

How to overcome incoherency in EU policy on the energy- agriculture nexus

A studio Gear Up Article



March 2024

How to overcome incoherency in EU Policy on the energy- agriculture nexus?

Date: March 2024

Authors: Jouk Hogenhuis

© studio Gear Up B.V., 2024

Address: Cruquiusweg 111-A
1019 AG Amsterdam
the Netherlands
+31-20-2117205
info@studiogearup.com
www.studiogearup.com

Summary

The European Union is missing out on a chance to have agriculture and the provision of renewable energy work more closely together in synergy. There is great urgency in substituting fossil resources, not in the least in the energy sectors. Agriculture is vital for the energy transition as it can provide the necessary resources to upscale renewable energy.

However, policy is not providing the necessary guidance to nudge farmers to start cultivating crops for energy purposes. Renewable energy policy has proven to be a strong driver for feedstock demand markets, but the current direction of policy creates a limited prospect for any crop-based biofuels out of fear of competing for land with food provision. Dedicated energy crop cultivation, however, can provide feedstocks for the renewable energy sector, while increasing food crop yields and regenerating soils. Additionally, they are an opportunity to bring additional income to farmers. At the farmer's side, the Common Agricultural Policy is setting the right framework conditions and objectives in which energy crops seem advantageous, but it fails to back this up with the necessary financial incentives for farmers to change ways and adopt new practices.

A better aligned energy and agriculture policy, where a strong demand market for energy crops is created and farmers are better rewarded for taking care of soils and for providing ecosystem services, helps to ramp up volumes of renewable fuels in transport, alongside other efforts for sustainable transport including electrification. To this purpose, we offer recommendations to the European Commission on creating more synergy between agriculture and energy policy.

An urgency for climate and environment and an opportunity for business

Recognising the existential threat that climate change and environmental degradation pose to Europe and the world, the European Union (EU) is aiming to transform into a modern, resource-efficient, and competitive economy that is climate neutral by 2050. Such an economy will need to break away from the dependency on fossil resources. Climate neutrality in the EU particularly relies on the Union's capacity to reduce emissions from the energy sector, which accounts for more than 75% of the EU's greenhouse gas emissions. Besides focusing on increased resource and energy efficiency and circularity, the role of biobased energy and resources becomes increasingly large.

Agriculture and the provision of renewable energy are inherently intertwined. Bioenergy is still one of the main sources of renewable energy (worldwide and in the EU) and relies for its production, among others, on feedstocks provided by the agricultural sector. The policy fields of agriculture and renewable energy in the EU, however, are not yet meeting. EU agricultural policy is predominantly focused on securing the production of food and feed products while largely neglecting its role in providing feedstock for the biobased economy. Despite acknowledging the important role of agriculture to provide biobased feedstock for chemicals, energy and materials, policy is failing to provide the right incentives to make this a reality. On the other end, the EU's bioenergy policy is bending in all kinds of ways to prevent competition with food and feed production.

Alternatively, agriculture and the renewable energy sector can work in synergy by stimulating the cultivation of energy crops in specific agricultural set-ups. Thereby, farmers can benefit from additional income streams and the sector as a whole, can increase the supply of sustainable biobased feedstock, while improving food security. However, incoherency in the objectives and instruments set by the different policies is causing farmers and society to miss out on a great opportunity. This blog first elaborates on the potential synergies between these sectors and the role that energy crop cultivation can have in

reaching ambitious climate and environmental objectives. Then, we discuss the existing instruments in policy on energy crop cultivation and highlight missed opportunities. We then conclude by suggesting several recommendations to the European Commission for policy intervention.

The power of energy crops

Energy crops are crops that are grown primarily for the purpose of delivering feedstock for the production of bioenergy. Cultivation of energy crops does not deliver food products but, contrary to common belief, can take place in synergy with the production of food crops. Energy crop cultivation is often low-cost and low-maintenance, making it suitable for farm areas that are difficult to manage. Besides providing valuable resources to the biobased economy, their cultivation can also bring multiple climate and environmental benefits, when used in the right agricultural set-up.

Incorporation of energy crops in a crop rotation helps stabilise and even increase the productivity on agricultural soils, while reducing the need for agricultural inputs. Due to their deep rooting systems, energy crops improve water retention and prevent erosion and nutrient leakage. Such a set-up also improves soil carbon accumulation, helping to mitigate climate change. In this way, energy crops can be complementary to food production systems and do not compete for land with food production.

In areas characterised by low productivity energy crops can help to regenerate soil fertility by increasing soil carbon content and soil biodiversity and by preventing erosion and leakage of nutrients (Ford et al., 2024; Lewandowski et al., 2023). Therefore, energy crops are very useful to regenerate, or revitalise, so-called marginal lands, which are lands that are unattractive for main agricultural production. On the types of marginal land where some form of agriculture is still possible, such as reclaimed, idle, fallow or abandoned land, energy crops are likely to perform better in terms of yield and farmer's income.

The European Climate Law (EU/2021/1119) obliges the EU to reach climate neutrality by 2050. To achieve this, the EU has set the ambitious objective of realising 310 Million tonnes of land-based carbon removals by 2030 (EU/2018/841). Furthermore, it is estimated that between 60 and 70% of EU soils are unhealthy and several objectives are set to regenerate soil health (EC, 2024b). Energy crops can help to achieve these soil health and climate objectives. Nevertheless, the uptake of energy crop cultivation by farmers remains limited. The following sections elaborate on why policy is hindering further uptake of energy crop cultivation and what is needed for energy crop cultivation to be more widely adopted in agriculture.

Possibilities to support energy crop growth

There is a significant opportunity for perennial energy crops to rehabilitate marginal lands and they can play an important role in meeting ambitious climate targets. Nevertheless, the uptake of perennial energy crop cultivation has continued to stagnate and significant policy intervention will be needed to overcome the present barriers to land use change for perennials. Possible policy measures include an integrated land use policy, planting grants, government-backed contracts for biomass supply, and government-supplied advice to farmers (Ford et al., 2024).

Incentives related to the growth of energy crops on marginal land could be of different types (Lewandowski et al., 2023):

- Direct incentives by governments or the private sector. Belgium, for example, is planning to pay a yearly premium of up to € 600/ha for the first five years of energy crop cultivation, covering the costs of establishment. Moreover, companies that want to secure their feedstock can either support or pay for the establishment of the crop and/or offer long-term contracts with fair and guaranteed payments for the biomass;
- Indirect incentives in the shape of payment for environmental services provided by perennial energy crop cultivation (Von Cossel et al., 2020). For example, by including environmental provisions into EU policies, in particular the Common Agriculture Policy

(CAP), involving farmers in downstream stages of bioeconomy value chains through the use of biomass to fulfil their own needs (e.g., use of perennial crops as livestock bedding or as heating fuel, or to produce and sell pellets), and demonstration projects that can serve as information hubs for local farmers.

Alternatively, sequential cropping offers significant opportunity for implementing energy crop cultivation onto agricultural land. Energy crops can be integrated into a crop rotation with crops cultivated for food/feed purposes. This actually improves yields of the food/feed crops, while also improving soil health. In this way, valuable biomass feedstock for energy and materials can be supplied, without an increased land claim, minimising the risk of leading to indirect land-use changes into land with high carbon stock. However, without sufficient financial incentive, farmers are not easily moved to adopt new farming practices. Therefore, governments and companies are needed to create financial benefit and security of demand for feedstock to stimulate the adoption of these practices.

Research shows that the most important condition to increase the uptake of sequential cropping practices, or the use of cover crops in winter periods, is the existence of a dedicated market for the produced feedstock (Magnolo et al., 2021). Policies that create incentives on the demand for energy crops as a feedstock for the production of biochemicals, biofuels and other end products can help create a commodity market for energy crops for non-food and feed purposes. In addition, policies that reward improvements in soil health, carbon stock and other environmental benefits can also help to create a push for the uptake of such practices.

Agricultural policy envisions energy crops but does not provide the incentives

All multi-purpose crops are able to deliver environmental functions and will, when these functions are rewarded, be favoured by farmers. The European Union's Common Agricultural Policy (CAP) EU/2021/2115 is taking tentative first steps in supporting farmers in the uptake of energy crop cultivation in their practices. The CAP changed its approach from more compliance-based toward more result-oriented and aims to deliver on the EU's overall objectives. The performance to deliver on these objectives is assessed bi-annually. Some of these objectives are:

- *To contribute to climate change mitigation and adaptation, including by reducing greenhouse gas emissions and enhancing carbon sequestration, as well as to promote sustainable energy.*
- *To foster sustainable development and efficient management of natural resources such as water, soil and air, including by reducing chemical dependency.*

75% of direct CAP funds used to support farmers income without many conditions that improve environment and climate

The bulk of the CAP's funds are spent on direct income support to farmers (about 75%). To be eligible at all to receive such direct income support, farmers need to comply with statutory management requirements (SMRs) and good agricultural and environmental conditions (GAECs). Two GAECs are particularly relevant for energy crop cultivation:

- *GAEC 6 - Minimum soil cover to avoid bare soil in periods that are most sensitive.*
This condition can in theory incentivise the uptake of sequential cropping practices. However, Member States are given flexibility to define the "sensitive period" over which the condition applies, which leads to them watering down the impact of the measure.
- *GAEC 7 - Crop rotation in arable land, except for crops growing under water.*
Although this condition theoretically obliges crop rotation, it allows for crop diversification to be implemented as an alternative. Moreover, in implementing the CAP into national strategies, Member States often define crop rotation very weakly, lacking clear definitions of main crops and secondary crops.

These examples show a lack of clear definitions. Combined with a significant amount of flexibility in implementation between Member States, this does not help deliver the right

incentives for energy crop cultivation. Member States will want to not put too much burden on its own farmers, risking of creating an unfavourable unlevel playing field. This leads to a race to the bottom, effectively leading to unambitious and ineffective policy.

Limited funds directed to environmental and climate investments

A small part of these direct payment's funds (25%) is ringfenced for farmers that adopt so called eco-schemes, measures benefiting climate and environment that go beyond the SMRs and GAECs. Assessment of the eco-schemes proposed by Member States concludes that measures that are supposed to contribute to improved soil and nutrient management are only adding very little value to existing conditionality standards and lack overall ambition (Birdlife & EEB, 2022).

The remaining budget of the CAP is spent on indirect support to farmers via rural development programmes. The agri-environmental-climate measures (AECMs) opens another opportunity to support improvement of soil health and nutrient management. Until now, however, here too the translation of CAP into national strategies has seen very low ambition in that regard.

Assessment of CAP performance: right direction, poor execution

To assess the performance of the CAP on the objective on climate change mitigation and adaptation as discussed above, certain indicators (impact, result, context) have been defined on sustainable feedstock production for renewable energy production from agriculture and forestry. Furthermore, several result indicators are identified to assess the objective on soil health and nutrient management. Many of the targets for these indicators are set quite low by Member States, missing the opportunity to generate investment in beneficial practices.

In conclusion, the CAP seems to set the right objectives and the overall design of the framework is useful to foster beneficial environmental and climate results. However, it does not yet set high ambitions, lacks clear shared definitions and the flexibility in implementation leads to a race to the bottom that waters down any ambitions of the overall policy. In effect, the agricultural policy in the EU fails to provide sufficient incentive for the adoption of energy crops in different agricultural set-ups.

Energy policy can be an important driver for energy crop cultivation

Cultivation and supply of energy crops is insufficiently incentivised by the CAP on the supply side, but the overall objective that the EU sets is clear on that sustainable production of renewable energy from agriculture is desired. The Renewable Energy Directive (RED) EU/2018/2001 and its recent amendments (RED III, EU/2023/2413) offer an opportunity for providing incentives on the demand for sustainable agricultural feedstock.

The RED's targets for renewable energy supply in different sectors and specifically in transport have proven strong incentives to the production of renewable fuels, and in effect to the sourcing of sustainable feedstock from agriculture. The RED can potentially send a strong incentive to the production of energy crops under specific conditions, such as in specific agricultural set-ups, whether on marginal land or integrated in cropping rotations.

Some feedstock categories are receiving additional stimulation by a sub-mandate, such as biofuels produced from feedstocks listed in RED Annex IX Part A, which mostly includes wastes and residues. On the other hand, some feedstock categories are subjected to capped contributions, such as biofuels produced from food and feed crops and biofuels produced from feedstocks listed in RED Annex IX Part B. Momentarily, energy crops grown as a main crop on agricultural land would classify as food and feed crop. The European Commission wants to limit the use of such food and feed crops for bioenergy usage, out of fear for indirect land use changes and competition with food security. Therefore, the Commission has set a cap on the contribution of these food and feed crops to the targets set in the RED. When grown in alternative agricultural set-ups such as the ones described previously, energy crops would not classify as food and feed crops nor any other specific category. Therefore, they would not be subjected to any cap, but also not to any specific extra incentive.

Recently, however, the Commission adopted several changes to the feedstock lists in Annex IX Part A and B (EC, 2024a). This included specifically two additions to Annex IX Part A that can increase demand for energy crops, when grown in a crop rotation or on marginal lands - although severely degraded lands are much more narrowly defined and are only one sub-category of marginal lands.

(t) Intermediate crops, such as catch crops and cover crops that are grown in areas where due to a short vegetation period the production of food and feed crops is limited to one harvest and provided their use does not trigger demand for additional land and provided the soil organic matter content is maintained, where used for the production of biofuel for the aviation sector.

(u) Non-food crops grown on severely degraded land, not suitable for food and feed crops, where used for the production of biofuel for the aviation sector.

However, one detail to these categories that is very significant is in the last sentences of each of them, where it says that these feedstocks only classify as Annex IX Part A feedstocks when used for the production of biofuel for the aviation sector. When these feedstocks are not used for the production of biofuel for the aviation sector, but for other transport modalities, then they will classify as Annex IX Part B and will be subjected to a capped contribution to the targets.

Essentially, this means that these recent changes in renewable energy policy do not offer a new strong push to the demand market for energy crops. The demand for sustainable aviation fuels is still rather limited in volumes compared to the demand for renewable fuels in the road sector. In the capped category, the incentives to source energy crops are very weak, as there are other feedstocks on that list that are already widely used and largely fill the capped contribution for the entire category.

Strengthen synergies between energy and agriculture policy to serve the climate, environment and biobased economy

Neither policy on the supply side, the cultivation of feedstock, nor policy on the demand side, sourcing bio-feedstock is providing sufficient incentives for the adoption of energy crop cultivation practices on marginal lands or in crop rotations.

The overall objectives set by the EU give off a clear and positive signal to the cultivation of energy crops, when considering the climate, environmental and social benefits that energy crops can bring. The CAP's overall approach, targeting the supply side, is taking a result-oriented perspective and the fact that the policy's effectiveness is assessed on the basis of delivering on the abovementioned objectives would suggest a promising future for energy crop cultivation in the EU. However, the reality proves that this is insufficiently backed up by ambitious and coherent implementation to provide the needed incentives to farmers. The RED, targeting the demand side, is proving a strong impulse to demand for biomass feedstocks, especially for those feedstocks subjected to a sub-mandate. At the same time, its capped categories create an unfavourable situation for cultivation of certain types of feedstocks. This make-or-break type of situation creates uncertainty that prevents farmers from adopting new practices, such as including energy crops in their rotation, and investors from developing crop cultivation on marginal lands. This uncertainty is amplified by the possibility for feedstocks to be moved from a list subjected to a sub mandate to a list subjected to a cap, with changes being made to the Annex IX lists.

What is needed from policy is a more holistic strategy behind policy on different topic areas. While dedicated policy on agriculture and dedicated policy on renewable energy make sense from a practical point of view, they need to be aligned in order to effectively contribute to realising the overall objectives.

We would strongly recommend the European Commission to focus on the following policy actions:

- **Stick to a result-oriented approach to the CAP and the assessment of the policy on basis of key indicators.**

- **Improve the Good Agricultural and Environmental Conditions in the CAP to be more clear and less open to interpretation.**

These are minimum standards and should not be subject to interpretation by Member States. Apply a “Yes, unless” approach, obliging farmers to meet those conditions while providing an opportunity for derogation only on a well-reasoned argument backed up by evidence.

- **Increase the ringfenced budget for eco-schemes and impose a more stringent review of the Member States’ proposed eco-scheme measures.**

Farmers rely on income support so this cannot be just taken away. However, farmers should be supported by public money for delivering ecosystem services just as well as for supplying food (if not more since food is paid for by the consumer and ecosystem services are largely not).

- **Develop clear and coherent rationale as a basis for imposing a sub mandate or a cap on biofuels of a certain type in the Renewable Energy Directive.**

Sub mandates and caps can make or break business cases for biofuel production and can boost or hinder activities in other sectors, such as agriculture. Currently, the logic behind inclusion of certain feedstocks on one or the other list, is far from clear and coherent. It is evident that policy should be able to change over time. However, in order to protect investments and provide stability and perspective for farmers (but technology developers as well), a clear and coherent rationale is needed that forms the basis on which biofuels fall under a cap or are stimulated by a sub-mandate. This rationale should not be based on specific feedstock categories, but on the basis of what benefits the feedstock cultivation is bringing in terms of social, environmental and climate impact, and on basis of what technologies are used to process it (low TRL that requires additional support to further develop, or high TRL which does not need additional support).

- **Support the possibilities for energy crop cultivation in set-ups that do not compete for high value land by including them in a feedstock list with a sub mandate, not in a capped feedstock list.**

A dedicated market for energy crops can help unlock investments in energy crop cultivation on marginal lands, which helps to rehabilitate these lands. Moreover, they can convince farmers to adopt energy crops in a rotation with existing crops, which helps to increase yields of the existing crops, while improving soil quality. Finally, these energy crops provide valuable resources to the biobased economy and they substitute fossil resources from which we need to break away.

Sources

- Birdlife & EEB (2022). Soil and carbon farming in the new CAP: alarming lack of action and ambition. Birdlife Europe & European Environmental Bureau. <https://eeb.org/wp-content/uploads/2022/06/Briefing-Soil-Health-No-Branding-V2.pdf>
- EC (2024a). *EU Mission: A Soil Deal for Europe*. European Commission. https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/soil-deal-europe_en
- EC (2024b). *Commission Delegated Directive amending Annex IX to Directive (EU) 2018/2001 of the European Parliament and of the Council as regards adding feedstocks for the production of biofuels and biogas*. European Commission. C(2024) 1585 final, awaiting publication in the Official Journal of the European Union. https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13484-Biofuels-updated-list-of-sustainable-biofuel-feedstocks_en
- Ford, J. S., Bale, C. S., & Taylor, P. G. (2024). The factors determining uptake of energy crop cultivation and woodland creation in England: Insights from farmers and landowners. *Biomass and Bioenergy*, 180, 107021.
- Lewandowski, I., von Cossel, M., Wagner, M., Clifton-Brown, J. & Kiesel, A. (2023). *Fostering the delivery of private and public goods from perennial cropping systems through policy measures*, 31st European Biomass Conference and Exhibition proceedings. http://www.etaflorence.it/proceedings_20Proceedings%20&limit=0
- Magnolo, F., Dekker, H., Decorte, M., Bezzi, G., Rossi, L., Meers, E., & Speelman, S. (2021). The Role of Sequential Cropping and Biogasdoneright™ in Enhancing the Sustainability of Agricultural Systems in Europe. *Agronomy*, 11(11), 2102.
- Von Cossel, M., Winkler, B., Mangold, A., Lask, J., Wagner, M., Lewandowski, I., ... & Kiesel, A. (2020). Bridging the gap between biofuels and biodiversity through monetizing environmental services of miscanthus cultivation. *Earth's Future*, 8(10), e2020EF001478.



Copyright studio Gear Up B.V. 2024

www.studiogearup.com