, especially if they have other sources of income and are less reliant on the income from palm oil.
- The small farmers who are interested in increasing their yield may own several plots, or plots might be owned or divided between family members, and the farmers are not



obliged to sell to the company's mill. It could therefore happen that the additional fertiliser is used on plots which do not supply the mill. This could still mean that yields increase, but the mill may not have full visibility over that and may not get the full benefit in terms of increasing the supply to their mill.

- Prohibiting that the supplied fertiliser is sold on the market, instead of being used by the farmer. As the supplied fertiliser is below the market price, small farmers could benefit by selling the fertiliser instead of using it on their plot, especially if they don't have the focus or labour needed on the farm.
- Farmers do not always attend the offered training, possibly because of the need to travel and the overlap with the standard MPOB and WAGS training.
- Farmers are not always consistent in whether they take part or not. Some might buy fertiliser via this route in one year and either source fertiliser via a different route another year or even not use fertiliser another year.

The yield increase measure is already introduced several years ago the group, but the larger part of the RSPO certified group did not apply the measure. The audit could therefore compare the results of farmers participating in the fertiliser credit scheme with ones who did not in the calculation of the dynamic yield baseline ("baseline audit") and the calculation of additional biomass ("additionality audit"). One difficulty occurred because not all participants in the fertiliser credit scheme were consistently taking part. Farmers could participate one year and not in others.



**Figure 3 Small farm participating in the fertiliser credit scheme**

The following observations were made in the Auditor's report:

- 'The measures stated above are the normal practice of fertilisation application by applying suitable fertiliser like NPK fertiliser by the farmers when required (usually 3-4 times in a year) and applying chemical pesticide/herbicide every 6 months to control the weeds and pest in the farm as interviewed with the farmers and explained by [WAGS

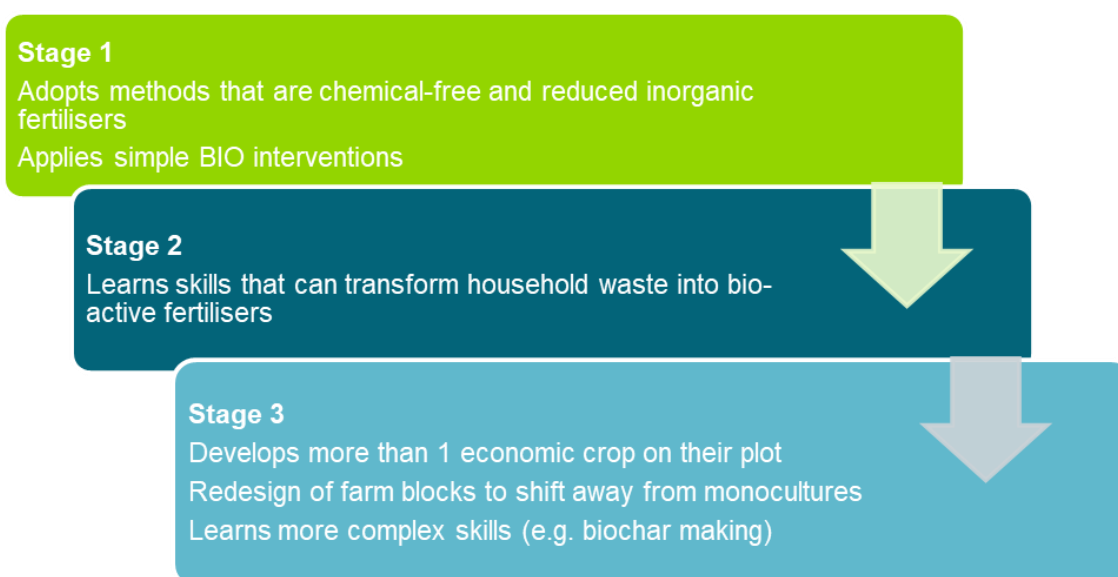
representative]. These measures also have been practiced by the big players to manage their palm oil estate and at the same time increase the yield of palm oil.'

- 'From the site visit and information given by [WAGS representative], some of the smallholders already practicing these fertiliser applications on their farms but not consistently implementing them. Wild Asia has introduced these measures since the start of the RSPO certification of WAGS (Wild Asia Group Scheme) to their members, but the implementation cannot be done by the smallholder due to various reasons and this will be discussed further in the next chapter (*Barriers in implementing additionality Measures*)'.

## 2.2 Bio farm

Besides the standard WAGS training on best management practices, WAGS also offers training on the "bio farm" concept. The bio farm programme is a systematic approach in managing the palm oil plantation through chemical-free agriculture and regenerative practices, which broadly includes 3 stages, as shown in Figure 4. The concept has been developed by WAGS, although it includes a combination of existing techniques. The training has been taken up by some group members and some of those chose to implement the methods, although often only a selection of the measures are implemented and only on some of their land to start off with.

The bio farm concept was presented to members of the Beluran group early 2021. As shown in Figure 4, the programme includes several complementary measures that farmers can apply. The first stage involves the farmers making and applying natural compost at the farm by using empty fruit bunches (EFB) and food waste as the main ingredient of the compost, and EFB mulching around the oil palm tree and between the palms. Farmers also start weeding rather than applying pesticides. Stage 2 involves the application of DIY enzyme and fertiliser made from food waste that can be easily done at home or in-situ (on the farm), like making and applying fertiliser made from fish industry waste. Lastly, stage 3 involves major changes in farm blocks design, where land application will be maximised to cultivate other economical plants such as ginger, or to rear chickens within the farm area. This can also include introducing wild flowers to promote pollination, and making and applying biochar made from palm fronds as a fertiliser and soil improver.



**Figure 4. Three stages of bio farms**

The bio farm programme is still in development, but first results are promising – some farmers report that they can achieve yield increase in 1.5 years, possibly up to 30%. The yield increase is mainly caused by the increase of the FFB weight. All other aspects of the FFB stay the same. WAGS continues to review the implementation of the scheme and expects that after three years, the first valid data will be available for analysis. Before this time there can still be a residual effect from the previous use of conventional fertiliser.

The challenges for the bio farm concept identified during pilot interviews include:

- A price premium for organic palm oil is currently only available from the cosmetics industry, not from the bioenergy industry. Additionally, farmers need to wait for three years after starting the bio farm programme before they can claim organic palm oil, because of the residual fertiliser effect.
- There is a big lobby from fertiliser companies that prohibits the uptake of the bio farm programme, as it impacts their fertiliser sales.
- Farmers report that making and applying biochar and weeding instead of applying pesticides increases the need for labour. This increases their time and/or cost of cultivating palm, against a backdrop of existing labour shortages.



**Figure 5 Small farm who participates in the bio farm programme**

## 3. Findings

### 3.1 Availability of data and evidence

WAGS routinely collects, and could therefore provide, historic yield data for all farmers in the RSPO certified group, to enable a calculation of dynamic yield baseline (DYB) and additional biomass per farmer. The data collection started in 2014, when the group became RSPO certified. There is normally no yield data available from before farmers joined the group. WAGS collects all yield data in their (improved) management system, which launched in 2018.

There is an established recording procedure for the yield data which requires farmers to keep all their receipts from the FFB buyer (i.e. the mill or collecting centre) and document their running total yield. A Wild Asia team member visits the farmers monthly, or at least every 3 months, to record in the Wild Asia system the total FFB sold, based on the receipts documented by the farmers.

As an extra verification step, WAGS flags in their system all reported yields that are higher than 15 t/ha FFB. These yields are then double checked by a Wild Asia officer, by interviewing the farmer and re-checking the receipts.

During the pilot audit, receipts from the farmers were also cross-checked against the records obtained from the biggest mill in the area, to which several of the farmers supply. However, as the small farmers are independent and not contracted by a specific mill, they can choose to supply to other mills or via collection centres in the area, outside the control of WAGS. This means it was not always possible to cross-check an individual farmer's full yield at one mill.

The farmers reported that the mills tend to pay more per FFB than collecting centres (50 RM/t FFB more (or 10.76 €/t FFB) at the mill was quoted). However, farmers also reported that collecting centres tend to pay cash, which can be preferred by farmers compared to a mill paying monthly into an account, and the mills often have longer queues, meaning farmers might have to wait several hours to drop off their FFB at a mill.

Despite these existing processes, the yield data provided by WAGS shows quite a few datapoints that can be identified as outliers. WAGS have a data collection process in place which is clearly followed, and the process is able to clearly identify and flag yields that are higher than expected. However we raised some concerns that some historic yields from several years ago were still flagged, indicating that there is not sufficient follow-up or it is not always possible to subsequently solve yield data issues or verify yields that look like outliers. Outlier yields were both very high (e.g. 77 t/ha FFB) and very low (e.g. 0 t/ha). Sometimes, yields of zero indicated that the receipts had been lost. Whilst this is the conservative approach from an RSPO certification perspective, as no sustainable palm oil is claimed if the volume cannot be proven, **it should not be allowed to use these reported yields of zero in setting the dynamic yield baseline for low ILUC-risk certification**, if indeed there was some yield, but the receipts were lost. The resulting baseline would be too low.

During the pilot audit, the auditor found that the yield of one of the sampled farms did not correspond with the yield recorded by the mill. This caused concern toward the reliability of the data and the current process of accurately recording yield data. There are a few specific causes of lower data quality, or even lack of data, identified:

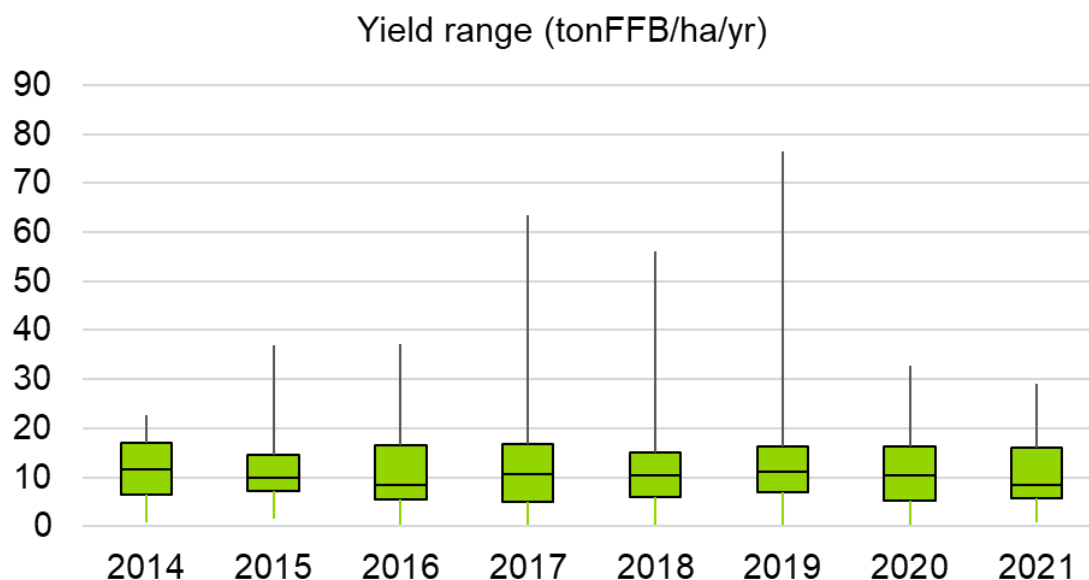
- Before the implementation of the (2018) management system the data quality was visibly lower (more errors / blanks) and is therefore considered to be less reliable.

- During COVID there was no harvest for a number of farmers, resulting in no yield.
- Some farmers did not retain all the documents necessary for Wild Asia's officer or they lost the documents. As a result, the yields recorded by WAGS might be too low, or even zero in some cases, and therefore do not reflect the actual FFB production by the farmer. This is hard for WAGS to verify especially if the farmer sells to more than one mill/collecting centre.
- It is possible that a farmer could take in FFB from another farmer and sell it under their name (their MPOB license), or that the farmer has more than one farm in the area that is not included in the RSPO certification. Whilst this is of course not allowed, it is a problem that WAGS has experienced before and it is difficult for them or an auditor to check and verify after the event.

Other reasons for large yield variations are:

- Between 2016-2018 (early 2019) the local government provided subsidies/free fertiliser to small holders. This was region-specific and not for the whole WAGS group.
- 2021 was a bad yield year because of heavy rain (weather impact).

We can therefore conclude that there remain quite some unexpected yield values in the data, as shown in Figure 6, and the available data was therefore not fully robust for all farms in the group. For the pilot calculations, we removed outliers and were still able to do a useful dynamic yield baseline calculation.



**Figure 6 Box plot of yield range Beluran group (t FFB/ha/yr)**

We conclude that the system to record and collect yield is implemented, but the verification with the buyer (mill or collection centre) is not fully covered as this is very difficult once farmers are free to sell their products to more than one place. WAGS can only verify yield with one mill and does not have a data exchange agreement with other mills or collection centres in the area. On the other hand, it is not possible for the mill to have insight of the

yield of the supplying farmers when the farmers sell their yield to more than one place, unless the mill is the First Gathering Point (FGP) and therefore the unit of certification. In this case, WAGS is the unit of certification (the one getting certified).

These issues may be reduced in the future with digital innovations like 'DIBIZ'<sup>2</sup>, an online supply chain data tool that collects and stores sustainability data throughout the supply chain and is designed to improve traceability. Some WAGS farmers are starting to use this tool to record their harvest yield. Often, big companies pay for the subscription and small farmers can use it for free. If managed well and rolled out to the full group, digital solutions like DIBIZ could be used as a traceability tool for the WAGS group and would improve the reliability of yield data.

## 3.2 Additionality test

### 3.2.1 Barrier analysis

During the site visit, the following barriers were identified that prevent WAGS group members to (fully) implement the additionality measures:

- **Access to Labour.** Farming isn't always the main occupation or source of income for small farmers. Some farmers are committed to another day job and have limited time to work on the farm. Another reason for limited time availability to work on the farm is that farmers could have multiple plots of land. Farmers could prioritise the management of another farm, like paddy, because it results in higher profit. In general, it is hard to find employees to help manage the farm because of labour market shortages in Malaysia. The farmers will have to compete with other industries, which could be more appealing to workers because of the strenuous physical effort needed for the farm management.
- **Access to finance.** The costs of fertiliser, chemicals and pesticides can be up to 40% of the farm management costs of small farmers. Small farmers will only buy fertiliser when they are in a financially stable position or when FFB prices are high, making the investment worthwhile. Farmers are not keen to borrow money from banks and banks are not keen to provide loans to small farmers as the risk is relatively high. This results in farmers only buying fertiliser if they have some (cash) money left, sometimes depending on the day of the month. The government is supporting small farmers with subsidies. However, these subsidies can be inconsistent over the years and different areas.

The barriers stated above indicate that the farmers can implement the additionality measures only when they have enough time and resources to do so, and that any specific incentive may help to overcome these barriers. It may be relevant to be aware that when FFB prices are very low, smallholders may even abandon their farms for some time.

The access to labour and finance are general barriers small farmers face to increase their yield. Two barriers that are specific to the implementation of the bio farm concept are:

- **Legal barrier.** Fundamental to the bio farm concept is the use of biochar. Biochar is made by the farmers on their land, using a stove with an open fire. National laws in Malaysia allow controlled fire on farmland, as long as material is brought back to land. However, MSPO and RSPO do not allow open fire on the land, and it was reported that this therefore has prohibited the uptake of the bio farm concept. WAGS helped to convince MSPO and RSPO that making biochar should be treated differently and allowed under the schemes.

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<sup>2</sup> <https://dibizglobal.com/>

- **Access to knowledge.** 30% of the WAGS farmers are not literate, which is a barrier for the dissemination of knowledge in the group. WAGS have to put in great efforts to train the farmers. Knowledge is disseminated from group members by trainings and on-site visits. Farmers who are literate still need these trainings, as it teaches implementation knowledge, knowledge that can't be looked up on the internet. High level knowledge, for example how one can improve their yield, can easily be found online. Specific knowledge on nutrient balance is already more difficult to find and understand. Implementation knowledge on, for example, how to produce fish fertiliser in practice, is even harder to find and implement without specific training and support.

There are several ways to overcome these barriers. The bio farm programme overcomes the access to knowledge barrier by providing training to the participating farms. The fertiliser credit scheme tries to overcome the access to finance barrier by providing the fertiliser at a reduced price to the small farmers.

There are two measures identified that could help to overcome some of the barriers in the future. First, the largest mill in the area was developing a staffing agency where they would share their workforce with the small farmers for reasonable prices. One of the key buyers of the mill would sponsor the project to ensure that small farmers could afford the hiring of staff. This project was however put on hold because of the COVID pandemic. A second project in development is the implementation of DIBIZ, a digital tool to record harvest yields and increase transparency in the supply chain. The tool itself would not increase the yields but is key for the traceability and reliability of yield data, which are crucial for low ILUC-risk certification. WAGS is exploring the implementation of DIBIZ. Farmers would need to have a smartphone, but the tool can be used offline to enable yields to be recorded during the harvesting, even out in remote fields where there is limited internet connectivity.

### 3.2.2 Validity of the additionality measures

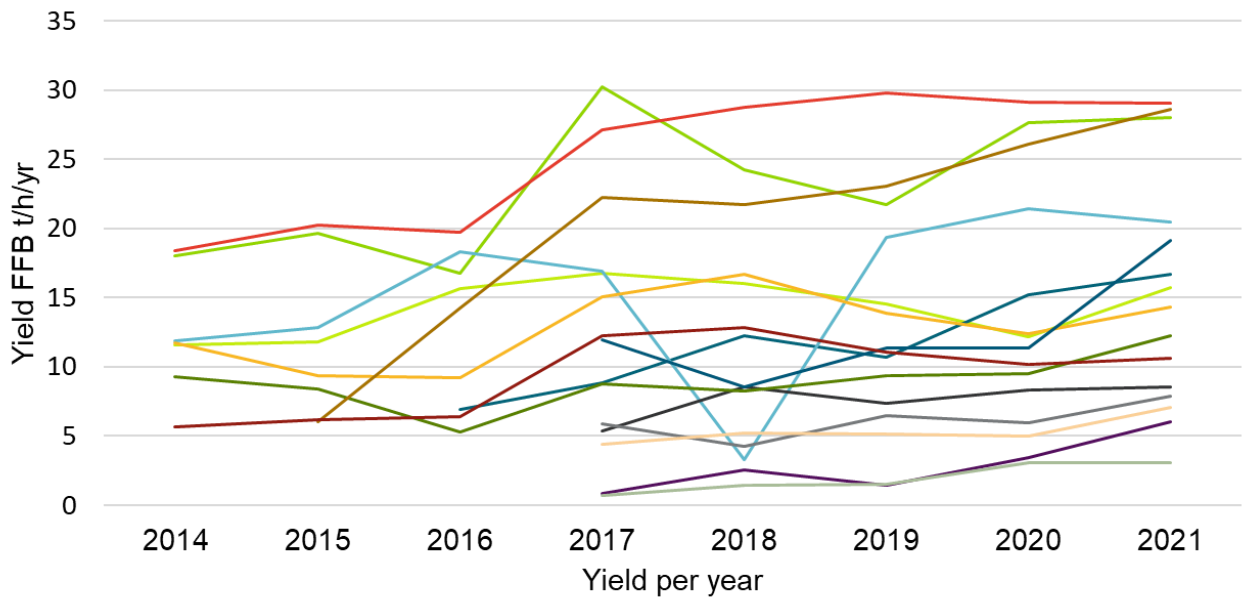
It is key to determine if the additionality measures applied at WAGS are valid, meaning that they go beyond business as usual. For this pilot, we have to consider the context of small farmers and the WAGS group to determine if additionality measures are valid. To determine this, an extra step that has to be taken is whether common practices have been persistently applied by a certain demographic (small farmers).

The fertiliser credit scheme is an effort from a mill to support small farmers without restricting them to supply to the mill. In the region, they are the only mill providing this support. However, large and medium sized palm oil plantations and organized smallholders all use fertiliser. It is common practice and part of the normal palm oil plantation operation to make sure the soil is fertile, protect the oil palm trees from pest/ disease or outbreak, and increase the yield which would already be expected in a business-as-usual scenario. Therefore, it is doubtful that this measure can be seen as beyond 'business as usual', unless it could really be proven that such a scheme is enabling common practices to be consistently applied by a certain demographic that has not applied it previously (this was not considered to be the case in this pilot).

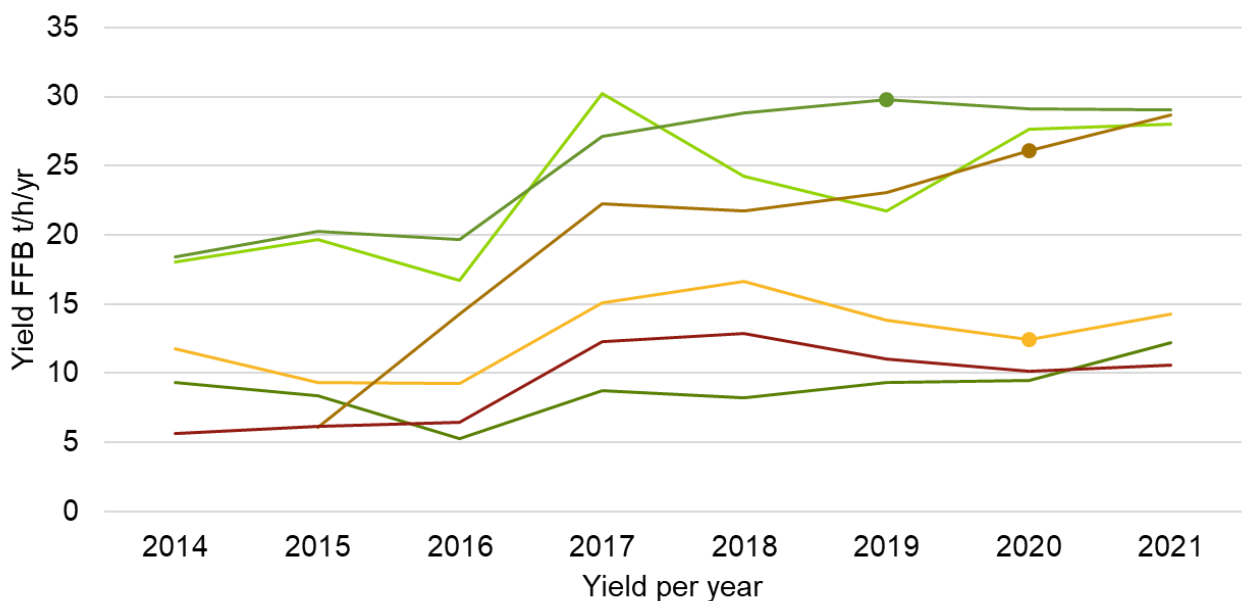
The concept of bio farms has the potential to be accepted as an additionality measure for low-ILUC risk certification. The pilot auditor did not express an explicit opinion whether the bio farm concept would pass the additionality test or not. In the opinion of the project team, the bio farm concept is not common practice for oil palm plantations and does go beyond business as usual. Once WAGS finalises the piloting stage and has reliable yield data, it can be determined if the measure reliably produces additional biomass.

### 3.3 Determining the dynamic yield baseline

The dynamic yield baseline has been calculated by the project team, based on the historical yield data provided by WAGS for the period 2014-2021, when the RSPO certification started. As discussed in chapter 3.1 there are several outliers in the data which raises concerns about its reliability. The outliers can also be seen in the historical yield data reported by the farmers that took part in the pilot audit sample, as shown in Figure 7 and Figure 8. In Figure 8, the dot indicates when the additionality measure was already taken in the past.



**Figure 7. Historical yield data pilot farms**



**Figure 8. Historical yield data pilot farms who have taken an additionality measure**



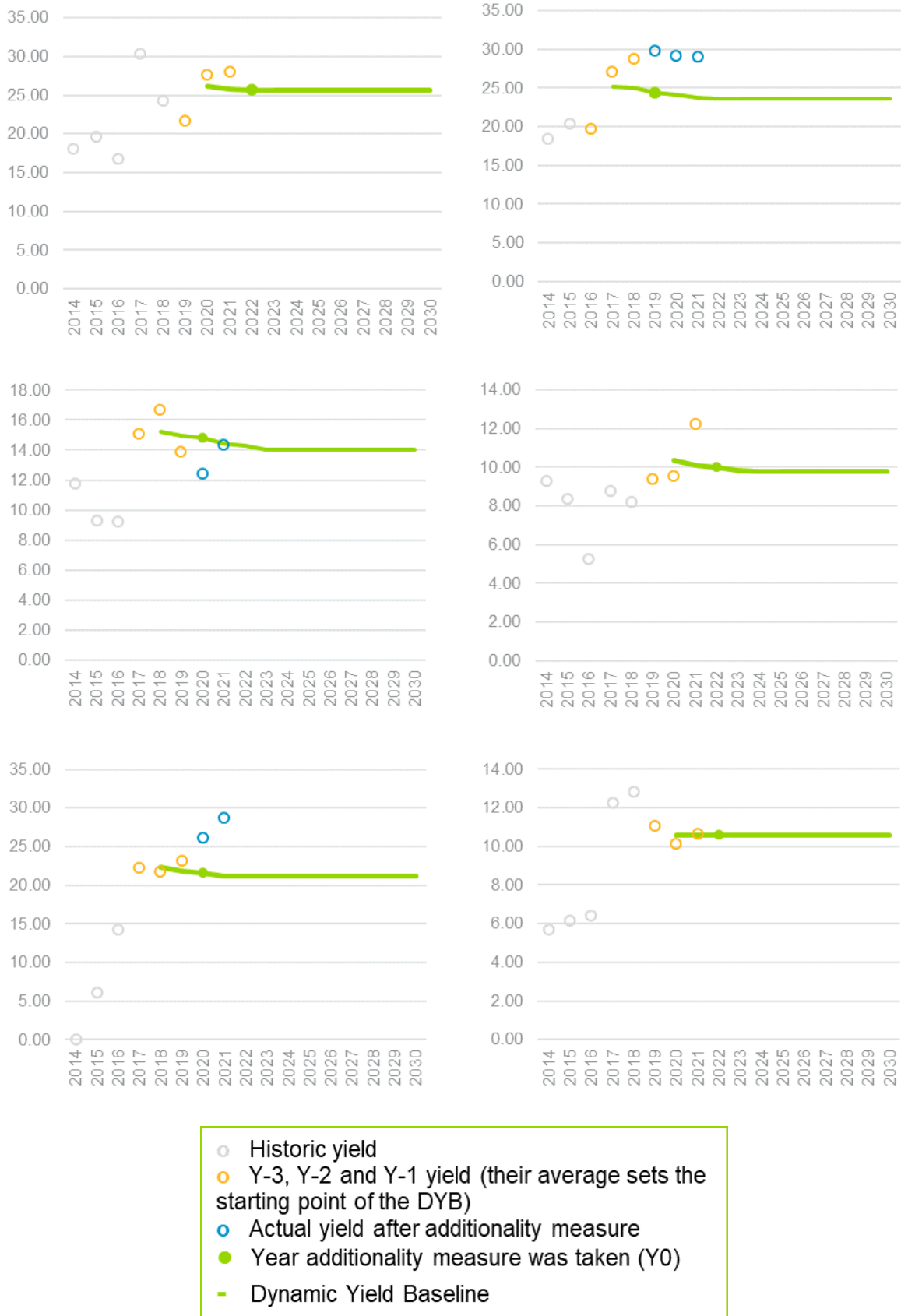
For six of the individual farmers of the group, Option 1A from the Implementing Regulation 2022/996 (using a normalised standard growth curve) was used to determine the dynamic yield baseline, based on the historical yield data obtained and with the outliers removed (**Figure 9**). The characteristics of small farmers make the standard dynamic yield baseline calculations different from larger sized plantations. In general, larger plantations replant their palm trees after 25 years. Trees over 25 years have lower FFB yields, and harvest becomes more difficult because the trees grow too tall to safely harvest the fruit. However, the small farmers interviewed in this pilot often had trees which are older than 25 years. This is because they may choose to delay the up-front cost associated with replanting, which also means that they have no yield (and therefore income) for the first few years that a new tree is planted. It is also possible for the small farmers to keep trees standing for longer especially if they did not use a lot of fertiliser and the trees therefore grew at a slower pace. Through the interviews, the small farmers explained that they would not expect to have trees older than 30 years, but it depends greatly on the market price of FFB. If FFB prices are high, farmers may choose to delay replanting further to benefit from the continued income whilst prices are high, and vice versa.

For the dynamic yield baseline calculation for plantations with trees beyond 25 years, the Implementing Regulation suggests to keep the curve flat beyond 25 years as there is little research data to support the shape of the curve beyond 25 years. This is the conservative approach when calculating additional biomass as the yield would be expected to decline steadily after 25 years, so keeping the baseline flat means that the baseline is slightly higher than if the baseline declined steadily. It is therefore recommended that a farmer sets the baseline for the 10-year validity of low ILUC certification (flat beyond 25 years), and once a farmer chooses to replant the trees (within that 10-year period), they should use the same dynamic yield baseline and compare their new yields (for the young trees) to the corresponding age of trees on that original baseline.

Depending on the organisation, the definition of a yield year to calculate the dynamic yield baseline differs. RSPO asks for calendar year metrics, whereas MSPO uses license period, which is the 12-month period before certificate. WAGS' system facilitates the dynamic yield baseline calculations for both definitions. For low ILUC-risk certification, the group can choose the definition of a year, as long as it is consistent over time.

### 3.4 Calculation of additional biomass

A dynamic yield baseline was calculated for six sample farms from within the group. Additional biomass was only calculated for three of the farms within the sample, because they took the additionality measure in the past and thus had actual yield that could be compared to the baseline. **Figure 9** shows the dynamic yield baselines and additional biomass for the six farms. As observed in the pilot, only relatively small volumes of additional biomass can be claimed as low ILUC-risk, and only in years in which the actual yield is above the dynamic yield baseline. Two of the three farms have additional biomass, one has lower yields compared to the baseline.



**Figure 9. Dynamic yields baselines for individual farms in the pilot audit sample**

An insight from the pilot interviews was that some small farmers do not always go to the effort of harvesting to the maximum amount of FFB, especially if they inherited the land but this is not their only job or source of income. Last year (2021) was a bad weather year, causing yields to be lower. However, in the year of the pilot CPO prices are very high (e.g. 1000 RM/t, compared to roughly 500-600 RM/t normally). Therefore, WAGS expects to see an increase in harvested crop, and therefore yield, in 2022 due solely to increased harvesting.

WAGS already calculates yield projections for RSPO. They make an estimate of the yield increase, as continuous productivity improvement is part of the RSPO certification framework. The yield estimates for RSPO concern the total yield of the group. Last year (2021), WAGS estimated a yield increase for the whole group of +3 t/ha/yr. RSPO uses this yield projection to prevent overclaiming of the certified biomass. If WAGS wants to claim a volume over the estimated amount of FFB, they have to ask RSPO for an extension and provide a justification.

### **3.5 Sustainability of the additionality measure**

The group is certified to RSPO, covering a broad spectrum of sustainability requirements. The application of fertiliser under the fertiliser credit scheme is aiming to bridge the gap between limited fertiliser use by the small holders to more regular fertiliser use by medium sized farms. This can be seen as application of best practices without increased sustainability risks.

The main yield increase measure reported was the implementation of a “bio farm” programme which promotes organic farming techniques to small holder farmers, which amongst others brought biodiversity benefits compared to other palm plantations. This can be seen as an increase in the overall sustainability of the farming approach by reducing the chemical inputs and actively promoting biodiversity.

### **3.6 Low ILUC for groups**

It can be expected that not all farmers within a group have taken an additionality measure or the same additionality measures. There will be differences within the group itself that will impact the dynamic yield baseline and additionality test. The example of WAGS’s existing RSPO group certification showed that existing groups can be very large and farmers have very different yield starting points. Therefore setting a baseline at the group level would not be appropriate for a group such as this. Furthermore, expecting all those farmers to take the same measure at the same time would not be a realistic pre-condition. Clear feedback both from the pilot participants and from the pilot auditor was that it would make sense for low ILUC-risk certification to be an optional add-on for members of a group, and to the extent possible low ILUC-risk certification should build on the existing group certification infrastructure.

Therefore, for low ILUC-risk certification, the dynamic yield baseline should be established at the individual farm (group member) level and actions (additionality measures) leading to low ILUC-risk biomass should be taken at the individual farm level, but both can be coordinated at group level. In principle, the additionality requirements (i.e. financial attractiveness test, barrier analysis or various exemptions) must also be met at the individual group member level, although there will be situations where the group members are in a similar situation and are taking similar additionality measures, and thus the additionality proof could be coordinated at the group level.

The dynamic yield baselines are calculated by the group leader for the farmers who applied the additionality measure, based on yield data and other data they collect from group members. During the audit, auditors need to check formulae and system set up for all the calculations and then for a sample of the farms. Auditors verify actual calculations and the underlying data, e.g., yields or financial cost assumptions, based on receipts and invoices.

The sample size to determine how many farms within the group should be audited onsite is typically square root for low and normal risk groups, adjusted for the risk level of the group. Appendix B shows the sample selection for RSPO group certification that is used in this pilot. This pilot auditor categorised this group as low risk. This was for two reasons. First, because it is based on the initial risk assessment on land-related sustainability requirements that has been conducted for the RSPO certification using the GRAS system (based on satellite imagery). This report shows the identification of any land use change done by the group members according to the definition of RSPO. The GRAS system result showed that none of the sample farms overlap with any no-go areas, or areas that have been announced as protected areas by local government or IUCN.

The second reason for the low risk level categorisation is the RSPO certification<sup>3</sup> of the group. The RSPO certification requires farmers to do a land use change analysis (LUCA) before the initial audit, and to establish and implement a management system by the central office. Low ILUC certification is designed to be additional to the REDII certification by voluntary schemes. Following this reasoning, all farmers who are already certified and show no red flags from the GRAS system could be classified as low risk. The pilot auditor reported that explicit reasons to increase the risk level of farms could be the quality of the management system, suspension by the other certification system, fraud cases and/or complaints from stakeholders.

Whilst this was a pilot and the number of farms visited was heavily defined by the local logistics and time available, as well as the willingness of the farmers to host a pilot visit, it is expected that for low ILUC certification in practice the low ILUC sub-group might be expected to be classified as high risk at the initial audit. This is because the mechanism is new and highly reliant on robust yield and mass balance auditing to ensure its credibility and hence success. This pilot showed there can be large variances in the group that could influence the low ILUC claim on biomass and therefore a high risk category would be appropriate. The high risk level determination will result in a relatively more expensive audit compared to lower risk levels, as the sample size will increase. Low ILUC sample size differs from regular audits as the sample has to reflect the different additionality measures taken and – if relevant – different approaches to the additionality test. If there is a variance in the group regarding the additionality measures taken and barriers experienced, then the sample should represent this variance. Also, outliers in the yield data will need to be verified, causing the sample size to further increase.

### **3.7 Definition of small holder**

For this pilot we referred to the definition of small holders from of the Delegated Regulation 2019/807 to judge which members of the group would be exempt from the additionality test. The average size of farms in this group was 3 ha, thus the majority of the group members did not meet the threshold of less than 2 ha small holder to be exempt from the additionality test, yet they did all meet the RSPO definition of small holder. There was no notable difference in the types of barriers experienced by the small holders interviewed in this pilot who farmed between 2 and 6 ha of land.

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<sup>3</sup> Please be aware that RSPO was only recognised by the Commission for REDI compliance, not for REDII

Several different definitions of small holders exist, depending on the location, size, crop type, source of income and risk. In Malaysian law (MPOB/MSPO), small holder is defined as below 100 acres (40.46 ha). This is also the RSPO national interpretation used in Malaysia. MPOB also defines small growers as between 100-500 acres and small estates as 500 ha or more up to everything that does not have a mill. It was reported in the pilot that under MSPO you sometimes see people splitting existing land rights within families to become small holders. The benefits of being a small holder (also under RSPO) might for example include access to subsidies that are only available for small holders, leniency of auditing, or access to the RSPO small holder premium.

Besides the size threshold, RSPO also uses two other criteria to identify small holders: the family should provide most of the labour on the farm and the farm should provide the principal source of income. Similar to RSPO, ISCC uses the term “independent small holder” (ISH) to describe farm where: a) the labour on the farm is principally provided by the family; b) the farm provides the major source of income for that family; c) on that land, smallholders are free to choose how to use land, which crops to plant and how to manage it; d) the land is not contractually bound to any oil mill and may receive support or extension services from government agencies or other support system; e) the planted oil palm area on the land owned by an ISH is less than 50 hectares. However, despite the 50 ha threshold, the current average size of an ISCC-certified independent small holder is 2-3 hectares<sup>4</sup>. A definition of small holder that is broader than just the size of the farms is useful to determine the different type of small holders.

## **3.8 Other**

### **3.8.1 Would low ILUC be worthwhile for farmers?**

For this pilot, farmers are certified to RSPO instead of a recognised REDII voluntary scheme, like ISCC. WAGS explained that although ISCC certified palm can earn a higher premium in the market, RSPO is more attractive for the group as the RSPO premium reaches the farmers via the book and claim system throughout the supply chain. For WAGS, 40% of the RSPO premium goes to WAGS and 60% to the farmers. As long as RSPO is not recognised by the Commission for REDII, it is not economically interesting for the group to apply for low ILUC risk certification. In future, this might change if, for example, there is a low ILUC premium.

### **3.8.2 Variances in farm size**

Farm sizes can vary over time. A farm can increase for example by inheritance or decrease in size because land is split between family members or because construction or roads that are built through the farm plots, or buying/selling plots of land. The low ILUC-risk certification relies on plot specific data for setting a baseline and calculating additional biomass. Changes in farm sizes should be addressed at the annual audit to ensure that the baseline and additional biomass calculation are for the appropriate land areas that are taking the eligible additionality measure.

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<sup>4</sup> ISCC 2018. Certification concept for Independent Smallholders (ISH) under ISCC. [https://www.iscc-system.org/wp-content/uploads/2017/10/ISCC-ISH-Certification-concept\\_PPT.pdf](https://www.iscc-system.org/wp-content/uploads/2017/10/ISCC-ISH-Certification-concept_PPT.pdf)

## 4. Conclusions and recommendations for low ILUC-risk methodology

### 4.1 Key conclusions from this pilot

Based on the above findings from the Malaysia group certification pilot, the main conclusions are:

- **Historic oil palm yields for small/medium sized farmers are available if they are part of a certified group.** The group manager has historic yield data of farmers from the beginning of the (group) certification. New farmers can be added to a group, whereafter the yield data collection typically starts. Data before the group certification is normally not available. Low ILUC certification is designed as an add on to existing certification. If the low ILUC certification is requested during an initial certification of a group, auditable historic yield data may not be available.
- **Reliable and auditable yield data is challenging for farmers who are not contracted to one mill/collection centre.** It is very difficult to verify yield data if the group doesn't have a data exchange agreement with all mills and collection centres in the area, which in practice is not feasible. Only when farmers sell their feedstock to one or a limited amount of mills/collection centres can the auditor verify the yield data at a mill. Otherwise, the group leader is the only party who can be responsible to oversee the full yield from the small farmers.
- **Low ILUC certification relies on the availability of accurate, robust and good quality yield data, which was not always the case for these small farmers, yet.** The group who worked on this pilot had an established system in place to collect and record yield data from farmers and cross check it against farmers' mill receipts. If no receipts are available, no yield is recorded. If yields are unexpectedly high, this is flagged in the system and the group leader (and auditor) follows up with the farmer to double check yields. Whilst this system was clearly operational, and the data quality has visibly improved in recent years (also due to the introduction of mandatory MPOB licenses) there remained a significant number of data points that seemed to be too high and had been flagged, but not resolved. Too high yields are not a risk for baseline setting, but would be an issue if they occurred during the period additional biomass is being claimed. Historical yield data points of zero (because the farmer has no mill receipts) should not be used when setting the baseline. Whilst no data system will ever be perfect, the low ILUC certification approach is so sensitive to robust yield data that clearly there would need to be extra auditor effort to check abnormal yield data points in practice. Where possible, digital solutions to record yield should be encouraged as well as participating in the Union Database via a recognised voluntary scheme.
- **The low ILUC-risk certification uses the existing group certificate infrastructure as much as possible. Variation should be allowed within a group in the additionality measure applied by different group members and (whether and) how the members pass the additionality test.** In the pilot, two different additionality measures are taken by some of the farmers within the existing RSPO-certified group. Not all members of the group implemented the additionality measures and not all implemented them at the same time. Both additionality measures were audited against the low ILUC-risk criteria. Only the bio farm concept could be seen as beyond business as usual and therefore only those farmers would be eligible to claim low ILUC-risk certification. In case both additionality measures would have passed the audit, both sub-groups would have fallen within the same low ILUC group certification. Farmers who wish to comply with the low

ILUC-risk criteria – and therefore claim low ILUC-risk biomass – must set individual dynamic yield baselines and pass the additionality test. A sub-group of farmers who apply the same additionality measure could pass the additionality test collectively.

- **Farmers who did not fully implement the additionality measure will have lower amounts of additional biomass.** For the bio farm concept farmers first want to test the additionality measure by implementing the practice on a sub-plot. Partial implementation of the additionality measure on farm level makes it difficult to draw conclusions on the potential additional biomass that could be claimed, solely based on the provided historical yield data.
- **The audit sample size for low ILUC group certification should reflect the different composition of the group, including different additionality measures.** WAGS has two additionality measures within their group and not all group members are applying additionality measures. For the pilot audit, both additionality measures are present in the sample of farmers checked. This will be further explained in the certification guidance.
- **More guidance is needed on how to deal with yield being recorded as zero while there was actual yield.** There are two reasons why yield can be recorded as zero – either there was no harvest or there are no receipts for the farmer yield to be verified. In the latter case, when there was actual yield but no receipts, existing certification schemes would require that the conservative approach is to record no yield and therefore not to claim any certified biomass. However, for setting a dynamic yield baseline in the low ILUC approach, including a year of zero yield would set the baseline too low. If data is missing, it should be replaced with the best available, but also conservative, alternative for setting the baseline. For palm, as it is harvested continuously throughout the year, if mill receipts are missing for one or a couple of months, the missing data months could be substituted with data from other months to ensure a full year of yield data. Ultimately, the auditor is responsible to decide whether the data is of sufficient quality to set a representative dynamic yield baseline for the delineated plot.
- **Trees over 25 years old should be characterised in the dynamic yield baseline.** The small farms in this pilot often had trees on their plantations which are older than 25 years. This can be expected, especially if they did not use a lot of fertiliser, causing the tree to grow at a slower pace as height is a key limiting factor for harvesting fruit from older trees. The guidance shall clarify that a dynamic yield baseline remains flat after the trees reach 25 years of age, until the farmer decides to replant.
- **More guidance is recommended for economic operators and auditors for the non-financial barrier analysis.** The guidance and methodology still remain open for interpretation, whether a non-financial barrier is eligible for certification or not. Auditors will need further guidance to judge the validity of non-financial barrier claims. A decision tree will be added to the certification guidance.
- **The definition of small holders differs worldwide.** For this pilot we used the definition of the Delegated Regulation 2019/807. The group met the RSPO definition of a small holder group but didn't meet the threshold as defined in the Delegated Regulation 2019/807. Worldwide there are different definitions of small holders, depending on the location, size, crop type, source of income and risk.
- **Small holders face more inherent barriers but may not have the resources to access certification or prove they comply with the criteria.** In this pilot we saw that small(er) farms might be more affected by non-financial barriers than larger operators,

due to a limited access to knowledge and agronomic expertise, and more limited access to financial reserves, loans, subsidies, etc. In phase 1, large pilot companies described non-financial barriers but evidence was not provided to show that those barriers applied in their case. Barriers are expected to affect smaller operators more than larger operators who can more easily arrange access to finance and inputs, for example. Small holders less than 2 ha are exempt from the additionality test but similar barriers will also apply to small farmers. Whilst we do not recommend that the definition of small holders who are exempt from the additionality test is changed, we do recommend that auditors allow more flexibility for small farmers to use the barrier test even for barriers for which a price could in theory be estimated.

## 4.2 Improvements to the certification guidance

Several aspects are added to the certification guidance based on the insights from the Malaysia phase 2 pilot, specially related to group certification, small famers and determining the dynamic yield baseline for palm.

For groups that are already certified against the REDII, the existing group certification infrastructure should be followed to limit the administrative burden. Continuing on already established set-ups, low ILUC-risk certification can be a sub-group within an existing group certification under a certified first gathering point or central office.

The certification guidance further elaborates on how to deal with outliers in the data. In this pilot we learned that recording errors can be more frequent for smaller farms compared to larger farmers. These outliers in that data should be discarded from the dynamic yield baseline calculation. Auditors should be especially conscious to discard very low or zero yield from the baseline if that was recorded because mill receipts / evidence was lost. This is common for regular certification to avoid that sustainable material is not claimed when the evidence cannot be provided, but a zero yield should be avoided in setting a dynamic yield baseline when there was actually yield as this would artificially lower the baseline. The calculation of additional biomass needs to be based on robust, evidence, observed yield. High outliers need to be checked very carefully to ensure the claims are robust. Both aspects are specified in the certification guidance.

Another finding was that small farms do not always have the financial and labour capacity to replant. Therefore, the tree population is found to be older (>25 years) compared to large plantations. After 25 years, the yield would be expected to continue to decline. However, as the typical lifetime of an oil palm tree is around 25 years, there is a lack of data to support the magnitude of the decline after 25 years. Thus, a conservative approach is taken and the certification guidance assumes that the yield curve would remain flat at the 25-year level.



## Appendix A. Audit details

**Table 1. Audit attendees**

Role	Name	Function
Lead Auditor	Mohd Musa Bin Mohd Yusof	Control Union auditor
Auditee	Peter Chang	WAGS Program Director
Auditee	Aloysius Jublee Intang	WAGS Assistant Group Manager
Auditee	Hassan Abdul	WAGS Smallholder East Manager
Auditee	Dolores Julian	WAGS Admin Sr. Manager

**Table 2. Audit itinerary**

Step	Schedule of events	Items covered	Date
1	Opening meeting	<ul style="list-style-type: none"> <li>• Introduction of attendees</li> <li>• Review of Confidentiality</li> <li>• Agreement Discussion of audit schedule</li> <li>• Questions/Answers</li> </ul>	27 June 2022
2	Compilation of pilot information	<ul style="list-style-type: none"> <li>• Review management plan</li> <li>• DYB Method and demonstration of additionality</li> <li>• Financial Attractiveness Analysis</li> <li>• Traceability</li> </ul>	27 June 2022
3	Farm visit (3x)	<ul style="list-style-type: none"> <li>• Field verification on additionality</li> <li>• Verification process</li> <li>• Gather Outstanding Information</li> </ul>	28 June 2022
4	Mill visit	<ul style="list-style-type: none"> <li>• Yield data verification</li> <li>• Review and discussion of DYB method and demonstration of additionality</li> </ul>	29 June 2022
5	Closing meeting	<ul style="list-style-type: none"> <li>• Presentation of findings</li> <li>• Review of audit summary</li> <li>• Questions and answers</li> </ul>	30 June 2022

## Appendix B. RSPO sample method for group certification

Table 3. Example RSPO sample method

Sample size formula	Sample Calculation
<p><b><math>s = r \times \sqrt{n}</math></b></p> <p>s: sample size r: risk factor n: total number of group members.</p>	<p><b>Regular risk</b> n: 565 smallholders r: 1.0 <math>s = 1.0 \times \sqrt{565}</math> s = 23.77 s = 24 Smallholders</p> <p><b>High-risk</b> n: 565 smallholders r: 2.0 <math>s = 2.0 \times \sqrt{565}</math> s = 47.53 s = 48 smallholders</p>

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