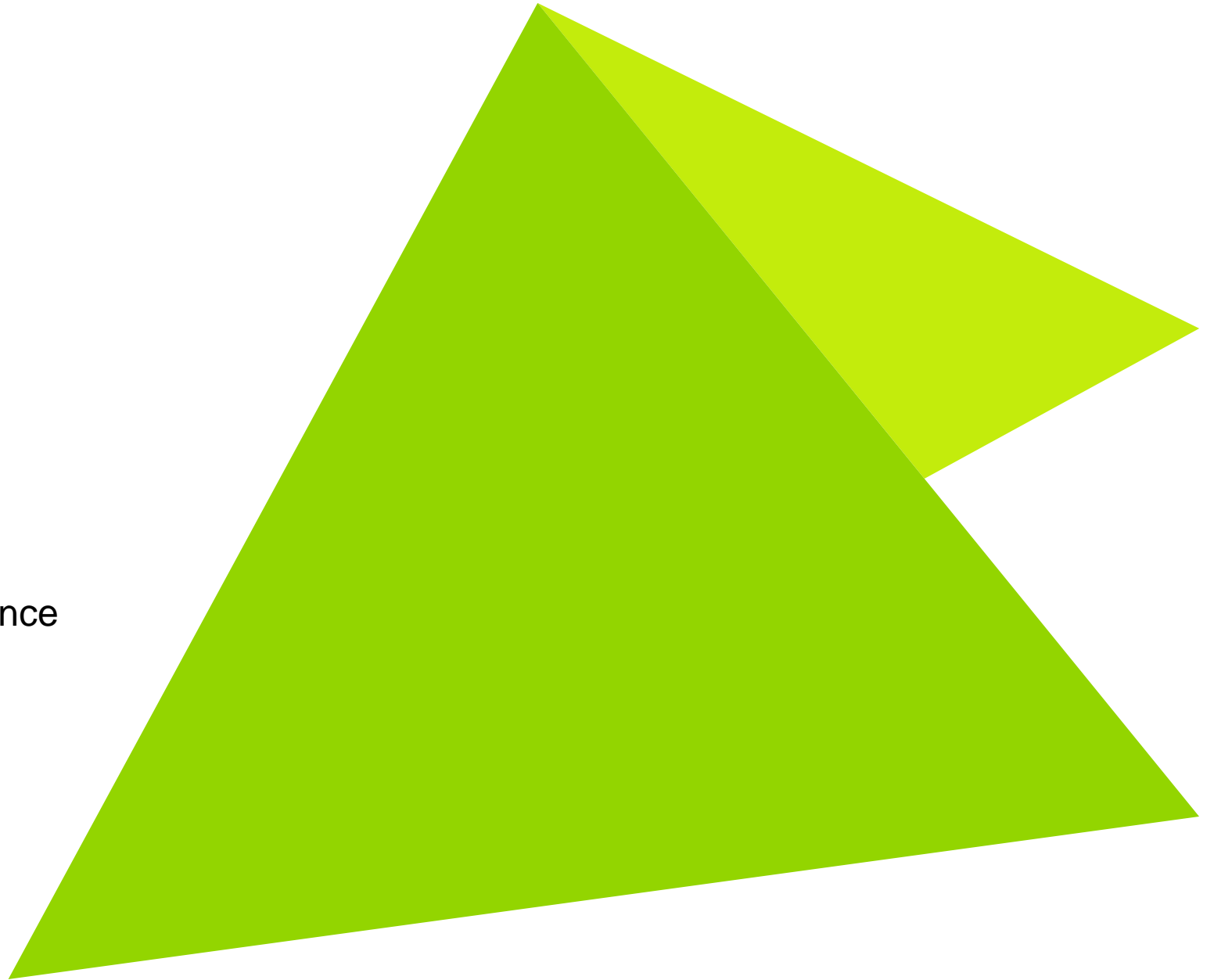


Low ILUC-risk certification

Development of draft certification guidance
<https://iluc.guidehouse.com/>

Stakeholder webinar

19 November 2020



Housekeeping

- Please post Questions in the question box. At the end of each section, the presenter will answer questions as posted in the question box.
- The slides and a summary of the Q&A will be distributed after the workshop.
- We welcome any remarks or feedback after the meeting by email to ILUCpilots@Guidehouse.com

Aim of the meeting

Introduce the proposed low ILUC-risk certification steps

- This presentation includes:
 - Introduction to the low ILUC-risk Certification Guidance and Pilot projects
 - Overview of the legal framework on which the low ILUC-risk certification guidance is based
 - Introduction to the proposed low ILUC-risk certification and auditing process and steps
 - Information economic operators will need to include in their Management Plan
 - How to determine land status or calculate a “dynamic yield baseline”
 - How to calculate and claim low ILUC-risk biomass
- This is the draft certification guidance, based on Delegated Regulation 2019/807
- The approach and guidance will now be piloted
- We welcome any remarks or feedback after the webinar, to feed into the pilot projects

Legislative and institutional framework on High/ Low ILUC

Legal path to implement/ enforce the High/ Low ILUC concepts

- The Renewable Energy Directive (REDII) recast- introduction of the High-ILUC concept and the option of Low ILUC certification (December 2018);
- Delegated Regulation to determine High ILUC-risk feedstock for which a significant expansion of the production area into high carbon stock land is observed and the criteria for Low ILUC certification of biofuels, bioliquids and biomass fuels (March 2019);
- Upcoming Commission Implementing Regulation on Implementing rules for voluntary schemes under REDII (to be adopted 2021) will also cover a module on Low ILUC certification- the guidance being developed on Low ILUC certification is a major contribution for its preparation.

Overview of ILUC projects

Indirect land use change related to bioenergy

Indirect land-use change occurs when the cultivation of crops for biofuels, bioliquids and biomass fuels displaces traditional production of crops for food and feed purposes.

Additional demand increases the pressure on land and can lead to the extension of agricultural land into areas with high-carbon stock, such as forests, wetlands and peatland, causing additional GHG emissions

High ILUC-risk fuels

*Biofuels, bioliquids and biomass fuels produced from food and feed crops for which a **significant expansion** of the production area into land with **high-carbon stock** is observed.*

- ➔ Consumption limited by a specific and gradually decreasing limit per Member State
- ➔ Feedstock Expansion Report (Delegated Regulation 2019/807) sets values to determine high ILUC-risk crops

Low ILUC-risk fuels

*Fuels produced in a way that **mitigate ILUC emissions**, either because they are the result of **productivity increases** or because they come from crops grown on **abandoned, severely degraded or unused land**.*

- ➔ Exempted from the specific and gradually decreasing limit.
- ➔ Specific guidance on how low ILUC risk can be demonstrated

ILUC Lot 1 - High ILUC-risk fuels review

Review of all relevant aspects of the Feedstock Expansion Report



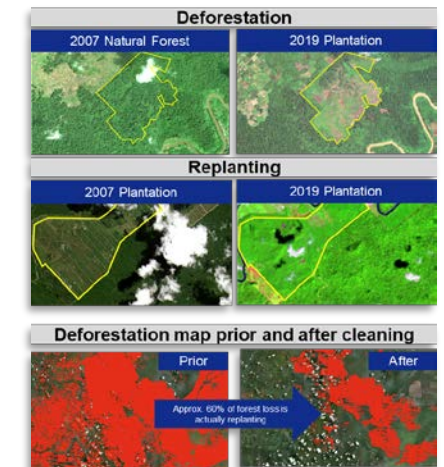
- Statistical analysis to calculate global annual expansion per feedstock since 2008
- Feedstocks in scope for full project are maize, palm oil, rapeseed, sunflower seed, soybean, sugar beet, sugar cane and wheat

- Global and regional mapping of cropland expansion into high carbon stock land (forests, peatlands)
- Regional mapping in Indonesia/Malaysia & Amazon basin

- Calculation of energy yields per feedstock

- GHG emissions related to expansion in high carbon stock land

- Stakeholder consultation & review of latest scientific information



Development of low ILUC-risk certification guidance

Objective

Develop the key requirements needed to certify low ILUC-risk biofuels, bioliquids and biomass fuels, based on the Delegated Regulation issued by the European Commission

- Develop guidance document to provide guidelines to allow the certification of low ILUC-risk biomass
- Intended as a low ILUC-risk certification module that could be used as an “add-on” to any EC-recognised voluntary scheme
- Includes requirements for reliability, transparency and independent auditing

Timeline

September 2019 to December 2020

Progress

- ✓ Draft guidance developed
- ✓ Case studies conducted to further develop key aspects of the guidance
- ➔ Following feedback from this webinar, the draft guidance will be transferred to the low ILUC-risk Pilot Project to be tested and further developed

ILUC Lot 2 – Low ILUC-risk Pilot project

Testing the approach to low ILUC-risk certification

Objective

Support the European Commission to:

- Test certification guidance for low ILUC-risk biofuels as specified in the Delegated Regulation 2019/807
- Review the certification approach set out in the feedstock expansion report

Timeline

2020-2022

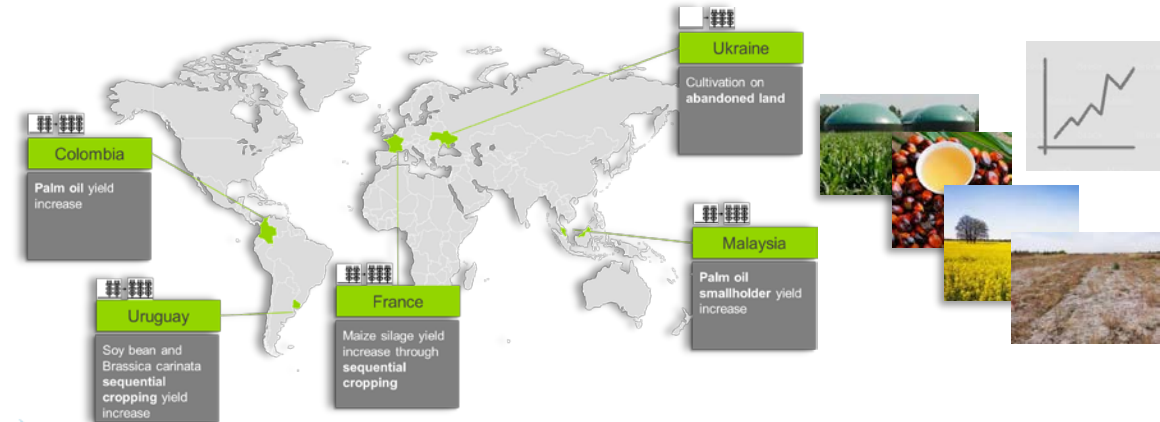
Website

<https://iluc.guidehouse.com/>

Pilot Design

The pilots have been designed to cover a broad range of:

- Crops - palm, soy, maize biogas
- Geographies - SE Asia, Latin America, Europe
- ILUC solutions - yield increase, abandoned land



Low ILUC-risk certification guidance

Legal framework: REDII and ILUC Delegated Regulation

- The [Delegated Regulation](#) (EU) 2019/807 of March 2019 defines high ILUC-risk feedstocks and low ILUC-risk biofuels
- The [REDII](#) explains the concepts of high ILUC-risk feedstock and **low ILUC-risk certification**

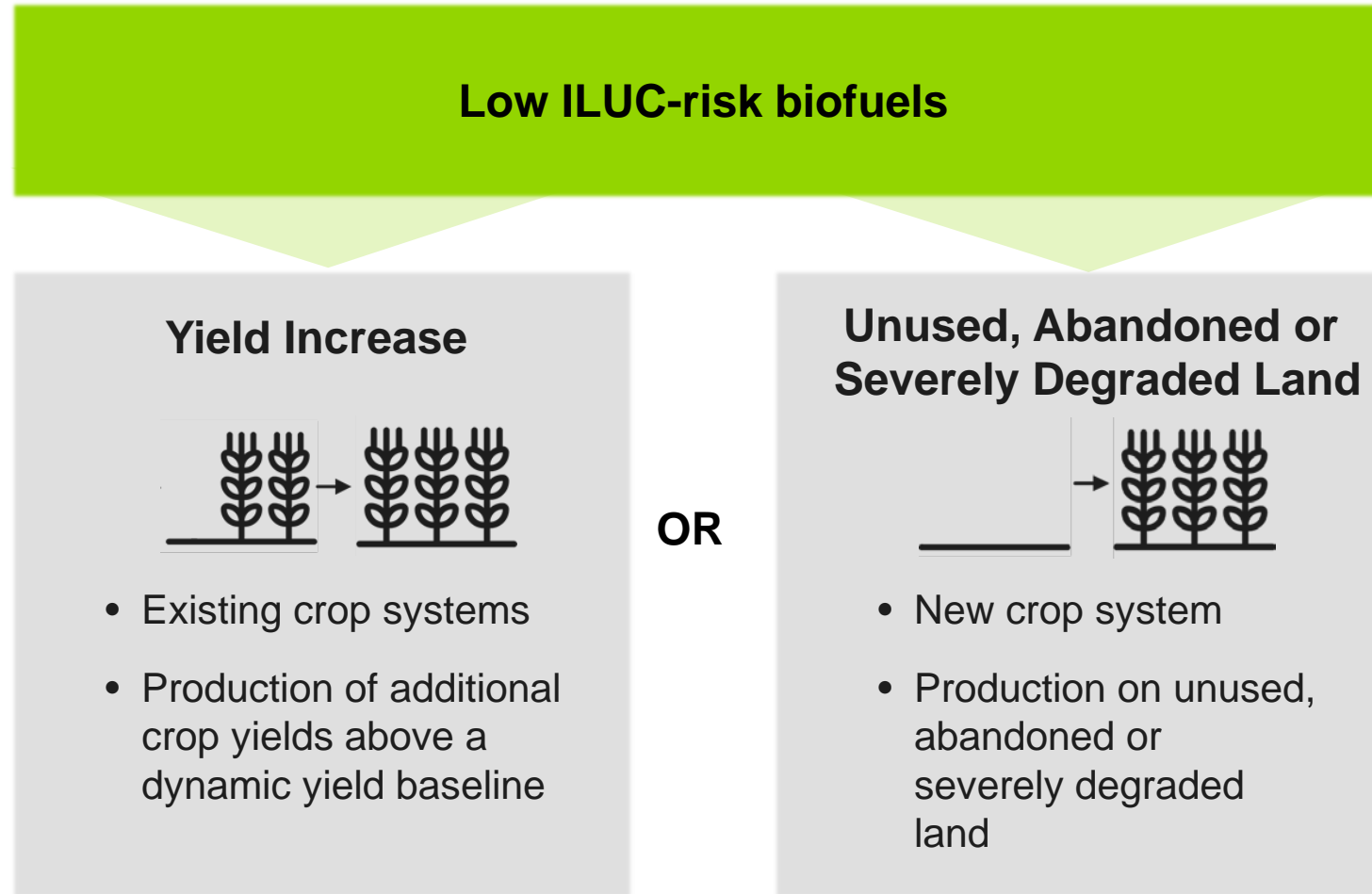
Fuels produced from feedstocks considered high ILUC-risk will be subject to a cap set at the 2019 consumption level and will be phased out by 2030, unless they can be certified as low ILUC-risk

High ILUC-risk feedstocks are determined by a formula combining crop expansion values with productivity factors and energy yield – currently only palm oil is labeled as high ILUC-risk feedstock

Low ILUC-risk fuels are those that can demonstrate:

- Produced from '**Additional feedstock**' (e.g. through yield increase or unused/abandoned/severely degraded land)
- Meets one of the following tests of '**Additionality**':
 - Financial attractiveness or non-financial barrier analysis
 - Production on abandoned or severely degraded land
 - Applied by smallholders (<2ha)

Two options for Low ILUC-risk biofuels



Delegated Regulation

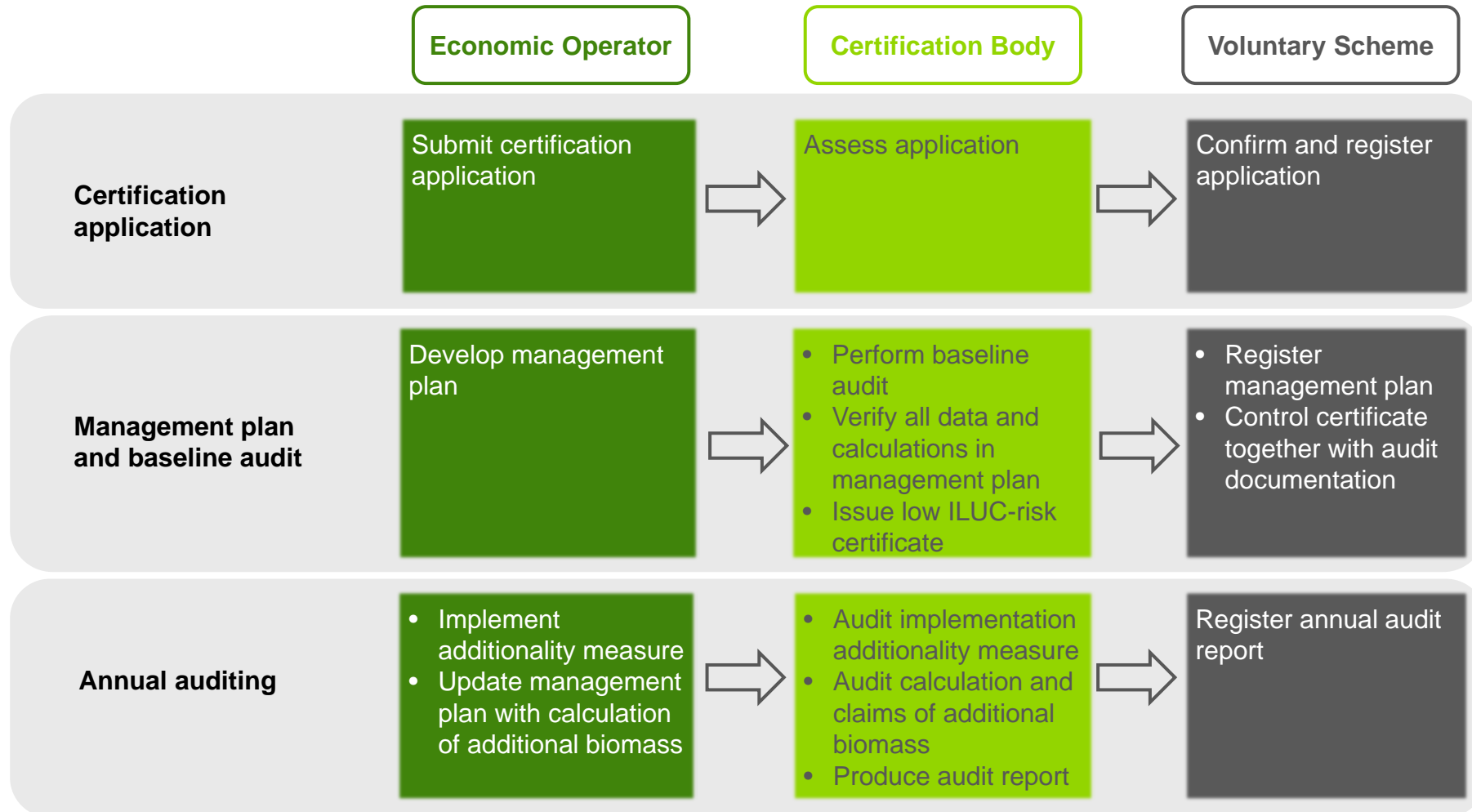
Article 4

Article 4

General criteria for certification of low indirect land-use change-risk biofuels, bioliquids and biomass fuels

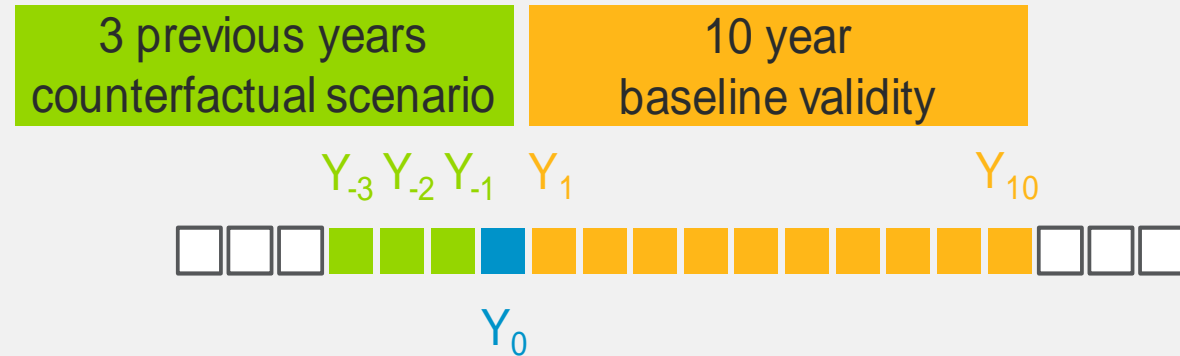
1. Biofuels, bioliquids and biomass fuels may only be certified as low indirect land-use change-risk fuels if all the following criteria are met:
 - (a) the biofuels, bioliquids and biomass fuels comply with the sustainability and greenhouse gas emissions saving criteria set out in Article 29 of Directive (EU) 2018/2001;
 - (b) the biofuels, bioliquids and biomass fuels have been produced from additional feedstock obtained through additionality measures that meet the specific criteria set out in Article 5;
 - (c) the evidence needed to identify the additional feedstock and substantiate claims regarding the production of additional feedstock is duly collected and thoroughly documented by the relevant economic operators.
2. The evidence in point (c) of paragraph 1 shall at least include information on the additionality measures taken to produce additional feedstock, the delineated areas on which these measures have been applied and the average yield achieved from the land where these measures have been applied over the 3-year period immediately preceding the year when the additionality measure was applied.

Certification application and audit process by stakeholder

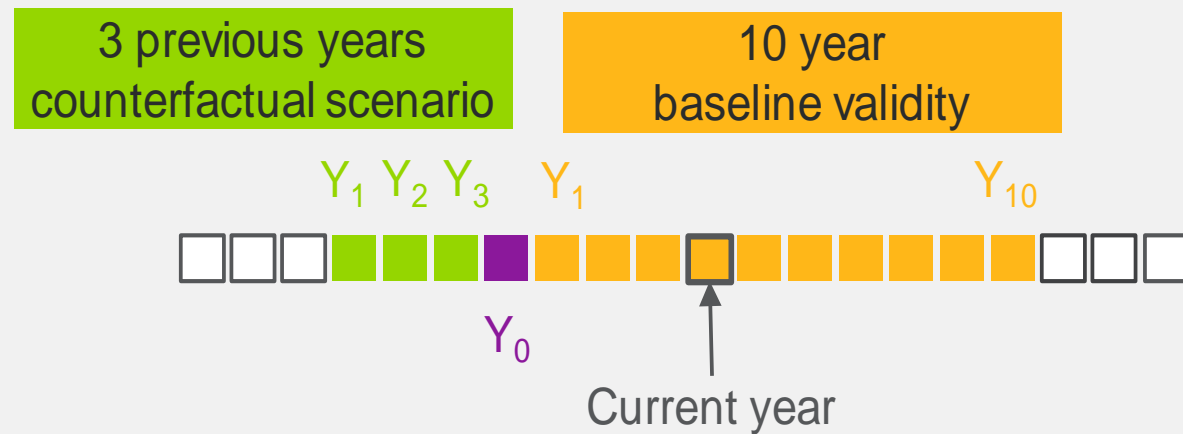


“Baseline validity” of 10 years

Additionality measure
taken in the present day



Additionality measure
taken in the past



Auditing

Delegated Regulation Article 6

Article 6

Auditing and verification requirements for certification of low indirect land-use change-risk biofuels, bioliquids and biomass fuels

1. For the purpose of certifying low indirect land-use change-risk biofuels, bioliquids and biomass fuels, economic operators shall:
 - (a) submit reliable information substantiating their claims ensuring that all requirements set out in Articles 4 and 5 have been duly fulfilled;
 - (b) arrange for an adequate standard of independent auditing of the information submitted and an adequate level of transparency reflecting the need for public scrutiny of the auditing approach; and
 - (c) provide evidence that audits are conducted.
2. The auditing shall verify that information submitted by economic operators is accurate, reliable and protected against fraud.
3. In order to demonstrate that a consignment is to be considered as a low indirect land-use change-risk biofuel, bioliquid or biomass fuel, economic operators shall use the mass balance system set out in Article 30(1) of Directive (EU) 2018/2001. Voluntary schemes may be used to demonstrate compliance with the criteria set out in Articles 4 to 6 in accordance with Article 30 of Directive (EU) 2018/2001.

Auditing requirements

In addition to existing EC-recognised voluntary scheme requirements

- Onsite **baseline audit** followed by **annual additionality audits**
 - Audit cycle aligned with main voluntary scheme to ensure cost efficiency
 - Auditor should confirm implementation and sustainability of additionality measure
- Group certification should be possible
 - In principle, we expect group members may need to set individual baselines, but the audit approach can be based on a sample (in line with existing voluntary scheme approach) – to be tested in the pilots
- Per consignment, the economic operator should declare **low ILUC-risk claim** as part of the sustainability characteristics
- NB. key difference to “normal” certification is that the low ILUC-risk **claim can only be applied to the additional biomass**. Therefore, a single farm will produce both additional and non-additional biomass

Management plan steps

How to develop management plan



Definition of Additionality Measure

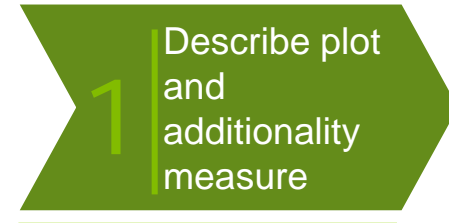
Delegated Regulation Article 5

Article 5

Additionality measures

1. Biofuels, bioliquids and biomass fuels may only be certified as low indirect land-use change-risk fuels if:
 - (a) the additionality measures to produce the additional feedstock meet at least one of the following conditions:
 - (i) they become financially attractive or face no barrier preventing their implementation only because the biofuels, bioliquids and biomass fuels produced from the additional feedstock can be counted towards the targets for renewable energy under Directive 2009/28/EC or Directive (EU) 2018/2001;
 - (ii) they allow for cultivation of food and feed crops on abandoned land or severely degraded land;
 - (iii) they are applied by small holders;
 - (b) the additionality measures are taken no longer than 10 years before the certification of the biofuels, bioliquids and biomass fuels as low indirect land-use change-risk fuels.

Describe delineated plot and additionality measure



Delineated plot

Land tenure and existing certification:

- Current land use and recent (3-5 yr) history
- Sustainability certification;
- Acquisition dates if newly acquired

Description of delineated plot:

- Location (geographic coordinates)
- Surface area
- Crop rotation system if applicable

Additionality measure

Verifiable additionality measure:

- Qualitative situation of the farm/plantation/plot before the additionality measure
- Description of the additionality measure
- Timeline over which it was or will be applied
- Explanation of the expected future yield growth

Delegated regulation

Article 2

Definitions

For the purposes of this Regulation, the following definitions apply:

- (1) 'oil crops' means food and feed crops such as rapeseed, palm, soybeans and sunflower, that are not starch rich crops and sugar crops that are commonly used as feedstock for the production of biofuels, bioliquids and biomass fuels;
- (2) 'unused land' means areas which, for a consecutive period of at least 5 years before the start of cultivation of the feedstock used for the production of biofuels, bioliquids and biomass fuels, were neither used for the cultivation of food and feed crops, other energy crops nor any substantial amount of fodder for grazing animals;
- (3) 'abandoned land' means unused land, which was used in the past for the cultivation of food and feed crops but where the cultivation of food and feed crops was stopped due to biophysical or socioeconomic constraints;
- (4) 'severely degraded land' means land as defined in point 9 of Annex V, part C to Directive (EU) 2018/2001;
- (5) 'additionality measure' means any improvement of agricultural practices leading, in a sustainable manner, to an increase in yields of food and feed crops on land that is already used for the cultivation of food and feed crops; and any action that enables the cultivation of food and feed crops on unused land, including abandoned land, for the production of biofuels, bioliquids and biomass fuels;
- (6) 'additional feedstock' means the additional amount of a food and feed crop produced in a clearly delineated area compared to the dynamic yield baseline and that is the direct result of applying an additionality measure;
- (7) 'dynamic yield baseline' means the average yield from the delineated area where an additionality measure has been taken, calculated over the 3-year period immediately preceding the year of the application of such measure, taking into account the average yield increase observed for that feedstock over the previous decade and the yield curves over the life time in case of permanent crops, excluding yield fluctuations;

Possible examples of additionality measures

(Non exhaustive list)



Additionality category	Additionality Measure	Example
Replanting (for perennial crops)	Choice of crop varieties	Higher yielding variety, better adaptation to climatic conditions
Mechanisation	Machinery	Could include sowing, precision farming, harvesting or reduction of post-harvest losses
Multi-cropping	Sequential cropping	Introduction of second crop on same land in the same year
Management	Soil management	Mulching instead of ploughing, low tillage
	Fertilisation	Optimisation of fertilisation regime, use of precision agriculture
	Crop protection	Change in weed, pest and disease control
	Pollination	Improved pollination practices
	Other	Leaves room for innovation, combinations of measures and unforeseen developments

Check sustainability of Additionality Measure

2

Check
sustainability
of measure

The additionality measure should lead, **in a sustainable manner**, to an increase in yields (DR Article 2(5)).

As a baseline, **the REDII sustainability criteria** will be used to demonstrate that the additionality measure is sustainable.

- The certification status of the economic operator will be checked as part of the baseline audit and on an on-going basis as part of the annual audits, which should be conducted in line with the existing voluntary scheme audits
- EC-recognised voluntary schemes often (although not always) go beyond the REDII sustainability criteria

We propose that in addition:

- **Auditor should flag any potential sustainability risks** from the implementation of the additionality measure that they come across during the baseline audit.
These risks would then be checked as part of the additionality audit.
- **Economic operators should show that they have measures to identify and mitigate any risks** in the management plan and implementation of this should be checked as part of the additionality audit.

Definition of Additionality Measure

Delegated Regulation Article 5

Article 5

Additionality measures

1. Biofuels, bioliquids and biomass fuels may only be certified as low indirect land-use change-risk fuels if:
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Demonstrate Additionality

Two equal options to prove additionality as part of the management plan:

- **Financial attractiveness** or
- **Non-financial barrier** analysis.

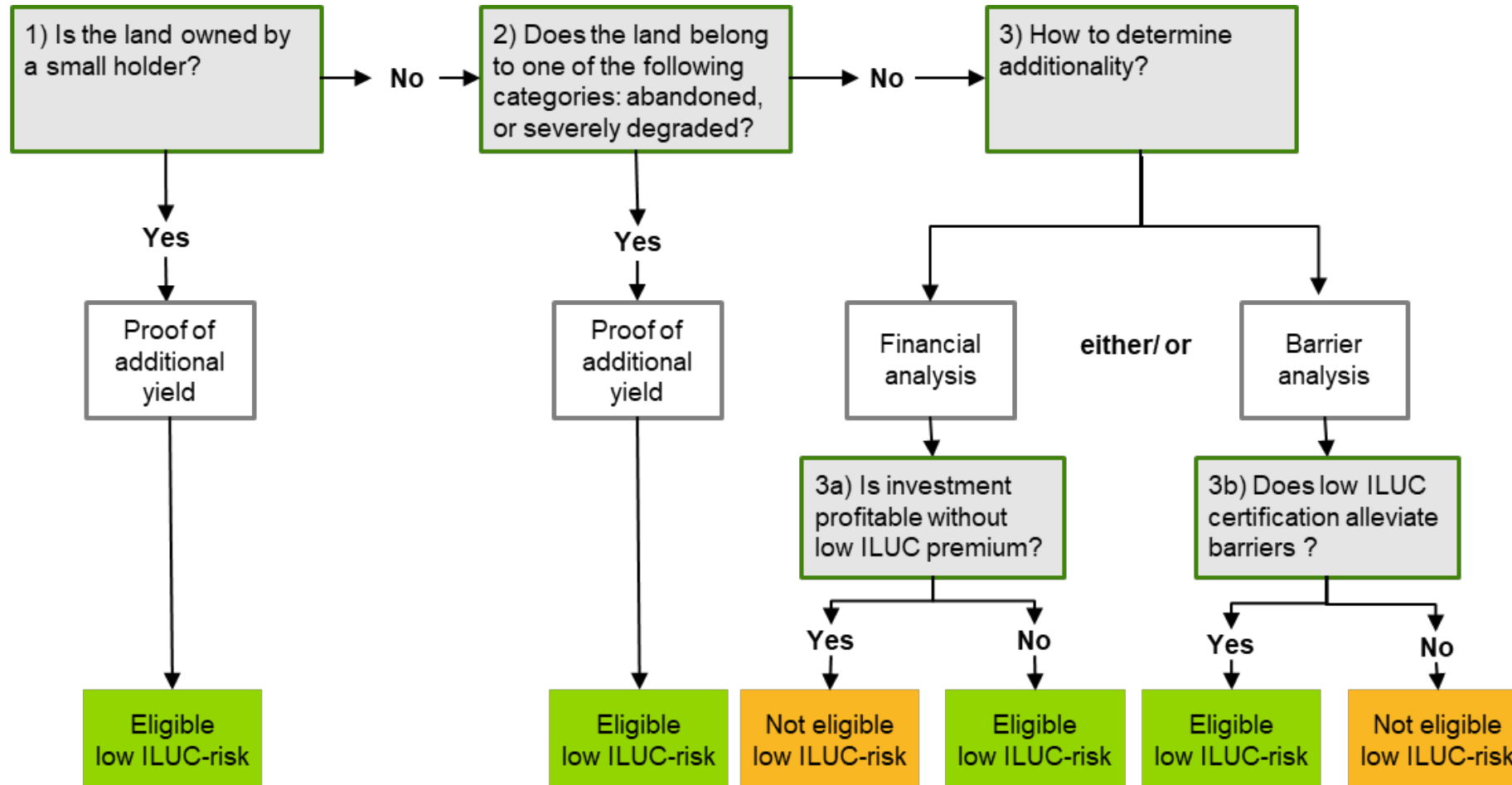
The auditor checks the claims included in the financial attractiveness and/or barrier analysis as part of the baseline audit. The Additionality test is valid for the 10-year validity of the dynamic yield baseline.

No additionality test required for measures on abandoned or severely degraded land or managed by small holders (< 2ha). NB. It is a requirement for measures on unused land.

Demonstrate Additionality

Additionality test

3 | Demonstrate
additionality



Financial Attractiveness Analysis

Negative NPV required to pass additionality test

3 | Demonstrate additionality

Simple NPV analysis of **additionality measure**:

- Additional revenue based on expected additional volume and averaged historic feedstock prices
- Investment cost, discounted over the lifetime of the investment

Negative NPV passes additionality test.

A feedstock producer would only invest in a project with a prospected negative NPV if it can be counted towards the REDII.

Financial Attractiveness Analysis

Additional volume	2.2	tonne/ha	Note: expected additional production volume after implementing additionality measure
Feedstock sales value	250	USD/tonne	Note: option for EO to use FAOSTAT national data or off-taker contracts
Discount rate	5%		Note: to be further specified according to region
NPV	\$ -1,125.22		

	0	1	2	3	4	5	6	7	8	9	10
Profits											
Value											
Sales value USD/tonne	0	550	550	550	550	550	550	550	550	550	550
Total USD/tonn	0	550	550	550	550	550	550	550	550	550	550
NPV	0.0	523.8	498.9	475.1	452.5	430.9	410.4	390.9	372.3	354.5	337.7

Losses											
Value											
additional CAPEX USD/ha	4500										
additional OPEX USD/ha	100	100	100	100	100	100	100	100	100	100	100
Total USD/ha	4600	100	100	100	100	100	100	100	100	100	100
NPV	4600.0	95.2	90.7	86.4	82.3	78.4	74.6	71.1	67.7	64.5	61.4

$$NPV = \sum_{t=1}^n \frac{R_t}{(1+i)^t}$$

where:

R_t = Net cash inflow-outflows during a single period t

i = Discount rate or return that could be earned in alternative investments

t = Number of timer periods

Barrier analysis

Written analysis of how the barrier will be overcome

3

Demonstrate
additionality

Economic operator should describe:

1. The envisaged additionality measure
 2. The barrier and how it inhibits the uptake of the additionality measure
 3. How low ILUC-risk certification overcomes the barrier
- **If something can be quantified, then it should be considered in the financial attractiveness analysis**
 - **Key challenge for barrier analysis is to make it as objective as possible**
 - Possible examples that could be considered as non-financial barriers:
 - First-of-a-kind / common practice
 - Training that has not been offered previously in the region/country
 - Export / barriers to trade

Delegated regulation

Article 2

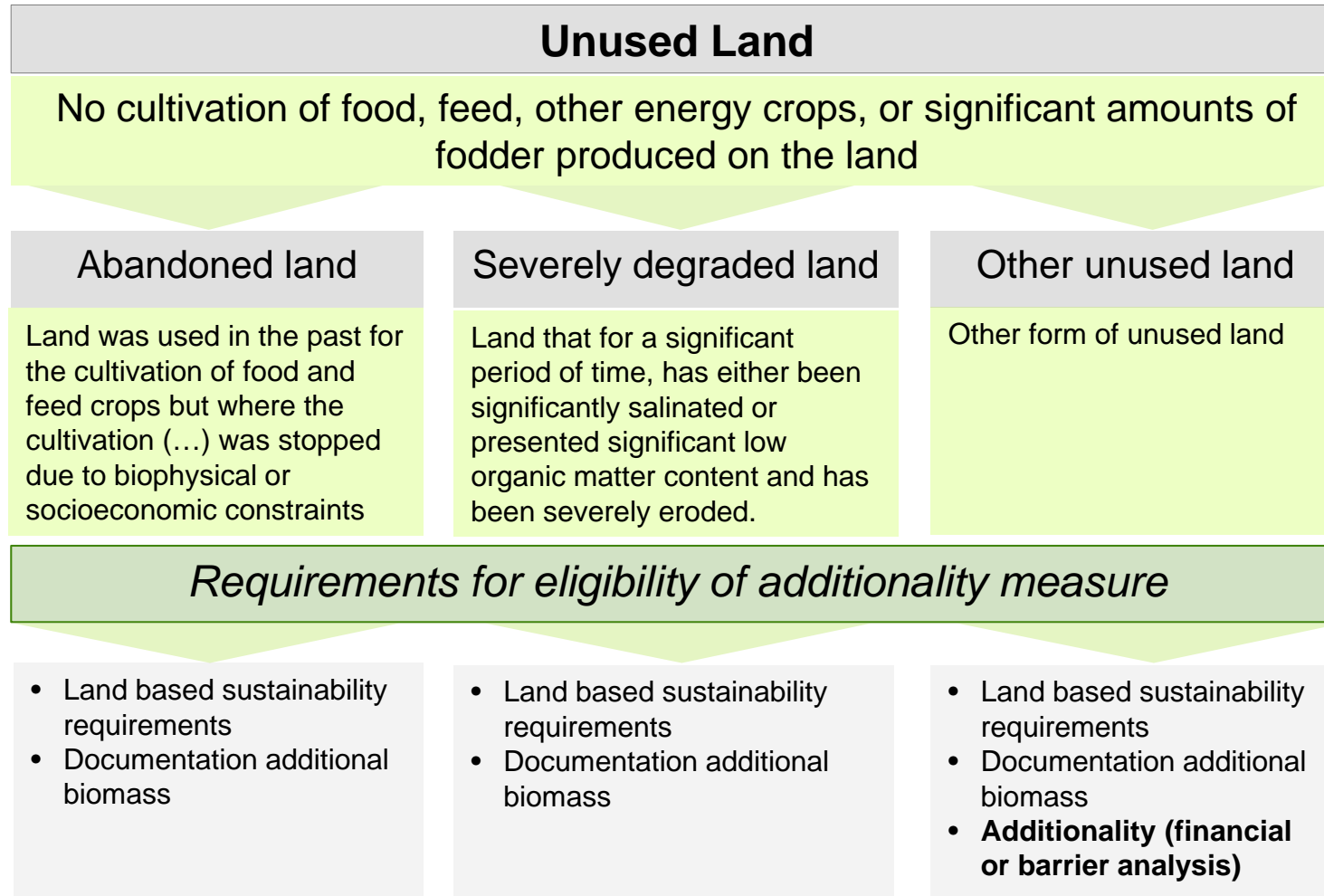
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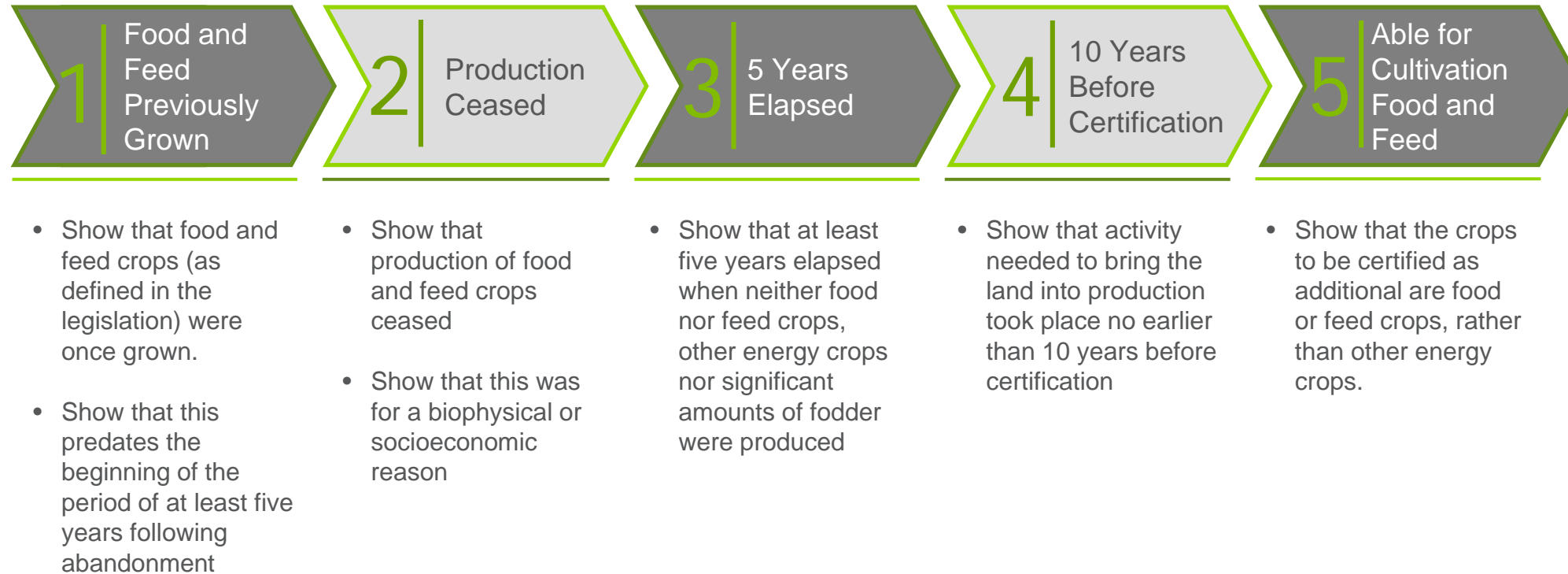
Production on unused, abandoned or severely degraded land, baseline is zero

4 | Demonstrate land status, baseline yield is zero



Steps to demonstrate abandoned land status

4 | Demonstrate land status, baseline yield is zero



Delegated regulation

Article 2

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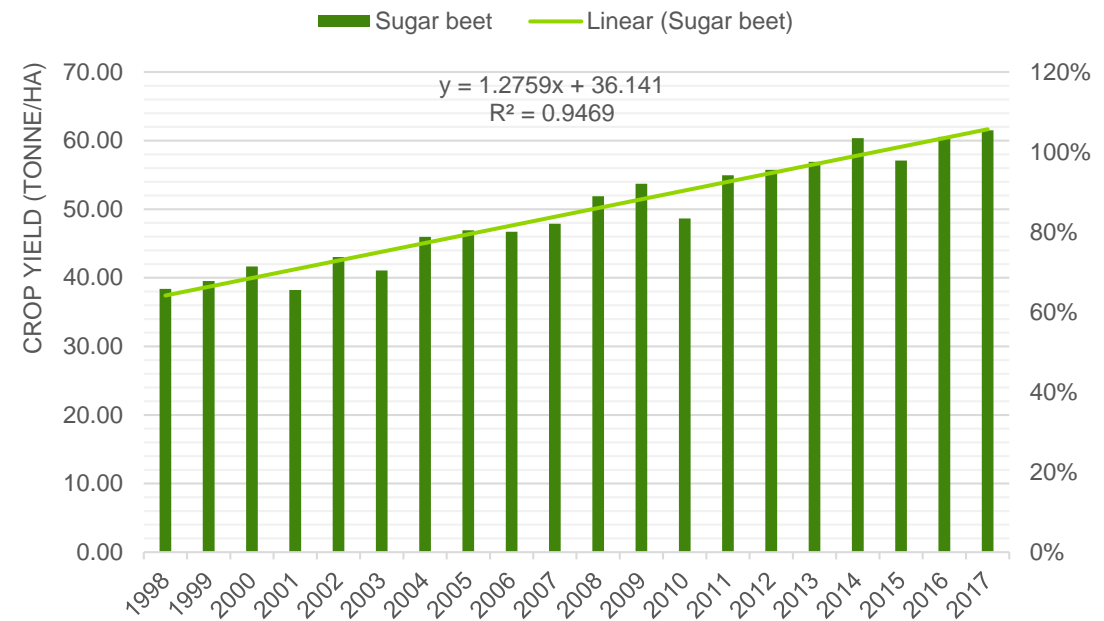
Yield increase: determine dynamic yield baseline

Introduction and elements to be taken into account

4 | Determine dynamic yield baseline

Dynamic yield baseline is based on two elements

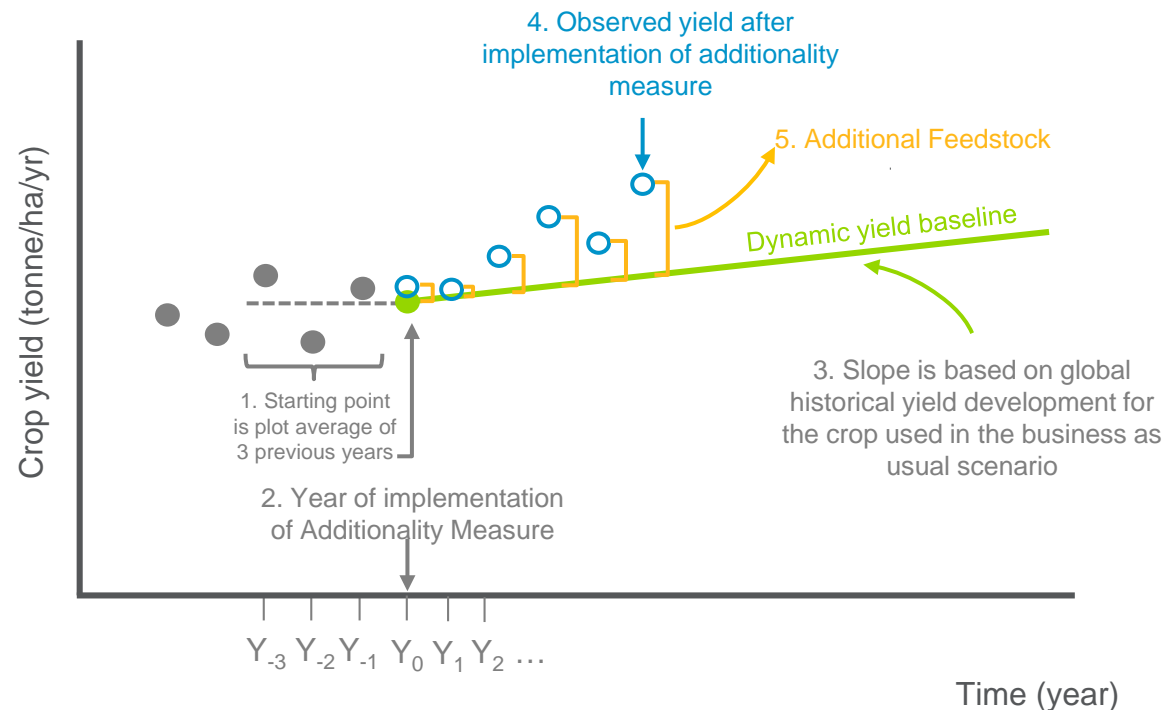
1. **Starting point** average of historical crop yields on the delineated plot
2. **Slope** of trendline fitted through global FAOSTAT crop yield data



How to determine dynamic yield baseline

Annual crop

4 Determine dynamic yield baseline



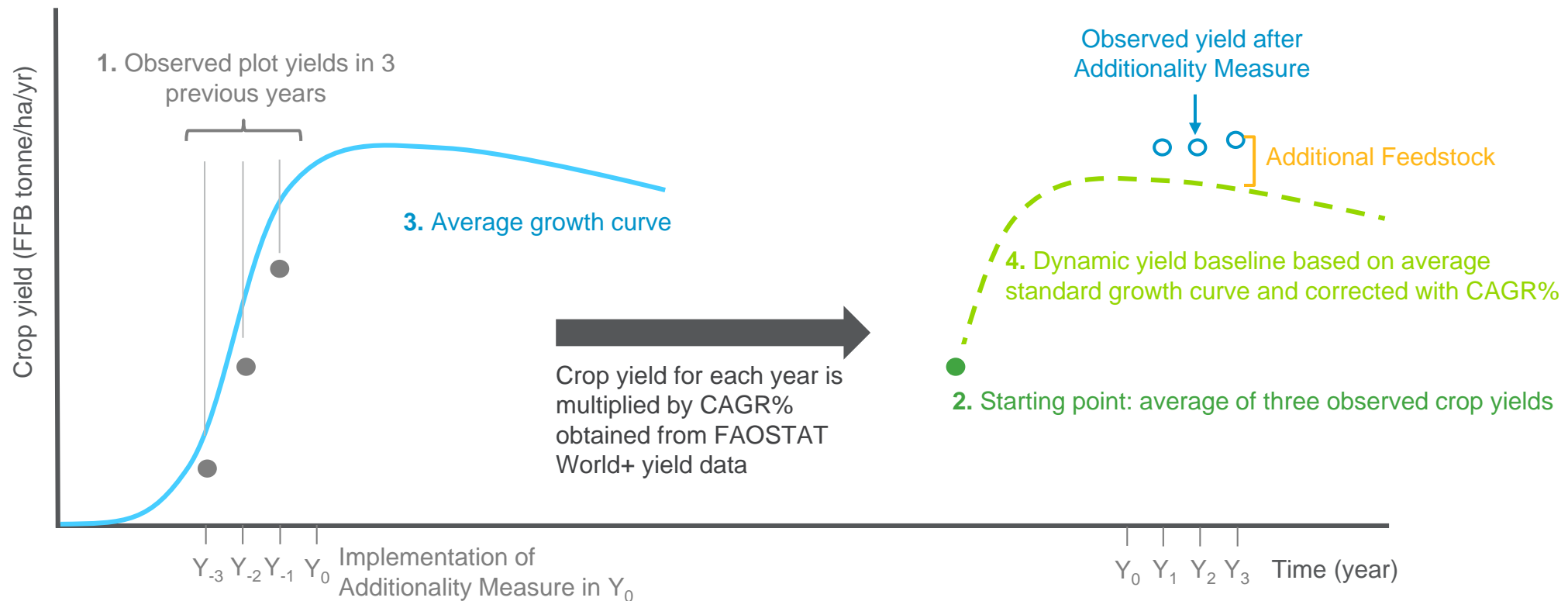
- An approach has been outlined in the guidance on how to address outlier crop yields to “exclude yield fluctuations”

How to determine dynamic yield baseline

Perennial crop

4 Determine dynamic yield baseline

Palm- Option 1a: average growth curve

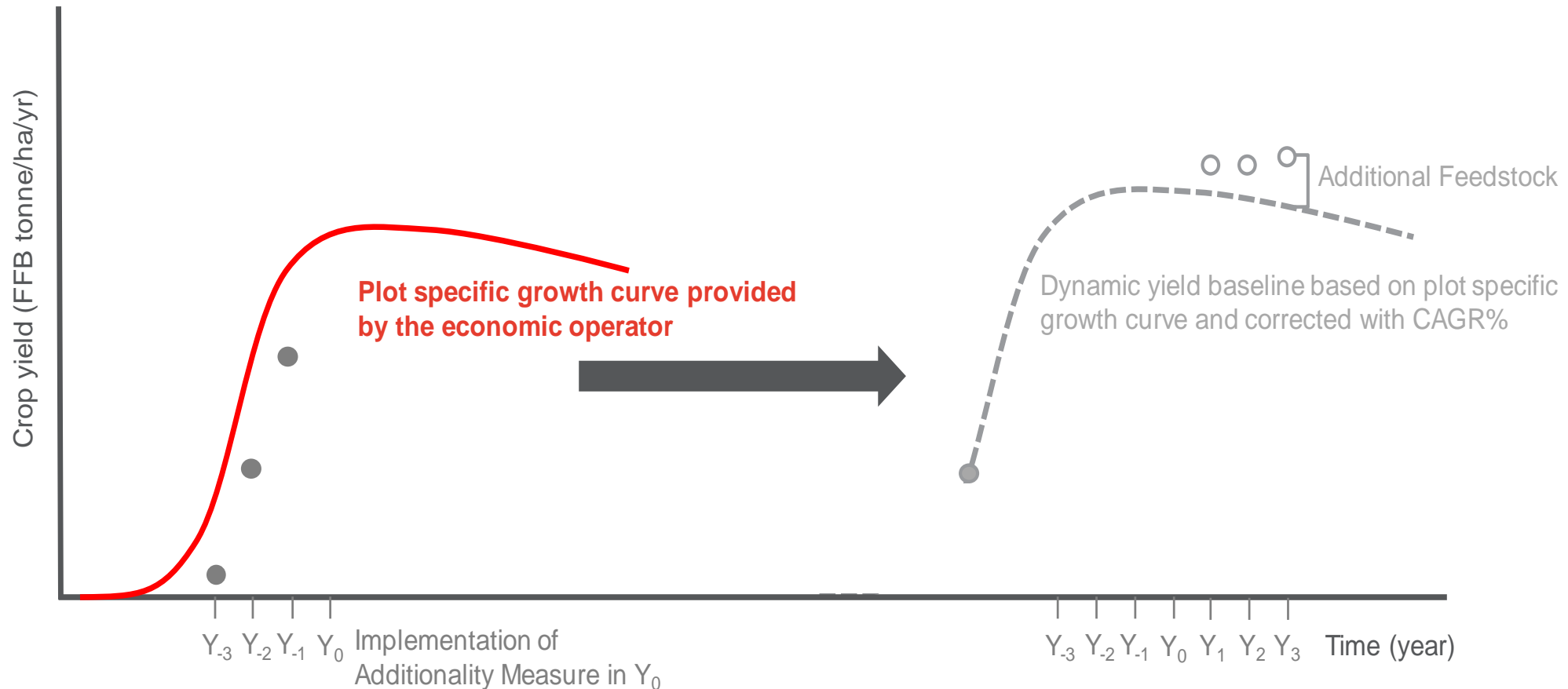


How to determine dynamic yield baseline

Perennial crop

4 | Determine dynamic yield baseline

Palm- Option 1b: growth curve provided by economic operator

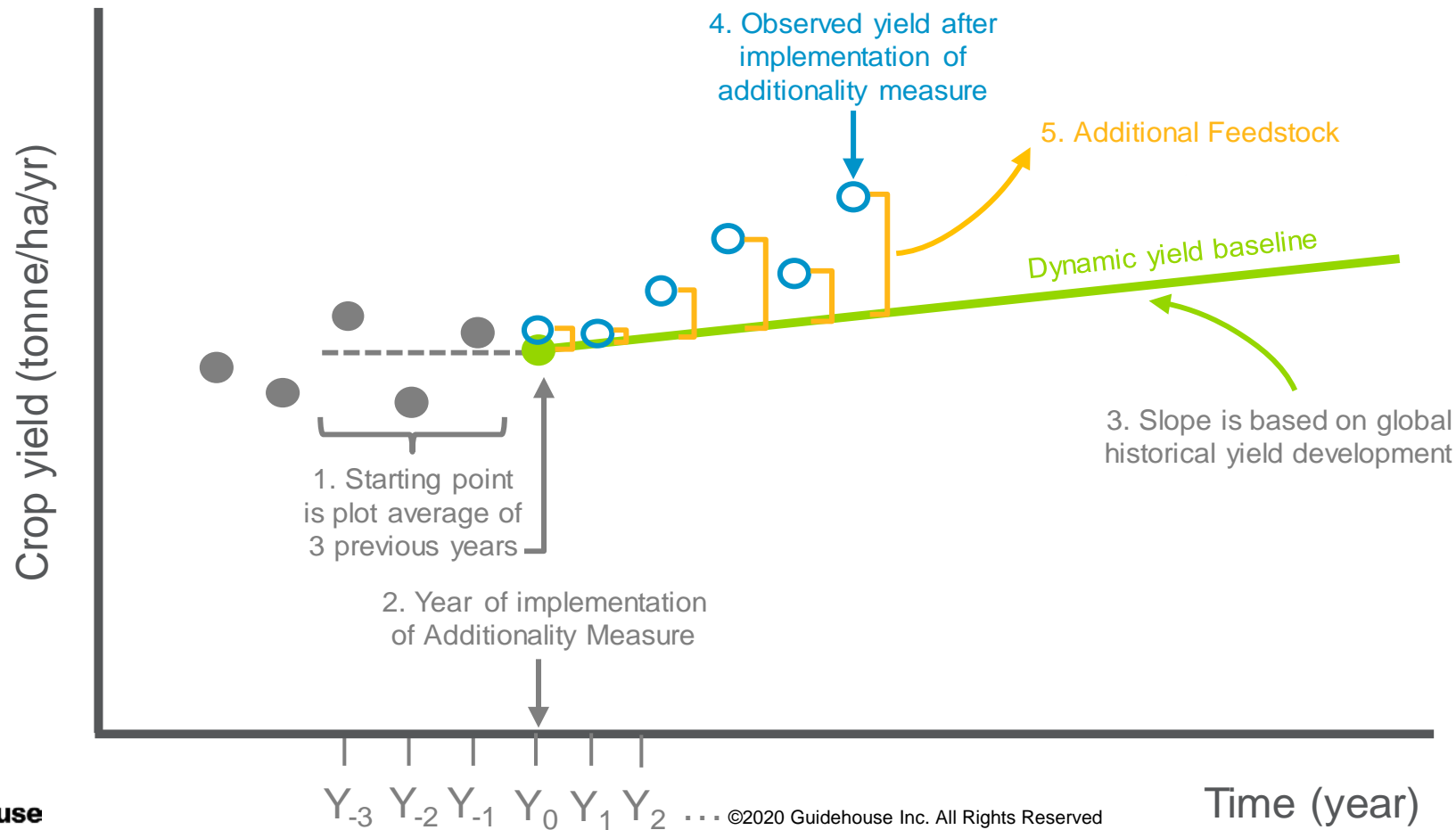


How to determine dynamic yield baseline

Perennial crop

4 Determine dynamic yield baseline

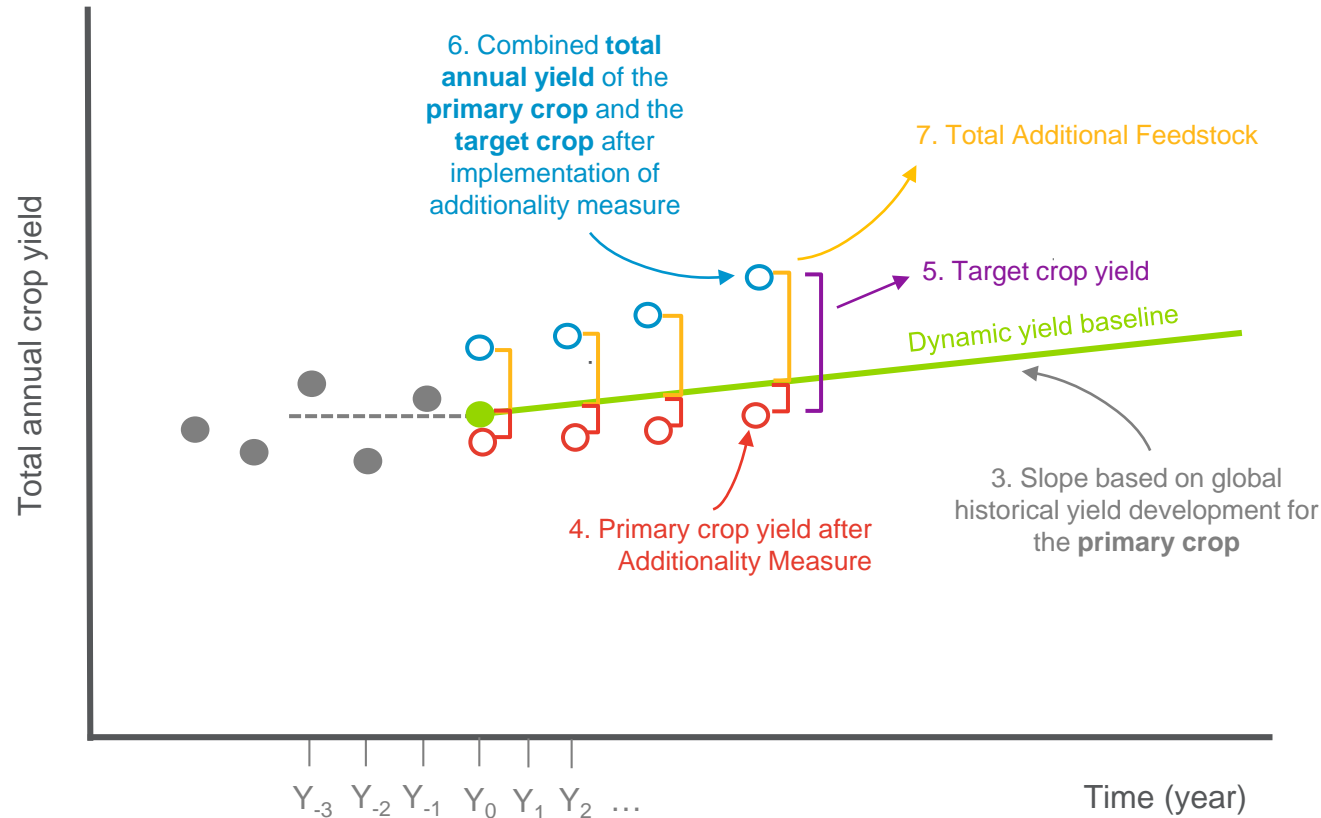
Palm and Sugarcane – Option 2: if plantation yield remains constant year-on-year



How to determine dynamic yield baseline

Sequential cropping (second crop on same land)

4 Determine dynamic yield baseline



- Business-as-usual is the primary crop
- Secondary (target) crop is added on top
- Options included in guidance for the UNITS to be used
- Weight, calorific value or combination of key components and weight, e.g. sum of weight of oil and protein meal

Delegated regulation

Article 2

Definitions

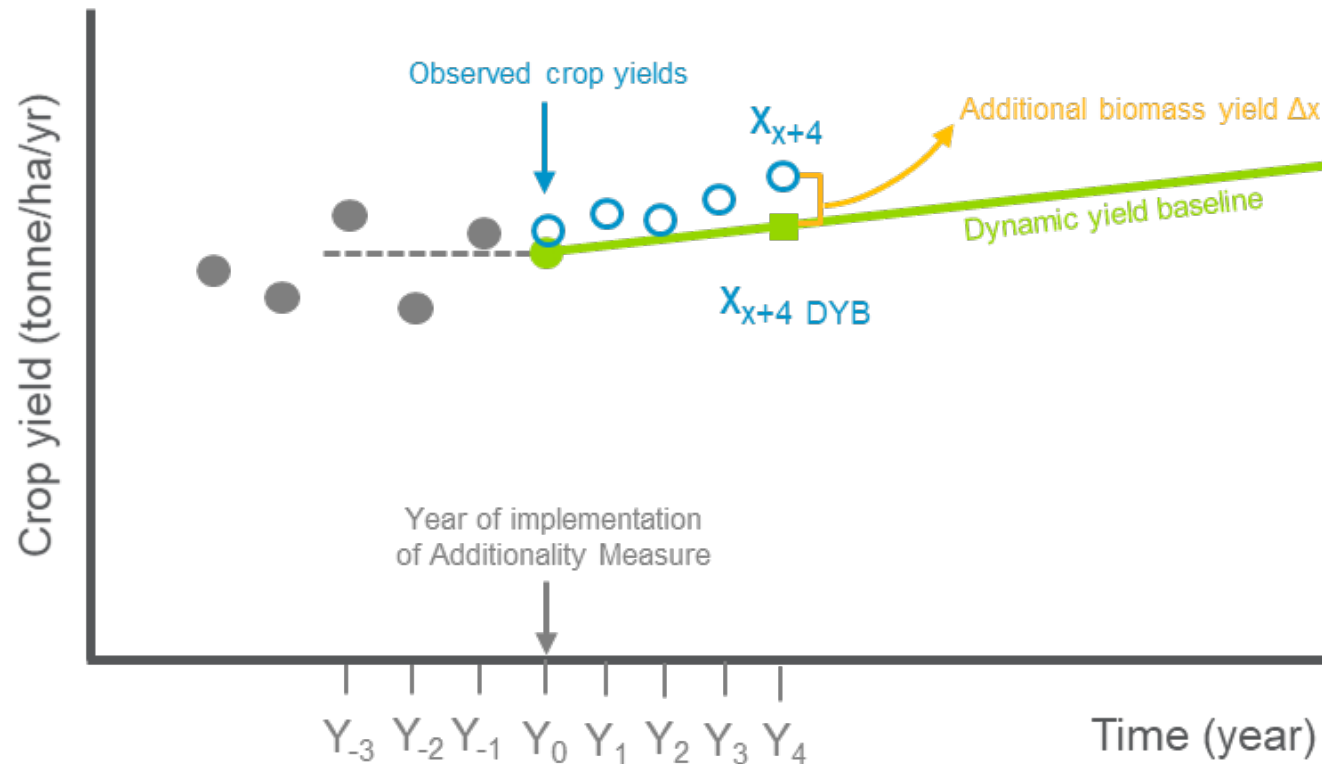
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Estimate additional biomass yield

Difference between observed yield & dynamic yield baseline

5 | Estimate additional biomass yield



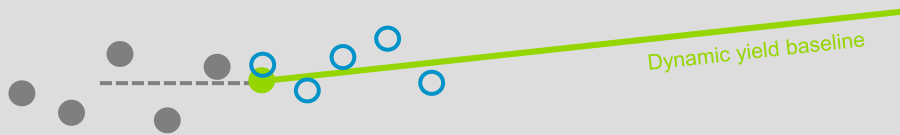
$$\Delta x = (x_{x+4} - x_{x+4 \text{ DYB}}) \times A \text{ (in tonne/yr)}$$

Estimate additional biomass yield

Simple approach also works for other yield patterns

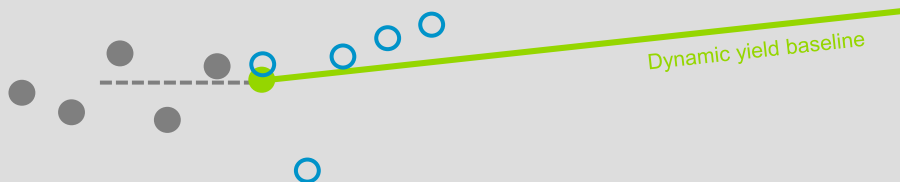
5 | Estimate additional biomass yield

2nd scenario:



- Additionality measure not very effective
 - only low volume of low ILUC-risk biomass claimed

3rd scenario:



- One year of bad yield (e.g. drought)
 - does not impact volume of low ILUC-risk biomass that can be claimed in future

Questions

A summary of the questions and answers from the webinar is being prepared and will be circulated

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