



Innofuels Workshop: Certification criteria for degraded lands

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ISCC Sustainability Principles for agricultural and forestry feedstock



Principle 1

Protection of land with high biodiversity value or high carbon stock



Principle 2

Environmentally responsible production to protect soil, water and air



Principle 3

Safe workers conditions



Principle 4

Compliance with human and labour rights and responsible community relations



Principle 5

Compliance with land rights, laws and international treaties



Principle 6

Good management practices and continuous improvement

Legal framework: RED and ILUC Delegated Regulation

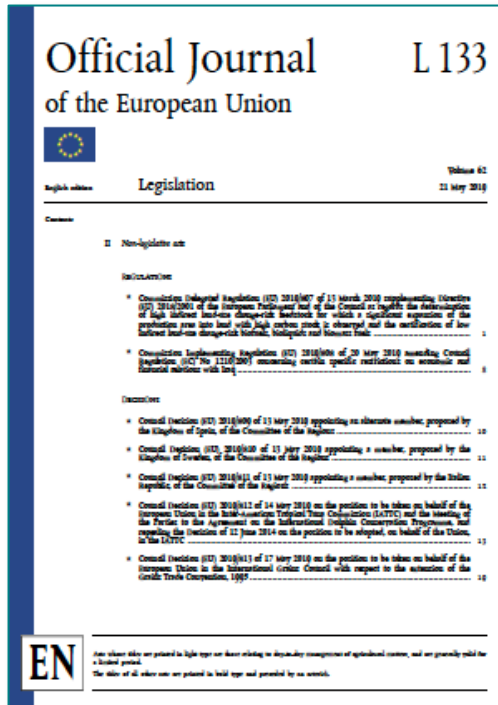
- The Delegated Regulation (EU) 2019/807 of March 2019 defines high ILUC-risk feedstocks and low ILUC-risk biofuels
- The RED explains the concepts of high ILUC-risk feedstock and low ILUC-risk certification
- Fuels produced from feedstocks considered high ILUC-risk will be subject to a cap set at the 2019 consumption level and will be phased out by 2030, unless they can be certified as low ILUC-risk

Low ILUC-risk fuels are those that can demonstrate:

- Produced from 'Additional feedstock' (e.g., through yield increase or unused/abandoned/severely degraded land)

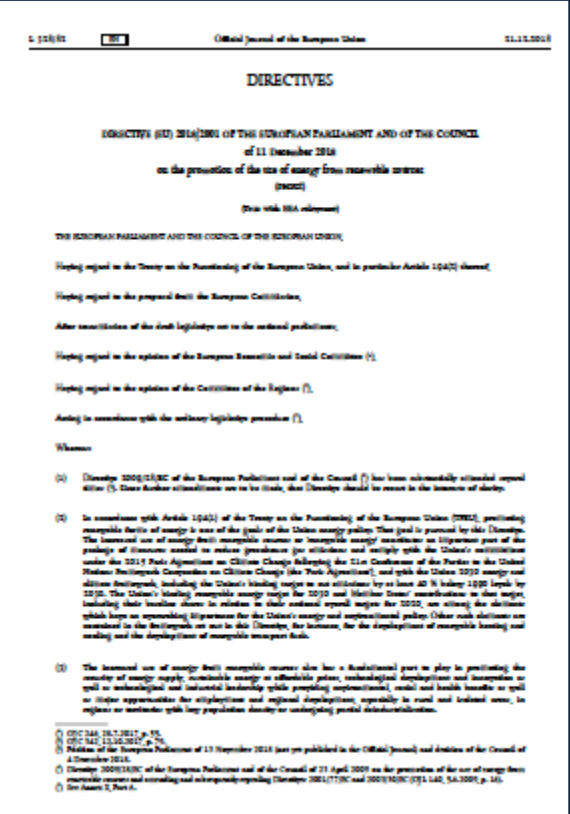
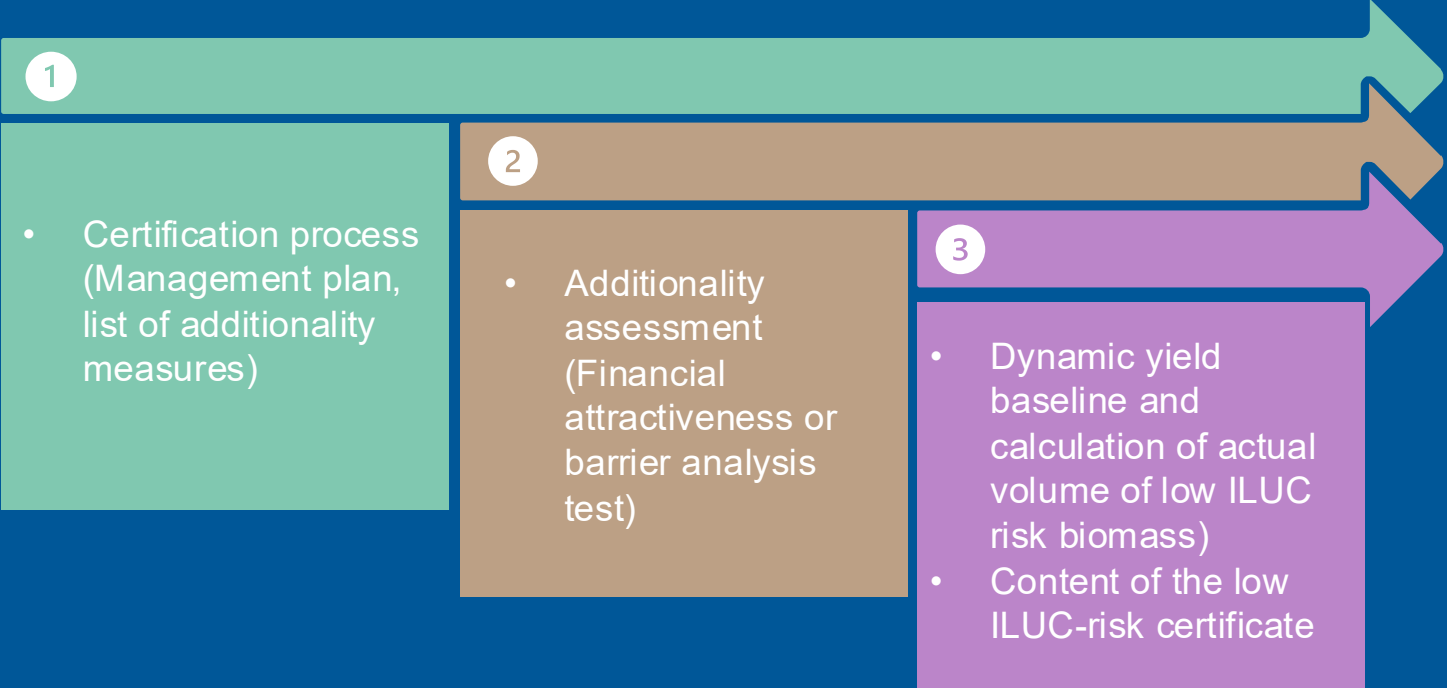
Meets one of the following tests of 'Additionality':

- Financial attractiveness or non-financial barrier analysis
- Production on abandoned or severely degraded land
- Applied by smallholders (<2ha)



In addition, the Annex sets out further requirements

Annexes to the Implementing Regulation to verify sustainability and GHG criteria and low indirect land-use change-risk criteria





Low ILUC Certification Approaches

Criteria to certify Low ILUC risk biomass from specific farms or plantations that can demonstrate they are producing "additional biomass" compared to a business as usual

- a) **Increased yield** on an existing field or plantation
- b) **New cultivation on unused, abandoned or severely degraded land**

Only additional biomass produced on the farms can be certified as **low ILUC risk**

Feedstocks identified as high ILUC-risk are determined by: formula combining crop expansion values with productivity factors and energy yield. Currently, **palm oil and soybean** are the only feedstock categorized as high ILUC-risk.

ISCC as a key partner for the development of the Low ILUC risk certification framework



ISCC partnered with auditors and stakeholders in the **BIKE project** to develop, test, and validate low ILUC risk certification standards through pilot projects involving various regions and feedstocks like castor oil, miscanthus, and *Brassica Carinata*.

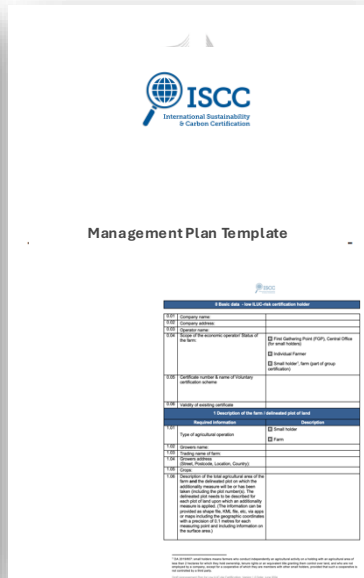
In the **Low ILUC risk certification project led by Guidehouse** and funded by the EU COM, ISCC helped develop, implement, and refine certification criteria through pilot projects, ensuring they could be adapted and used by voluntary schemes recognized by the EU COM.

Relevant documents for low ILUC risk certification

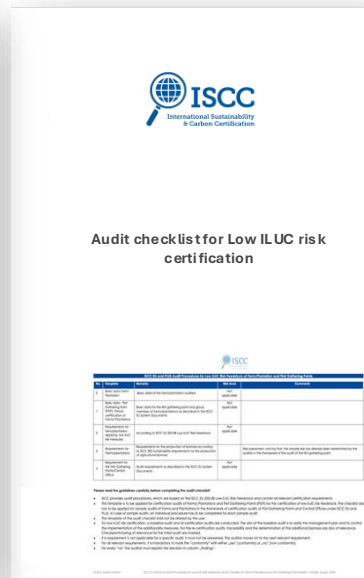
Certification Guidance (“Handbook”)



Management Plan Template



Audit Checklist



Certification guidance

- Lays down the general principles for the certification of low ILUC risk feedstock and the biofuels, bioliquids and biomass fuels
- Describe the scope and application of the set requirements

Management plan

- It provides information concerning the certification application by the economic operator.
- It shows a comparison of the delineated plot before and after the implementation of the additionality measure
- After the registration process, the baseline audit has to be conducted by the CB.
- The baseline audit aims to verify the management plan and establish and document the dynamic yield baseline against the management plan.

Audit checklist


- Verify the management plan and to control the implementation of the additionality measure

Relevant document: Low ILUC risk management plan template

Economic operators must provide **basic data for the certification process**


Information of the **ISCC EU certificate** must be clearly stated

Detailed **description of the farm and the delineated plot** must be provided by the economic operator

 **ISCC**
International Sustainability & Carbon Certification

0 Basic data - low ILUC risk certification holder		
0.01	Company name:	
0.02	Company address:	
0.03	Operator name:	
0.04	Scope of the economic operator/ Status of the farm:	<input type="checkbox"/> First Gathering Point (FGP), Central Office (for small holders) <input type="checkbox"/> Individual Farmer <input type="checkbox"/> Small holder ¹ , farm (part of group certification)
0.05	Certificate number & name of Voluntary certification scheme	
0.06	Validity of existing certificate	
1 Description of the farm / delineated plot of land		
Required information		Description
1.01	Type of agricultural operation	<input type="checkbox"/> Small holder <input type="checkbox"/> Farm
1.02	Growers name:	
1.03	Trading name of farm:	
1.04	Growers address (Street, Postcode, Location, Country):	
1.05	Crops:	
1.06	Description of the total agricultural area of the farm and the delineated plot on which the additionality measure will be or has been taken (including the plot number(s)). The delineated plot needs to be described for each plot of land upon which an additionality measure is applied. (The information can be provided as shape file, KML file, etc. via apps or maps including the geographic coordinates with a precision of 0.1 metres for each measuring point and including information on the surface area.)	

Relevant document: Low ILUC risk management plan template

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1.07	Description of current use of land and recent (3 year) history in the case of a newly acquired plot of land including information on acquisition date (in case of a purchase or a lease).	
1.08	In case of plots of land for which the additionality measure has been implemented within the last ten years, please describe the land use and cultivation techniques at minimum 3 years before the implementation of the additionality measure.	
1.09	If the delineated plot is part of a crop rotation system, the crop rotation system needs to be described further. This includes the number of land plots that are part of the crop rotation system, the plot locations (geographic coordinates with a precision of 20 metres for each measuring point), surface areas (in ha) and target crop and crops grown on each plot over the last three to five years (in line with the historical yield data provided).	
Options to qualify as additionality measure		
2 Additionality measure(s) and expected yields		
	Required information	Description
2.01	Indication which of the following additionality measures will be or have been applied on the delineated area and in which year. (Please indicate one or several measures and the corresponding plot on which the measure was implemented):	Yield increase: Replanting (for perennial crops) <input type="checkbox"/> Choice of crop varieties <input type="checkbox"/> Choice of crop varieties on unused/abandoned land Mechanisation <input type="checkbox"/> Machinery (e.g. sowing, precision farming, improved mechanical weed control, improved mechanical soil cultivation, harvest, new/ faster machinery ensuring lower post-harvest losses)

Economic operators must **select the additionality measure** that qualify for the low ILUC certification

One or several measures that have been implemented on a farm can be indicated in the management plan

Economic operators must **indicate and describe the additionality measure** that has been implemented in the delineated plot

Relevant document: Low ILUC risk management plan

Historical annual yield data of the crop must be provided for **the last three years before the implementation** of the additionality measure

Economic operator must provide documentation of the analysis of the financial attractiveness showing the measure's NPV as **“Negative”**





2.2 In case of yield increase or cultivation on unused land - Calculation of the dynamic yield baseline	
Required information	Description
2.22	<p>Provision of crop-specific information on historic yields. If possible, data must also be linked to the delineated plot of land. The data set must include annual historical crop yields for the three years before the implementation of the additionality measure.</p> <p>In case the data is not available or sufficient, other data (older) or alternative data sources can be used. For further guidance, the guidance document provides more detailed information.</p>
2.23	<p>Calculation of the dynamic yield baseline according to the methodology described in the Guidance document. The baseline must be crop-specific, determined for each delineated plot and determined for each type or combination of additionality measure(s) applied.</p>

2.4 In case of cultivation of abandoned/ severely degraded land - Demonstration of land status	
Required information	Description
2.41	<p>Information on the land status of the delineated plot(s) (Proof of land status). If cultivation takes place on previously abandoned or severely degraded land this qualifies as an additionality.</p>
2.5 Estimation of additional biomass yield	
Required information	Description
2.51	<p>Estimation on the effectiveness of the additionality measure and estimation on the additional biomass being produced.</p> <p>Please explain, which data sources have been used to determine the additional yield as expectations must be reasonable (e.g. refer to scientific literature, experience from field trials, information provided from seeding companies).</p> <p>In case the additionality has been implemented in the past, documentation on the yields achieved shall be taken into account.</p>

Evidence of the land status of the delineated plot (s) must be shown according to the guidance document; The land status will be checked as part of the baseline audit by the certification body at the beginning of the certification process.

Economic operators must present the calculation of the additional biomass, considering the **approach for annual and perennial crop**, according to the guidance document

Biomass cultivation on abandoned or severely degraded land: Harvest qualifies without proof of additionality

Land Category	Dynamic Yield Baseline	Proof of Additionality	Additionality measure
 <p>Unused Land</p>	0*	✓	✗
 <p>Abandoned land</p>	0*	✗	✗
 <p>Severely degraded land</p>	✓**	✗	✗
 <p>Cropland</p>	✓	✓	✓



Demonstrating the land status under low ILUC framework

Severely degraded land

Land which has been either **severely salinated**, or has been significantly **low in organic matter (SOM)** and **severely eroded**



Evidence to demonstrate “severely degraded land”

- Significantly salinated threshold: >4.0 dS/m
→ soil electrical conductivity analysis using saturated paste method
- Significantly low SOM threshold: $<3.4\%$ SOM
→ soil analysis using dry combustion method
- Severely eroded threshold: >1.5 t/ha/y soil loss,
→ proven using measurements, maps or photographic evidence
- Zero baseline for land that has not been under cultivation for >3 years
- Land with previous yield needs to set a baseline



Soil samples for severely degraded land

Method “W-shape”

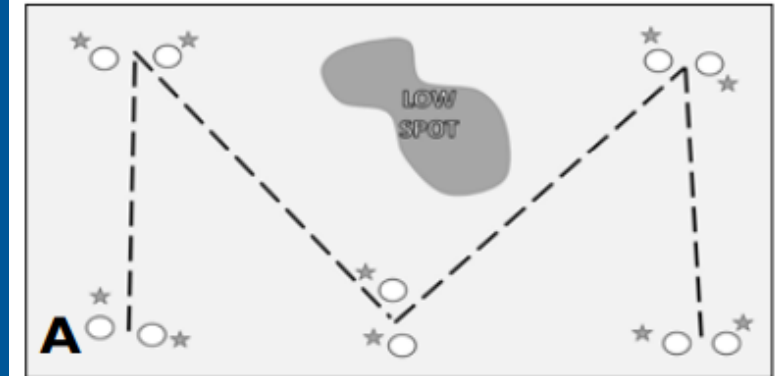
Fields should be divided into sampling units where there are differences in key characteristics, such as:

- Climatic Conditions
- Soil type, texture, or slope
- Reference farming/management practices
- Observed crop/vegetation growth
- Other visual differences of the plot, such as colour differences indicated by the Munsell Soil Color

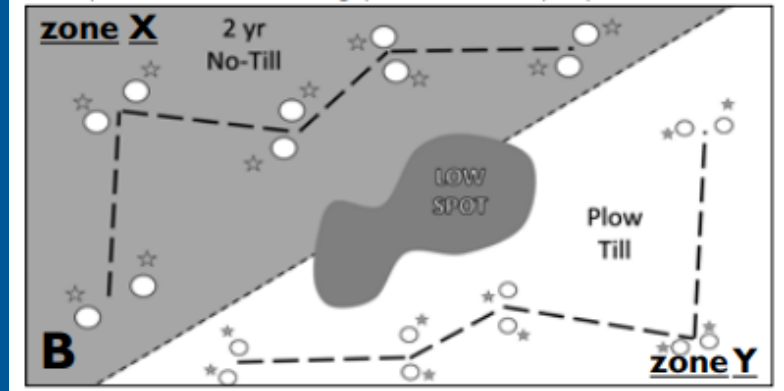
Sampling

- 1 sample per 5 ha or field (whichever is smaller)
- 15 sub-samples well distributed and mix for 1 composite sample (500 grams)
- Samples taken in a W-shape
- At a 30 cm of depth
- Before cultivation and fertilization or 2 months after harvest

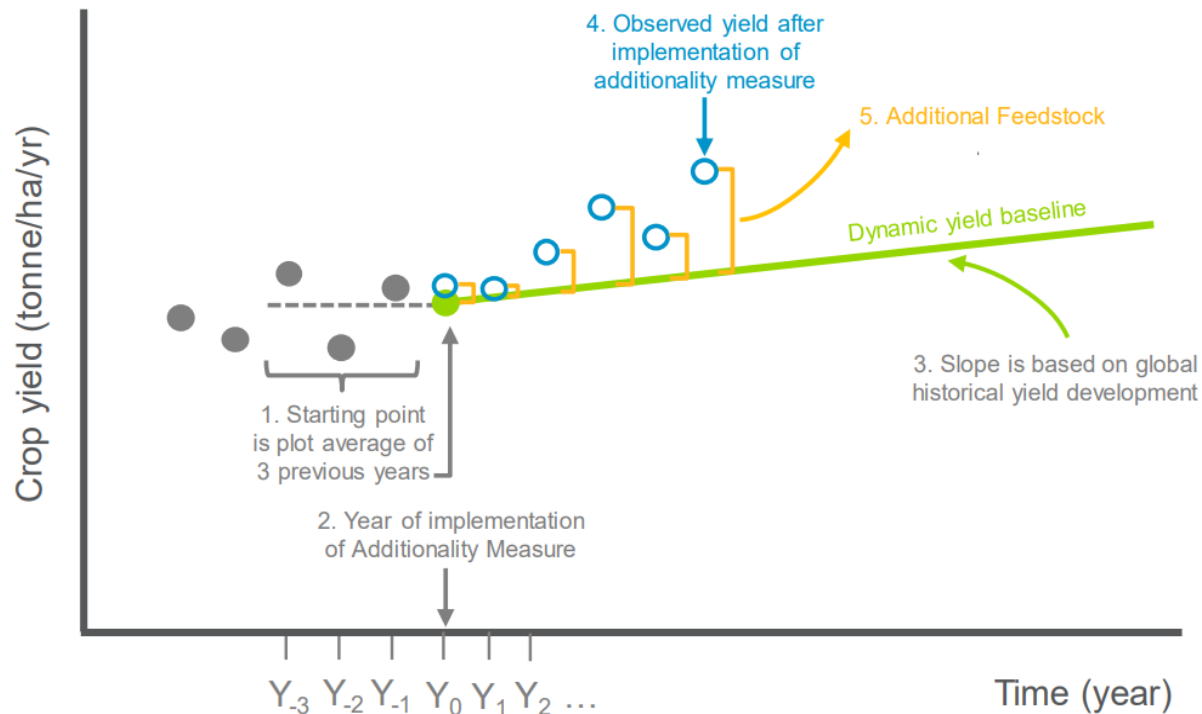
Example A: General field sampling (1 sample)



Example B: Troubleshooting (2 or more samples)



Calculate the dynamic yield baseline (DYB)

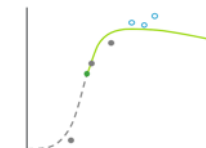


- The DYB (green line) is made up of two elements:

1. A starting point (green dot) – average historical yield of the target crop in the 3 most recent years (grey dots).
2. A slope – given in Table 4 of the Certification Guidance Handbook.

- The starting point is based on historic yield data from the economic operator, or on best available data on crop yield for the respective plot(s) / region if the former is not available.

- The slope is derived from the last 20 years of global crop data from FAOSTAT World+ yield data.



For **oil palm**, crop yield follows a curve over their lifetime, requiring a slightly different approach.



For **sequential crops**, crop-specific baselines may be needed.

Dynamic yield baseline for annual crop (maize)

Steps for the calculation

1. **Information of historical data** from the last three years before the implementation of the additionality measure

2. **Calculate the starting point (Y0)**

Average of the last three years previous additionality measure: $(2,9+3,1+3,8)/3=$ **3,3 t/ha**

3. **Determine the dynamic yield baseline (DYB)**

By using the starting point and the global trendline for corn (slope -20)

Formula: $DYB_x = (\text{starting point DYB}) + (\text{slope}_{20}) \times x$

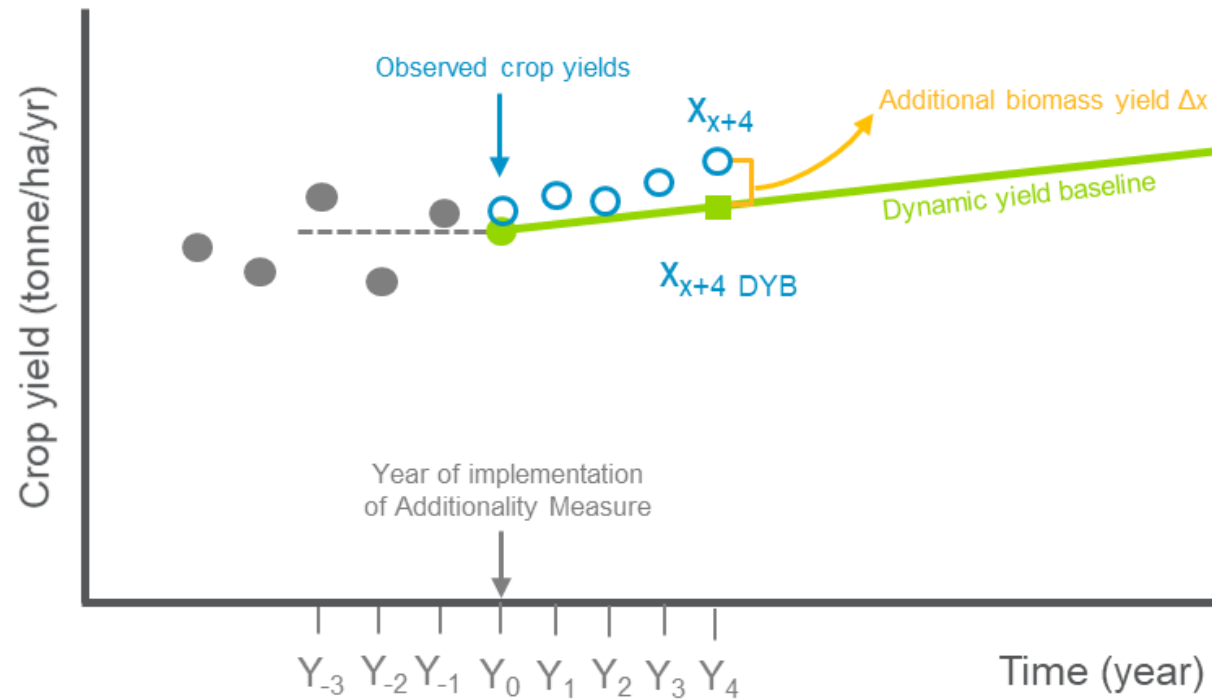
x: year (s) after the implementation of additionality measure

Crop slope -20 global trendline for corn (FAO): 0,08 t/ha

DYB1 (Year 1): $(3,3 \text{ t/ha}) + (0,08) \times 1 =$ **3,38 t/ha**

DYB2 (Year 2): $(3,3 \text{ t/ha}) + (0,08) \times 2 =$ **3,46 t/ha**

Calculate the volume of additional biomass



Estimate additional biomass yield

- Estimate of additional biomass required for the NPV calculation
- The amount of low ILUC-risk biomass claimed is the actual difference between the observed yield and the dynamic yield baseline
- Using the following formula:

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



Thank you!

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