BIKE

BIOFUELS PRODUCTION
AT LOW - ILUC RISK
FOR EUROPEAN SUSTAINABLE
BIOECONOMY

D 3.5

Decision support toolkit

Dissemination level:
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Executive summary

This toolkit aims to provide rapid access to information and steps to consider for implementation of projects on degraded or alternative lands for production of biofuels. The toolkit is meant to enable industrial actors and stakeholders to scope the feasibility and procedures of new opportunities for producing low-ILUC biofuels.

The toolkit also presents the results of the BIKE project as part of its exploitation goals. This report comprises a project deliverable, but the toolkit will be integrated into the project's website to facilitate its use. The toolkit addresses nine main topics for rapid access by users for scoping their own activities related to low ILUC, based on the results of the BIKE project. Each topic contains a series of live links that enable the user to access various documents within BIKE's webpage and other relevant literature. The topics are:

1. Biofuels production on alternative land
2. Low ILUC definition
3. ILUC certification proposal
4. Climate change and co-benefits
5. Policies and regulations
6. A Glance at Case studies
7. Cultivation on degraded land
8. Improved agricultural practices.
9. Recommendations

The toolkit is not intended to replace a feasibility study but is meant instead to provide ready and easy access to variety of methods, information and resources. In addition, at the end of the Toolkit document, the user will find a link to access a brief survey for providing feedback on the Toolkit while the portal is kept alive. The data will be used only to help understand users' views and will be stored securely by research partners at Imperial College and shared with the consortium only when required.

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TOOLKIT

BIOFUELS PRODUCTION IN ALTERNATIVE LAND

The entirety of BIKE activities revolved around the concept of low-ILUC risk biofuels (and feedstock). ILUC stands for Indirect Land Use Change, which can occur when pasture or agricultural land previously destined for food and feed markets is diverted to biofuel production. The following diagram may help to decide on the option that better suits the type of production needed to avoid ILUC.

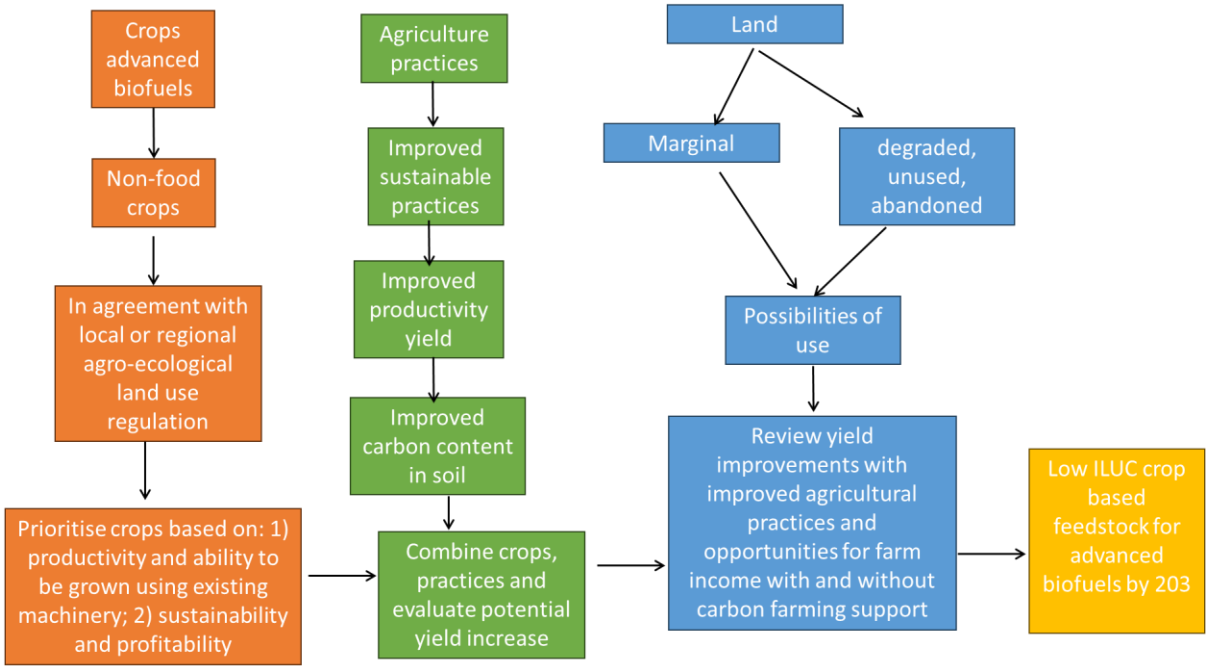


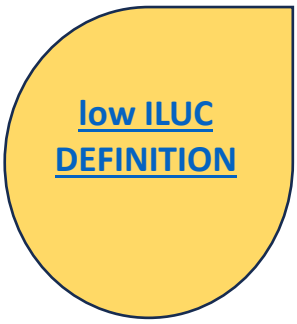
Figure 1. Opportunities for low-indirect land use biomass production for biofuels (modified from Panoutso et al, 2022)

The BIKE project assessed biophysical and economic opportunities for low ILUC risk dedicated cropped biomass produced on lands with natural constraints which are often applicable to unused, abandoned and degraded lands. Policy instruments can help to incentivize the production of biomass on unused, abandoned and degraded lands. They should be accompanied by the development of significant market opportunities to obtain realistic prices for the low ILUC biomass.

The problem is that all these types of lands are not mapped nor is statistical data available directly on their extend. BIKE produced maps for these types of lands and their characteristics.

References/links in BIKE website and others:

https://www.bike-biofuels.eu/wp-content/uploads/2022/05/Paper-on-Opportunities-for-Low-Indirect-Land-Use-Biomass-for-Biofuels-in-Europe.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2022/10/Deliverable-2.2-Final.pdf
Elbersen, B.; Hart, K.; Koper, M.; Eupen, van M.; Keenleyside, C.; Verzandvoort, S.; Kort, K.; Cormont, A.;Klink, Giadrossi, A.; Baldock, D. (2020). Analysis of actual land availability in the EU; Trends in unused, abandoned and degraded (non) agricultural land and use for energy and other non-food crops. Wageningen 16 October 2020. Reference: ENER/C2/2018-440



The concept for low ILUC-risk biofuel production is that by developing new systems to expand agricultural production, it is possible to deliver biofuel feedstock without impacting existing food and feed markets. Low ILUC-risk production systems fall into three main categories: **growing a crop on land that is unused** (for instance that has been abandoned or become degraded); **increasing production of an existing crop**; or **adding an additional intermediate crop** (for instance a productive winter cover crop or an intercrop) to an existing system.

Low ILUC-risk crops are crops grown in a way that avoids displacement of other land uses. They must go beyond the crop outputs that would have been produced if no low ILUC-risk project was implemented, meaning that the feedstock is grown purely to meet demand from the biofuels market. In the language of the RED II, feedstock from a given farm may be certified as low ILUC-risk if it is "additional feedstock obtained through additionality measures" In some cases, this means a whole extra crop; in others, an increase in productivity for an existing crop.

In the RED II, the main role given to low ILUC-risk certification is as a basis to exempt batches of fuel from the limitations placed on food and feed crops designated as high ILUC-risk. This emphasis on food and feed crops is reflected in the regulatory definitions. For example, low ILUC-risk biofuels are defined as:

> "fuels, the feedstock of which was produced **within schemes which avoid displacement effects of food and feed-crop** based biofuels, bioliquids and biomass fuels through improved agricultural practices";

The low ILUC-risk concept seeks to promote the production of biofuel feedstocks in a way that does not interfere with existing food and feed markets. The feedstock production must be 'additional' to be certified as low ILUC-risk, and must result from implementation of a farm-level 'additionality measure', defined as:

> "**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"

Pathways to low ILUC-risk certification

Crop production on unused land, including on abandoned land

. Unused land is land which has had no significant cultivation or grazing on it for five consecutive years, while abandoned land is a sub-category of unused land which formerly produced food and feed crops but ceased for biophysical or socioeconomic reasons. When a low ILUC-risk project is implemented on unused land, all of the produced feedstock can be certified

Link between low ILUC-risk certification and food and feed crops

If land with low productivity is considered non-agricultural, then cereals or oilseeds produced on such land by a low ILUC-risk project would not fall under the definition of food and feed crops, and would not be eligible for low ILUC-risk certification under the terms of the RED. If instead all land on which an agricultural crop is produced can be treated as agricultural land, even when it is of poor quality, then the reference to agricultural land in the definition of food and feed crops is redundant.

A list of eligible additionality measures for yield increase is provided in a Commission Implementing Regulation. This list identifies four categories of additionality measures: mechanisation; multi-cropping; management; and replanting (for perennial crops). These have a proven track record of improving on-farm productivity, and can be applied by an economic operator with the provision that they do not compromise long-term sustainability. BIKE has clear recommendations on additionality measures.

References/links in BIKE website and others:

https://www.bike-biofuels.eu/wp-content/uploads/2023/02/BIKE_WP5_BriefingNote_1-Low-ILUC-Risk-Policy-Overview.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2022/12/BIKE_WP5_BriefingNote_2-Policy-Definitions.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2023/02/BIKE_WP5_BriefingNote_4-Additionally-Measures.pdf
https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52019DC0142&from=EN
https://www.bike-biofuels.eu/wp-content/uploads/2023/02/BIKE_WP5_BriefingNote_4-Additionally-Measures.pdf

'Low ILUC-risk' certification, as defined in the RED II and associated regulations, is designed to identify production systems that avoid ILUC, and detailed certification procedures for a broad range of crop types are under development. EU Member States wishing to guarantee genuine transport decarbonisation may consider using low ILUC-risk certification as a mechanism for mitigating the indirect impacts of crop-based feedstocks. BIKE explored the options which are available to Member States for incorporating low ILUC-risk into their national biofuel strategies.

Under the RED II, low ILUC-risk certification can currently deliver

Taking account of ILUC in national policy

- The RED II grants Member States the freedom to differentiate their support for biofuels based on ILUC considerations.
- Article 26 states that: "Member States may distinguish between different biofuels produced from food and feed crops, taking into account best available evidence on indirect land-use change impact"

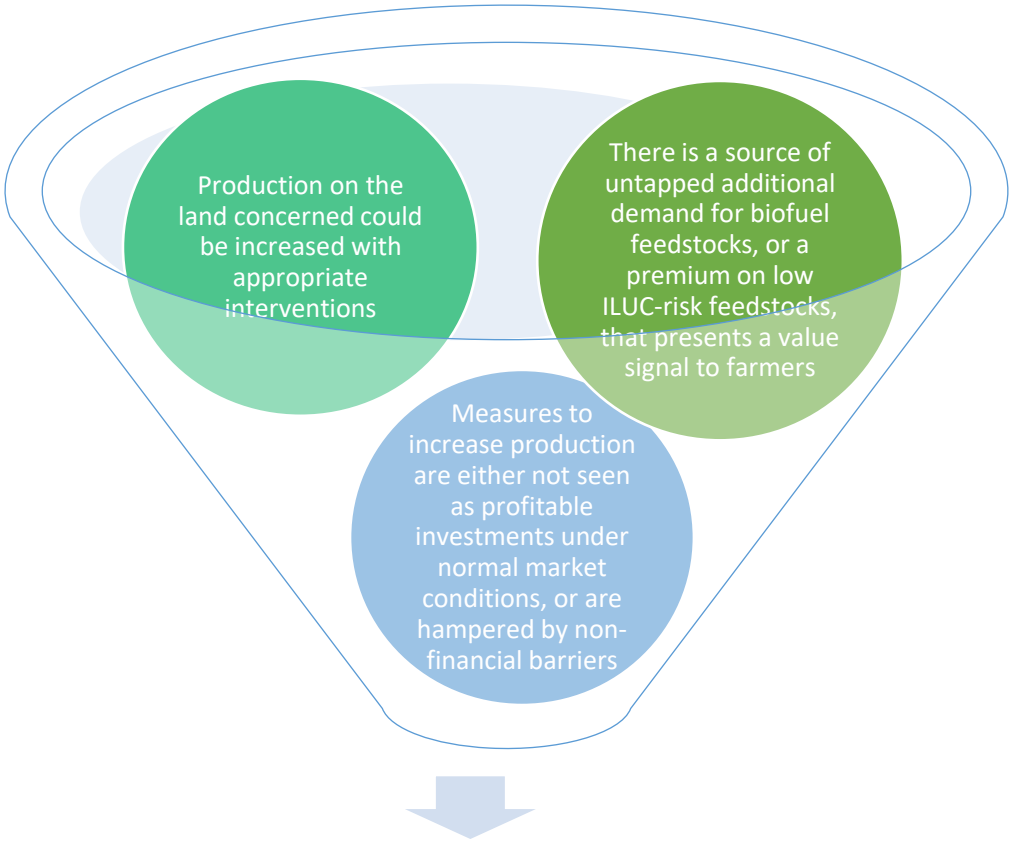
Delivering value through exemptions

- Under the RED II, low ILUC-risk certification can currently deliver value to palm oil projects by providing anexemption from limits on high ILUC-risk feedstocks
- Article 26 of the RED II, which states that: "Member States may, for example, set a lower limit for the share of biofuels produced from oil crops".
- require fuel producers to take RED II's ILUC factors for starch, sugar, and oil-based biofuels into consideration when assessing lifecycle emissions against the minimum GHG-saving thresholds.

Delivering value through bonuses

- Member States could also consider directing additional support to certified fuel with national target for low ILUC-risk biofuels. This could take the form of a share of transport energy, or an obligation for suppliers of food-based biofuels to source a certain proportion from low ILUC-risk sources.
- With sufficiently robust penalties for non-compliance would favour low ILUC-risk biofuels

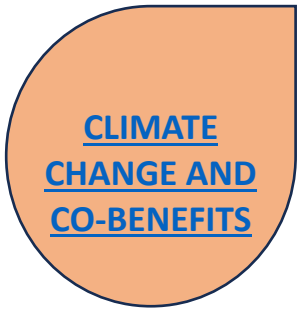
The EU's Common Agricultural Policy ('CAP') system has the advantage of simplicity and universality in boosting good practices; for specific bioenergy projects, this could be complemented by a low ILUC-risk value signal which targets support towards marginal projects in a way that minimises competition between food and fuel. Additionality conditions in the CAP context are relevant to Low ILUC-risk certification for farms meeting the following three conditions:



Low ILUC-risk certification is relevant for farms following these conditions.

BIKE identified criteria and indicators for the **certification of low ILUC-risk feedstocks** under **ISCC PLUS**. In addition, measurable sustainability indicators that return meaningful information to policymakers and other stakeholders were selected for the BIKE project based on results to assess the environmental, social, and economic performances of the bioenergy pathways studied, in collaboration with partners, data availability and quality.

References/links in BIKE website:
https://www.bike-biofuels.eu/wp-content/uploads/2022/12/BIKE_WP5_BriefingNote_3-REDII-Member-States.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2023/07/BIKE_WP5_BriefingNote_9-CAP-Subsidies.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2022/01/Attachment_0-3.pdf



Different benefits can be associated to low- ILUC production agricultural systems. These are associated to climate change mitigation measures such as carbon sequestration on soil, to sustainability co-benefits like reduced use of pesticides and improvement of biodiversity in alternative lands, as well as environmental, social and economic co-benefits.

The EU's Renewable Energy Directive ('RED II') recognises the potential for biofuel feedstock production to enhance the carbon stock of agricultural soils as a measure for mitigating greenhouse gas emissions. The RED II's formula for calculating biofuels' lifecycle emissions considers "emission savings from soil carbon accumulation via improved agricultural management" (e_{sca}). These improved agricultural management practices include "Shifting to reduced or zero-tillage, improved crop/rotation, the use of cover crops, including crop residue management, and the use of organic soil improver (e.g. compost, manure fermentation, digestate, biochar, etc.)"

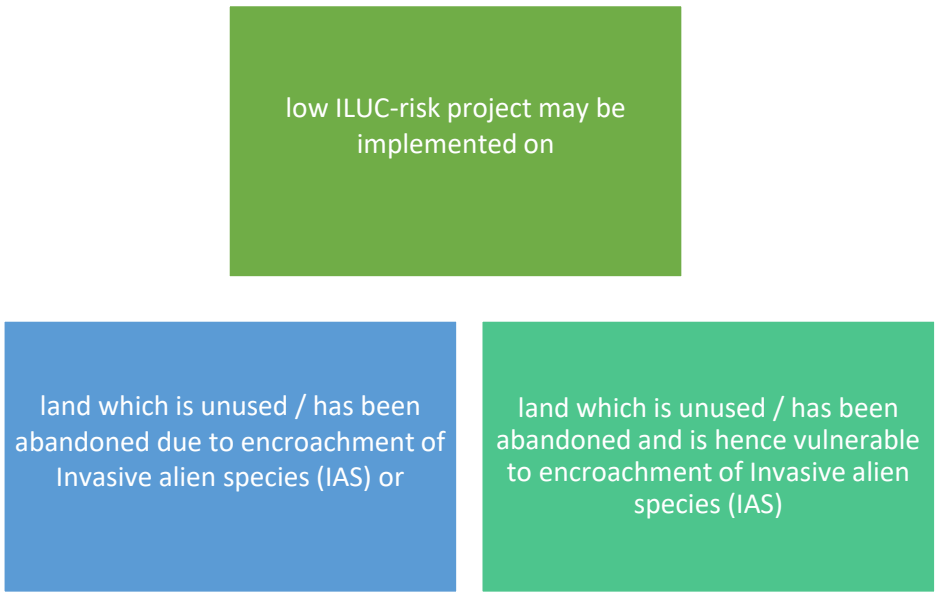
Soil carbon practices to a low ILUC-risk 'additionality measure' could qualify biofuel feedstock for low ILUC-risk certification.
The low ILUC-risk concept is founded on an 'additionality' principle:

> certification may be granted to projects only if they are implementing new and/or improved farm practices, and only if these practices go beyond business-as-usual management. Assessment of the last point is conducted through an 'additionality test', which requires that a project.

While biofuel feedstock production comes with some risks, it also offers genuine opportunities for biodiversity and nature restoration.

This is particularly apparent when considering low ILUC-risk projects which introduce crop production embedded in a sustainable agricultural model to unused land or abandoned agricultural land, in order to harvest additional biomass for energy without competing with food and feed production.

This type of low ILUC-risk project may be implemented on:



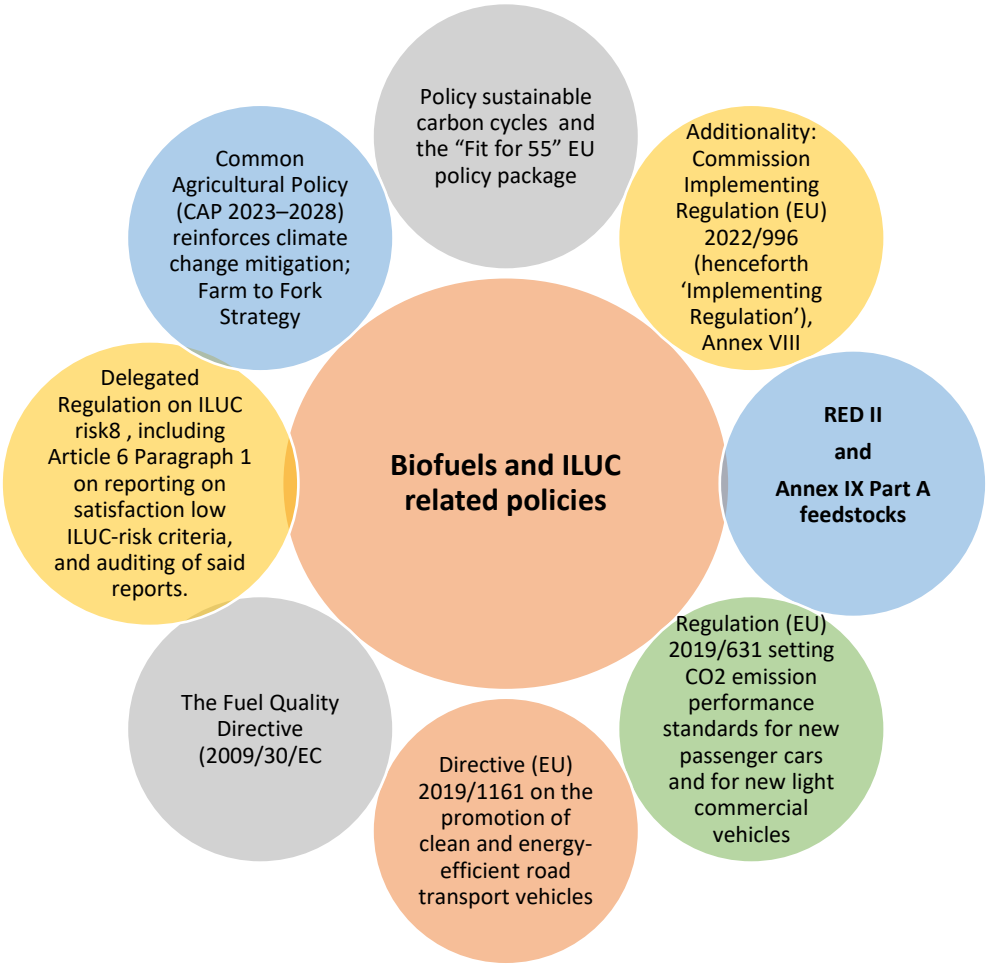
Currently, the low ILUC-risk terminology is exclusive to energy policy. If a common language can be developed to link low ILUC-risk projects with projects to deliver additional agricultural production at minimal sustainability risk more generally, this could allow low ILUC-risk to become a vehicle to demonstrate and implement agricultural ideas that will become important in the wider agricultural economy and will bring additional benefits to the biofuels sector as well.

References/links in BIKE website and others:

https://www.bike-biofuels.eu/wp-content/uploads/2023/05/BIKE_WP5_BriefingNote_7-Soil-Carbon-Credit.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2023/04/BIKE_WP5_BriefingNote_8-Carbon-Farming-Sustainability.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2022/05/20220429_BIKE_D4.1_1.0.pdf
https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0807
https://www.bike-biofuels.eu/wp-content/uploads/2023/04/BIKE_WP5_BriefingNote_5-Invasive-Species-2.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2023/02/BIKE_WP5_BriefingNote_1-Low-ILUC-Risk-Policy-Overview.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2023/07/BIKE_WP5_BriefingNote_10-Inputs-Unused-Land.pdf

POLICIES AND REGULATIONS

The main mandate to phase out high-ILUC risk biofuels is in the EU's Renewable Energy Directive II (RED II), it is, fuels produced from feedstocks associated with significant levels of agricultural expansion into land with high carbon stock. The RED II also introduces the concept of certified "low ILUC-risk" biofuels, bioliquids, and biomass fuels. These are produced from feedstocks that avoid food and feed crop displacement through one of two additional pathways: (i) yield increases from improved agronomic practices, or (ii) cultivation of areas not previously used for crop production (including areas with natural constraints such as unused, abandoned, or severely degraded). Other policies and regulations (not exhaustive) that are related to the production of biofuels and linked to low-ILUC production are:



References/links in BIKE website:

https://www.bike-biofuels.eu/wp-content/uploads/2022/05/Paper-on-Opportunities-for-Low-Indirect-Land-Use-Biomass-for-Biofuels-in-Europe.pdf

https://www.bike-biofuels.eu/wp-content/uploads/2020/12/UPM-Climate-Positive-Fuels-2020-1.pdf

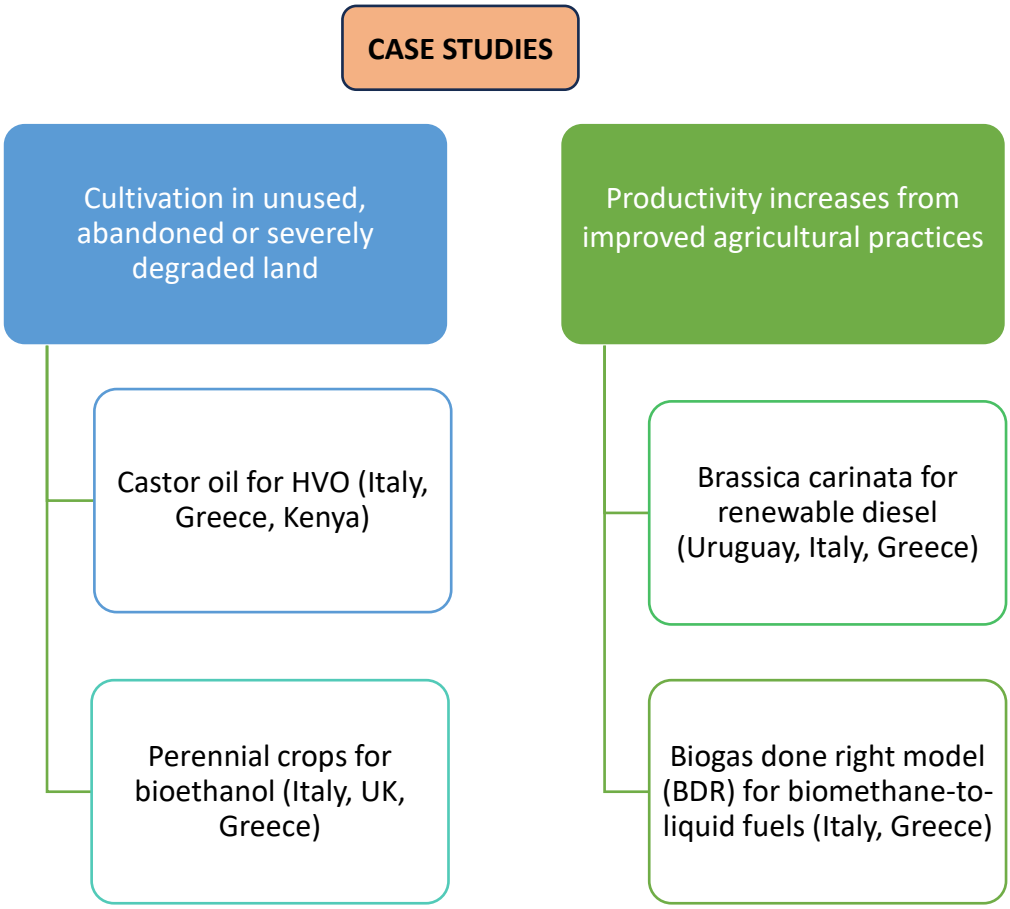
https://www.bike-biofuels.eu/wp-content/uploads/2022/12/BIKE_WP5_BriefingNote_3-REDII-Member-States.pdf

https://www.bike-biofuels.eu/wp-content/uploads/2023/02/BIKE_WP5_BriefingNote_1-Low-ILUC-Risk-Policy-Overview.pdf

https://www.bike-biofuels.eu/wp-content/uploads/2022/12/BIKE_WP5_BriefingNote_2-Policy-Definitions.pdf

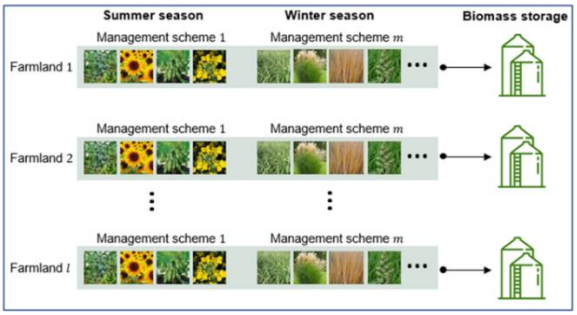
A GLANCE AT CASE STUDIES

BIKE worked on four case studies that were modelled to support: (i) planning of low-ILUC biomass production, (ii) production of biomethane using low-ILUC biomass feedstocks, (iii) production of bioethanol using Miscanthus cultivated on unused lands, and (iv) production of HVO using castor seed cultivated on degraded lands.



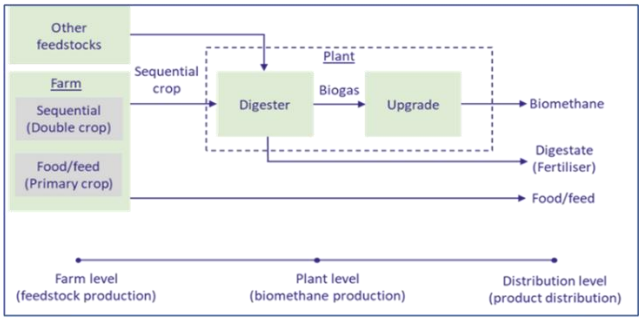
The model and optimisation-based methodologies addressed the challenges related to climate positive farming solutions assessment for the case studies. The models were based on the supply chains of the case studies.

1 Planning of low-ILUC biomass feedstock production. The agricultural practices include crop rotation, inter-cropping, cover cropping



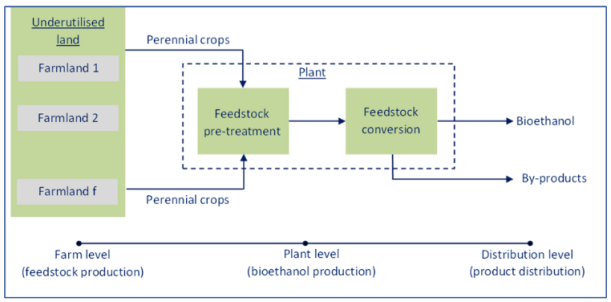
Schematic showing the proposed farm management system for low-ILUC biomass feedstock production.

2. Biomethane production using low-ILUC biomass feedstock



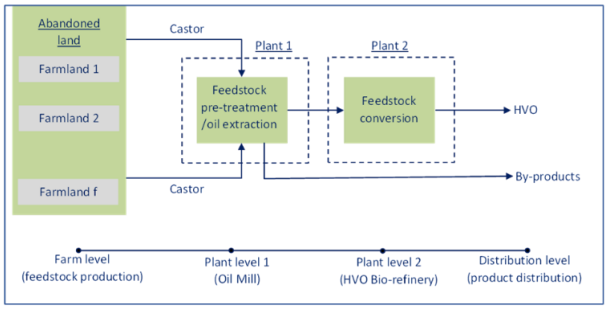
Schematic representation of the three levels of biomethane value chain. In this analysis, biomethane is produced from low-ILUC biomass feedstocks.

3. Integrated production of 1G & 2G bioethanol using low-ILUC biomass feedstock.



Schematic showing the proposed supply chain for 2G bioethanol produced using low-ILUC biomass feedstock

4. Production of hydrotreated vegetable oil using low-ILUC biomass feedstock



Schematic showing the proposed supply chain for HVO produced using low-ILUC biomass feedstock

Moreover, a GIS mapping activity and value chains assessment was performed to assess the replicability of BIKE case studies in Europe and their potential contribution to the EU renewable energy share. The results of the assessment activity, summarized in D3.3 and D3.5, brought to identify the potential production of HVO, biodiesel, F.T. fuel and lignocellulosic ethanol by replicating the BIKE value chains in the EU territory within 2030.

References/links in BIKE website:

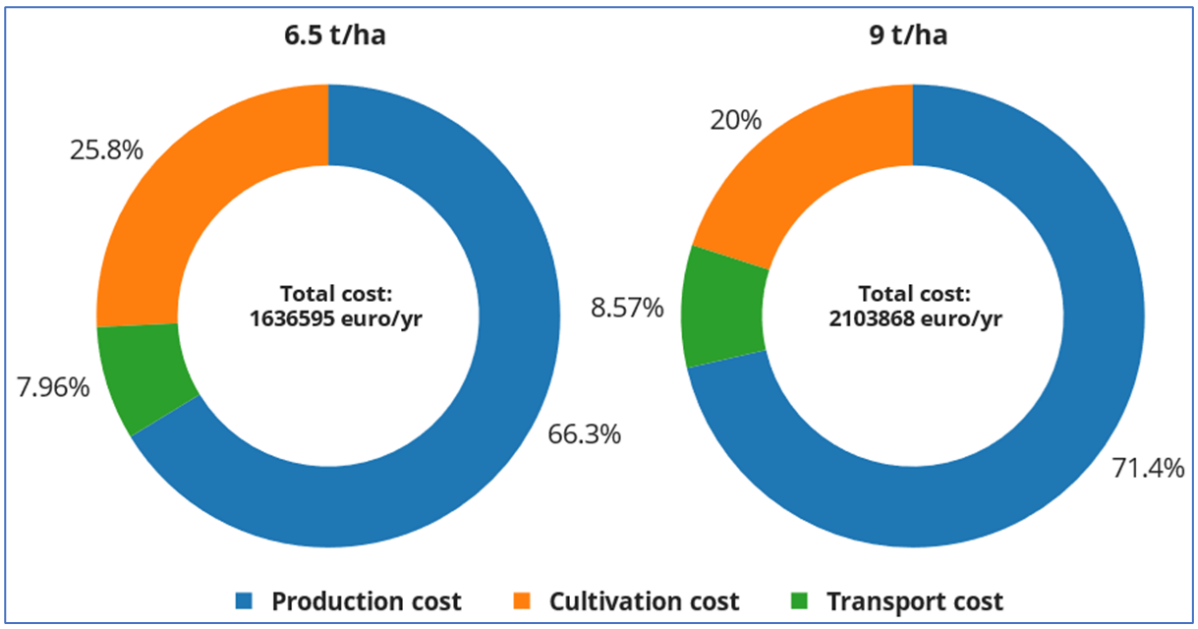
https://www.bike-biofuels.eu/case-studies/

https://www.bike-biofuels.eu/wp-content/uploads/2023/09/D2.3-Climate-Positive-Farming_ICL_2.0.pdf

https://www.bike-biofuels.eu/wp-content/uploads/2023/07/Deliverable-D3.3_BIKE-2.pdf

Case study 1: Miscanthus for bioethanol production

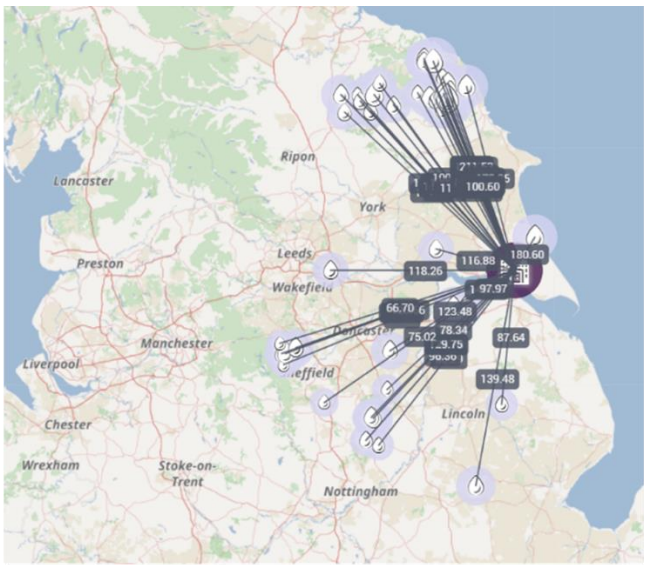
This case study assesses the potential of producing 2G bioethanol using Miscanthus cultivated on underutilised lands in the UK. To make use of existing resources and avoid large capital investment related to building a new plant, this report analyses the retrofit of an existing 1G bioethanol plant to allow production of 2G bioethanol using Miscanthus as feedstock. Two cases were analysed depending on target area for feedstock cultivation, i.e., cultivation on underutilised lands within 50 km and 100 km radius to an existing biorefinery.



Breakdown of total cost for the production of bioethanol from Miscanthus cultivated on underutilised lands within 100 km radius to an existing bioethanol plant.

Here figures show the cost breakdown and the supply of part of the miscanthus to feed the 2g plant. There is not sufficient underutilised land to supply miscanthus in the 100 km radius.

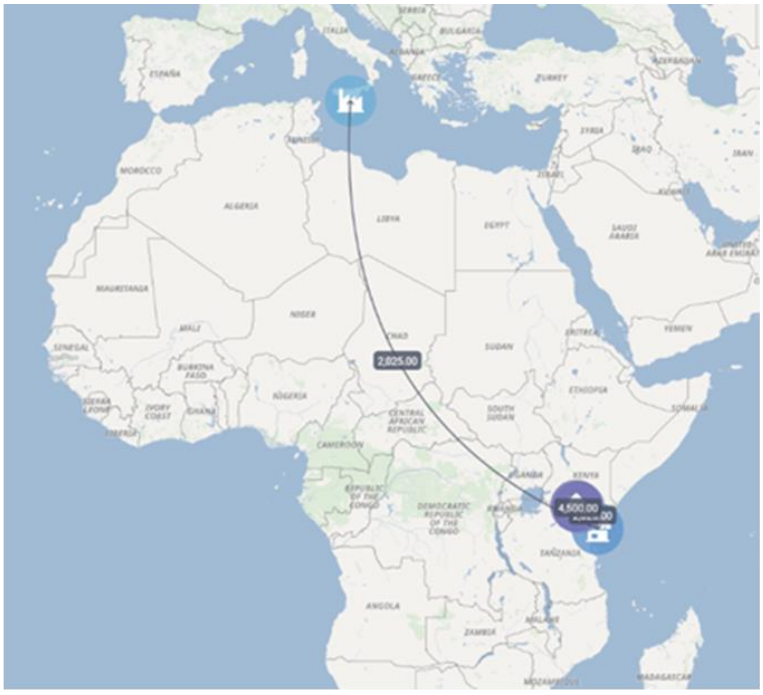
Possible solutions would be to use alternative feedstocks, increase the productivity, and the collection radius (although this would increase costs and emissions).



Map showing the supply of low-ILUC feedstock (Miscanthus) from various farmlands to an existing bioethanol plant. The farmlands are located within 100 km radius to the plant.

Case 2 Castor seed for HVO production

This case study evaluates the profitability of HVO production using castor seed cultivated on abandoned or degraded farmland. According to the existing HVO value chain, cultivation of castor seed and extraction of castor oil are carried out in Kenya while conversion of castor oil to hydrotreated vegetable oil is carried out in Italy. The cultivation of castor seed (*Ricinus communis*) for HVO production is carried out on 3000 hectares farmland located in Kenya, where about 6000 farmers were involve in land preparation as well as planting and harvesting of castor seed.



Map showing HVO supply chain. Castor cultivation farm and oil extraction plant are in Kenya while HVO biorefinery is located in Italy.

Replicability of the two value chains well performed to analyse the cases in other regions of the European Union.

References/links in BIKE website:

https://www.bike-biofuels.eu/wp-content/uploads/2021/09/FACTSHEET-4.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2021/09/BIKE_Factsheet_ENI.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2023/09/D2.3-Climate-Positive-Farming_ICL_2.0.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2023/07/Deliverable-D3.3_BIKE-2.pdf

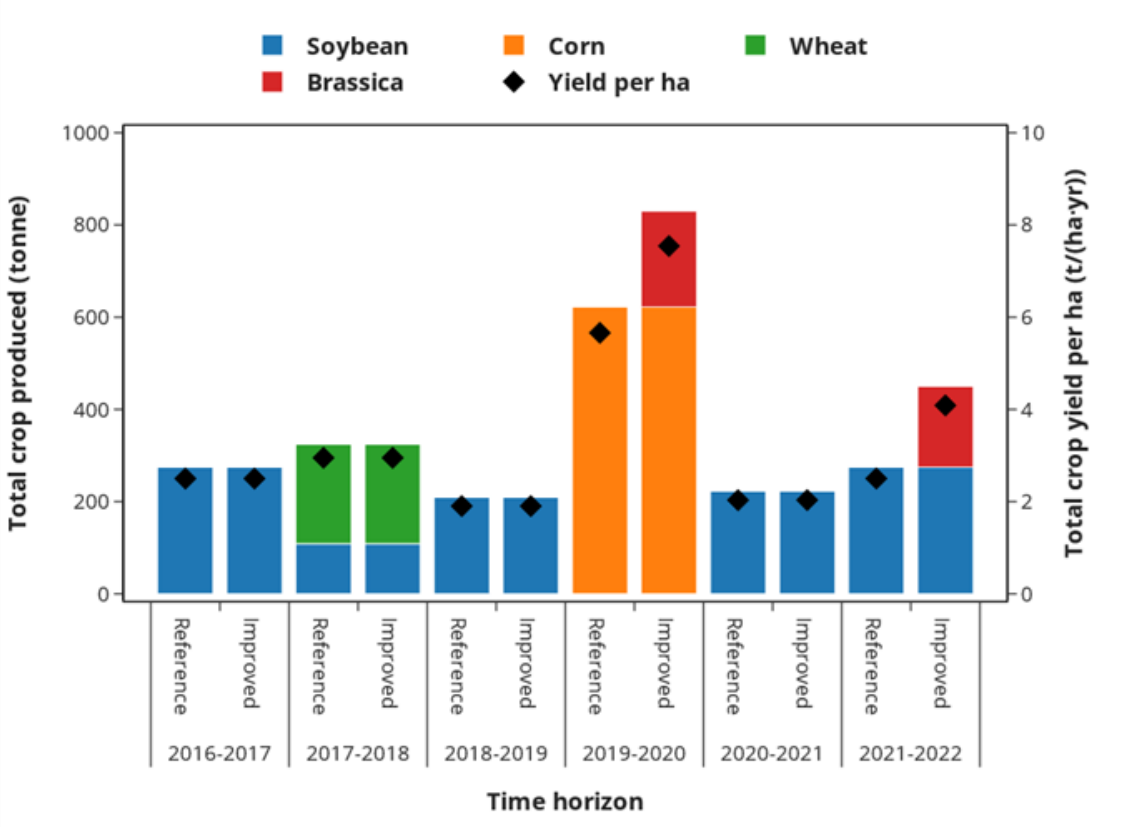
IMPROVED AGRICULTURAL PRACTICES

The case studies were presented and modeled in BIKE. Here is an example of the cultivation in degraded land for HVO production in Uruguay.

Case 3 Brassica for HVO production

Cultivation of *Brassica* in Uruguay

The cultivation of Brassica in Uruguay demonstrates the benefits of sustainable agricultural practices. The data used in the model represents a reference case and improved case. The reference case is the conventional crop rotation practice using non-productive cover crops while in the improved case, Brassica replaces the non-productive cover crops.

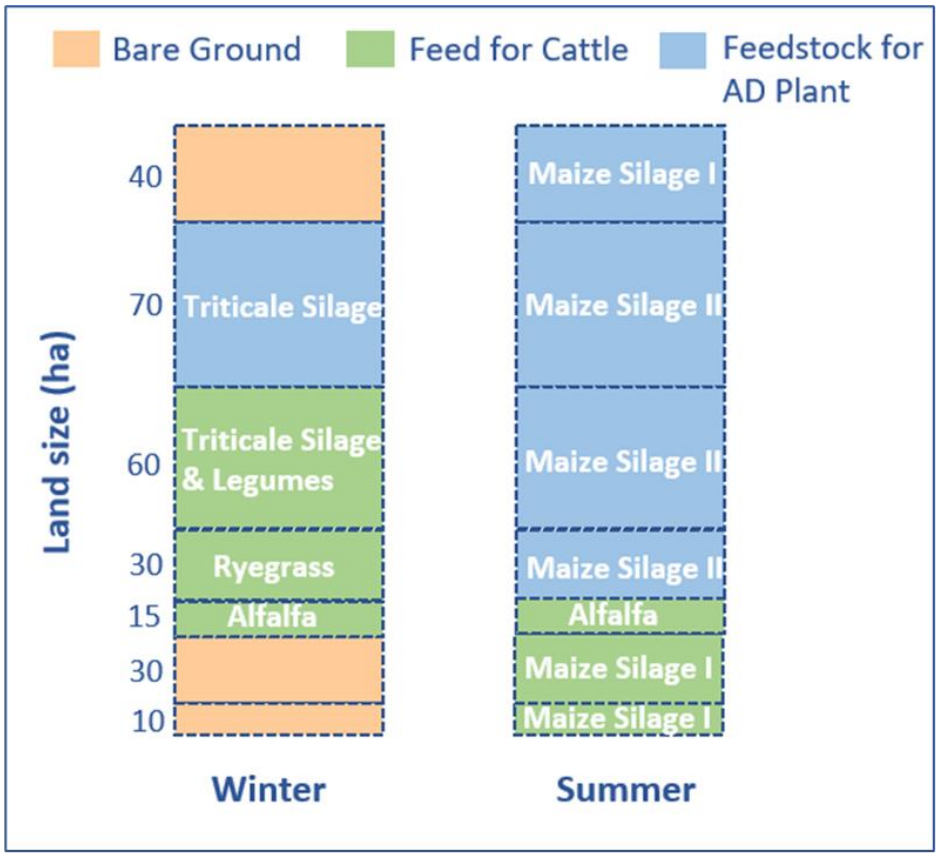


Annual crop produced over the entire planning horizon. Vertical bars with two crop types indicate double cropping where either wheat or Brassica is cultivated as winter crop.

The model demonstrates that it would be profitable to use brassica as a rotational winter crop and this would give additional value to land as well as increasing gross revenues. However, results are linked to the crop selling price and economic support may be needed to incentivise farmers in case of market variances.

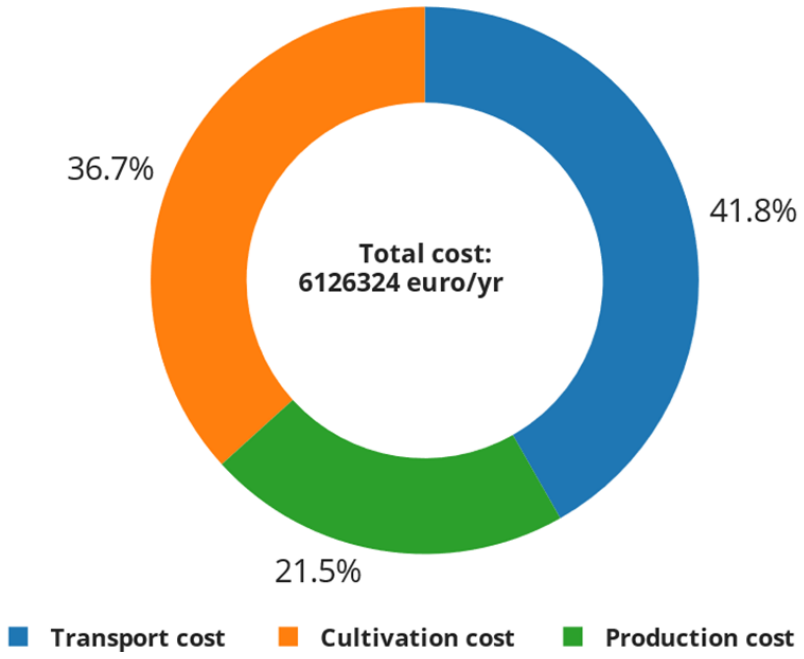
Case 4 Biomethane production via Biogas Done Right model

The benefit of climate positive farming is demonstrated using two case studies, depending on whether the biomass feedstock is produced based on monocropping system or sequential cropping (aka double cropping) system. The two case studies focus on the production of biomethane and organic fertiliser (aka digestate) using low-ILUC biomass feedstocks.



Land-use practices for the northern Italy farm. (Source: Valli et al., 2017)

The case study compares the monocropping system with the sequential cropping which can be used for the biogas plant. Moving from monocropping to sequential cropping reduces the overall biogas yield from 13.8 km3 per ha per year to 12.4km3 per ha per year. However the digestate yields allow nutrient reintegration without additional chemical fertilizers in the second case.



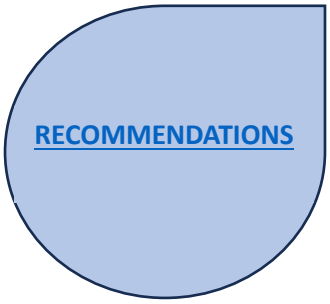
Breakdown of total cost to produce HVO from castor cultivated on degraded and abandoned lands.

The cost breakdown and the supply chain for the castor oil supply chain avails of the use of underutilised lands and takes advantage from a decentralised configuration between the oil mill located in Kenya and the refinery located in Italy. **If credits were given to the additionality measures**, fairer economic conditions would be granted to farmers, considering that cultivation has the highest share of costs.

Replicability of the two value chains well performed to analyse the cases in other regions of the European Union.

References/links in BIKE website:

https://www.bike-biofuels.eu/wp-content/uploads/2021/09/FACTSHEET-4.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2021/09/BIKE_Factsheet_ENI.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2023/07/BIKE_D.2.3_ICL_1.0.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2023/07/Deliverable-D3.3_BIKE-2.pdf



The BIKE project offers a series of recommendations on different topics from policy to environmental and technical recommendations.

ILUC additionality

- Mechanisation (sowing, precision farming, harvesting machinery or machinery to reduce postharvest losses)
- Multi-cropping (Introduction of productive woody plants onto arable lands; Intercropping with introduction of a crop grown amidst the main crop or in-between its planting rows, intended to be harvested or to be supportive to the harvest of the main crop
- Management (e.g.: Landscape elements with contour ploughing on steep slopes, terraces, buffer strips, field margins; Genotype selection and improvement with appropriate crop genotype selection and improvement; Irrigation with vegetated waterways and drainage, precision irrigation, rainwater harvesting with low-cost practices).
- Replanting (perennial crops)

Climate and co-benefits

- For Invasive species (IAS) there should be measures on the regulation such as in the CAP and in the provision of incentives
- The Commission could update the low ILUC-risk text to include words to the to the effect of: 'A low ILUC-risk project shall be considered to have no negative impact on long-term soil carbon if it has received certification under the Carbon Removal Regulation.'
- The Carbon Removal Regulation could likewise be updated
- The additionality test is another area where practical harmonisation of regulations and certification procedures is possible
- the Commission support low ILUC-risk field trials for the development of complex sustainable agrotechnical systems applicable in unused, degraded, abandoned, marginal lands, where biodiversity can also be increased. The Commission may also consider the creation of precise demarcations for each category of unused land in public registers and land use maps

CASE STUDIES

- From the results, farmers interested in these models are recommended to sell soybean, wheat and brassica above the breakeven price to avoid losses. The estimated selling price for the three crops are 362 €/t, 321 €/t and 381 €/t respectively.
- To meet the demand of 40,000 t/yr of 2G bioethanol in the UK, approximately 17,094 hectares of underutilised land is required.
- Policy makers should consider options to support alternatives such as retrofitting, and inter-cropping to avoid or mitigate ILUC
- The private sector looking for raw or limited processing of crops need to consider sustainability issues and standard certifications for the implementation of these models

POLICIES AND REGULATIONS

- It is recommended that the Commission considers adding provisions to the Taxonomy Technical Screening Criteria for climate mitigation regarding the manufacture of transport biofuels in order to recognise the EU's low ILUC-risk system as providing verification that ILUC impacts have been mitigated
- That the Commission supports low ILUC-risk field trials for the development of complex sustainable agrotechnical systems applicable in unused, degraded, abandoned, marginal lands, where biodiversity can also be increased.
- The Commission may also consider the creation of precise demarcations for each category of unused land in public registers and land use maps
- Low ILUC-risk terminology is exclusive to energy policy. If a common language can be developed to link low ILUC-risk projects with agricultural production at minimal sustainability risk this could allow low ILUC-risk to become a vehicle to demonstrate and implement wider agricultural activities with economic benefits and will bring additional benefits to the biofuels sector as well.

References/links in BIKE website:

https://www.bike-biofuels.eu/wp-content/uploads/2023/02/BIKE_WP5_BriefingNote_4-Additionally-Measures.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2023/04/BIKE_WP5_BriefingNote_5-Invasive-Species-2.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2023/07/BIKE_WP5_BriefingNote_12-EU-Taxonomy.pdf
https://www.bike-biofuels.eu/wp-content/uploads/2022/10/BIKE_WP5_D5.1_1.0.pdf

SHORT SURVEY

BIKE (Biofuels production at low Indirect Land Use Change risk for European sustainable bioeconomy) is a Horizon 2020 project that supports the implementation of the Renewable Energy Directive II of the European Commission by providing evidence, measuring and widely disseminating the market potential of low ILUC risk value chains for biomass, biofuels and bioliquids in Europe. The purpose of the survey is to gather your views on the Toolkit. The data that you provide will be used for monitoring the impact of the BIKE project and help improve the Toolki. You will not be asked to provide any personal data and your answers will be bound by all applicable General Data Protection Regulation (UK GDPR and the Data Protection Act 2018 and the EU GDPR 2016/679). The survey data will be stored securely by the project partners at Imperial College London. Before you proceed, you'll need to give your consent below. Thank you for your interest and for taking part!

https://imperial.eu.qualtrics.com/jfe/form/SV_4MjMd2r1f1JC8yG