

Promoting sustainable food and feed systems



TRansition paths to sUustainable legume-based systems in Europe

About TRUE

The EU funded project "TRansition paths to sUustainable legume based systems in Europe" (TRUE) is a balanced practice-research partnership of 24 institutions, which aims to identify the best routes, or "transition paths" to **increase sustainable legume cultivation and consumption across Europe** and includes the entire legume feed and food value chains.

April 2017 – September 2021

This Policy Brief focusses on ***how the CAP, Supranational Protein Strategies (EC, 2018), and the EU Farm to Fork Strategy within the European Green Deal (EC, 2019) can be integrated to address the 'policy paradoxes' and deliver a more-effective 'policy toolbox'***, which is capable of sustaining increased grain legume production and consumption across Europe.



Policy implications and recommendations

1

The implementation of policies that encourage reduced use of synthetic nitrogen fertiliser use and/or increase organic N provisions could be an important step towards increasing home-grown legume cultivation. Although, it is not clear to what extent this will impact human consumption of legumes.

2

Such policies would need to be supported by significant **investment in R&D, agricultural extension services, and knowledge transfer** to allow for a smooth transition from high use of synthetic nitrogen fertiliser in conventional agriculture to precision- and agroecological farming.

3

Mitigation and adaptation strategies to combat climate change can have an indirect positive effect on legume production and consumption if these policies are implemented on a large scale and effectively.

4

Policies that tackle nutrition, health and diet are relevant for increasing legume consumption and, indirectly, legume production. However, preferences, culinary traditions, and cultural habits are difficult to change with top-down approaches.

5

Citizen-led initiatives that inform and educate the public on the environmental and health benefits of legume consumption should accompany policies that tackle production and farming strategies (*i.e.* Greening payments, with other agroecological and rural development incentives, etc.).

6

The CAP (Common Agricultural Policy) is an important tool to support food production and the protection of the natural environment. **The farm is a key component for the creation of any positive externalities.** Hence, the CAP needs to be re-oriented.

7

Trade agreements are part of a complex web of interconnections between economies worldwide. Any intervention will have repercussions along the food chain in general. Therefore, this strategy **is not advocated.**





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Challenges with current legume cultivation

Legumes can provide multiple benefits to Europe's cropped systems, citizens health, and the environment. However, these potential benefits are often hindered by lower average gross margins. Furthermore, there are environmental and economic risks posed by high input dependency for a narrow range of crops, plus high levels of plant-protein import dependency for animal feed.

Protein crops have been subsidised within the CAP. Despite these incentives, grain legumes cultivation has persisted at an exceptionally low level (1-4%) across the EU, and well below a proposed minimum target of 1 crop in 6, and idealised target of $\frac{1}{4}$ (or 25% of the rotation).

Commonly proposed policy options

to promote legume production in Europe are:

1. **pay a premium to compensate farmers** for the lower profit
2. **recognise areas cropped with legumes as a mean to fulfil the objectives of Ecological Focus Areas (EFAs)**, which are to make European agriculture more environmentally sustainable. The introduction of legumes in EFAs has been criticised as they are considered ineffective crops to increase biodiversity. The ban on the application of pesticides on EFAs has negatively influenced legumes in those areas. In addition, grain legume cropping is often selected as an EFA measure in place of other (non-cash-crop) based approaches that are more effective at delivering environmental and biodiversity provisions.



TRUE Findings

This policy brief builds on the H2020 funded TRUE project, which demonstrated that **increased legume production and consumption is hindered by system lock-ins that span the entire value chain**, not just production. Holistic, value-chain wide approaches are required to tackle these system lock-ins.

At the level of the cropped system, these approaches should consider: the role of farmers' knowledge and provision of independent advice and education regarding crop selection, availability of improved varieties, and agronomy. This should be extended to **ensure awareness of legumes potential to fulfil agroecological functions, including important environmental benefits such as optimising soil provisions and combating climate change** through more efficient management of reactive nutrients such as nitrogen and phosphorus, reduce GHG and eutrophication losses.

Increasingly, such potential is exploited commercially, offering unique selling points for traders, and especially for farmers engaged in short value chains.



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Future CAP (Common Agricultural Policy)

The future of the transition to legume supported food- and feed-systems is also connected to developing future CAP in the EU. The objectives of the future CAP are multiple. They span various agri-food sectors from competitiveness and food sovereignty to environmental care and climate action.

Here we present evidence from a multi-actor assessment, engaging stakeholders from across the whole value chain, to explore how legumes production and consumption are connected to each of the objectives of the future CAP and how legumes can be best used to deliver their multiple benefits in Europe.



Evidence and Analysis



Any improved suite of interventions should sustain legume grain production even when subsidies are removed and ensure sufficient market 'pull' whilst overcoming any perceptions that reduced mineral nitrogen fertiliser use is linked to lower yields. **Coherent policies and governance frameworks** for legume-supported cropped systems and the delivery of sustainable and healthy feed and food can **be better designed when stakeholders and decision-makers are engaged** (de Schutter, 2010; Gomez, 1996). To identify this more-resilient policy-mix, capable of overcoming the barriers which hinder the production and consumption of legumes in the EU, we engaged a broad range of stakeholders and decision-makers using '**the Delphi method**' (de Loe, 1995; Raynes, 2000), to facilitate the exchange of informed-opinions on the legume paradox.

Table 1. Participants' assessment (impact x probability ranked as **high-**, **medium-** or **low-** potential) and comments supporting or discouraging each of the ten policy interventions listed in the Delphi survey as potential future measures.

| Policy Interventions | Support | Discourage |
|--|---|--|
| Investment in agri-food and -feed research and knowledge transfer | Potential to close the yield/profitability gap between legumes and cereals, making legumes more competitive on both the feed- and the food markets. | Research and knowledge transfer alone doesn't not change the market, especially considering the current small share of legumes in the food system. |
| Preventing the use of inorganic nitrogen fertilisers | Likely to produce a drastic change in farmers' behaviour (towards producing more legumes), but how to make such a shift was questioned. | It might negatively affect cereal production (decreasing domestic yields and increasing prices), causing a crisis in EU agriculture. Imposing and monitoring such a restriction would be difficult. |
| Nutrition, diet and health policies and public campaigns | Customer-smart policies: diversity of leguminous plants and dishes should be promoted, and innovations in food technology should be taken up. | Consumption focused measures should be coupled with incentives for short food value chains or domestic production. Changing consumer behaviour is a slow process, and awareness-raising has limited impacts, especially if designed in a one-way communication format . |

Evidence and Analysis (cont.)



| Policy Interventions | Support | Discourage |
|--|---|--|
| Agricultural Incentives within the CAP | These might have substantial impact on legumes for feed but not for food. | Market opportunities should also be created at an increasing rate. |
| Green direct payments of the CAP | Seem to be plausible to exist in the long run. | Challenging for conventional legumes producers to meet requirements. |
| Climate Change Policies | highly positive impact on legume-supported food- and feed-chains. | The impact of climate measures often remains low due to their limited scale and real willingness of policymakers to make a paradigm shift. |
| Public Food Procurement | To be successful, it is important to create attractive leguminous food. Emphasis should be put on short value chains to benefit domestic legume producers. | Realising the benefits of such an intervention takes time and might depend on cultural traditions. |
| Changing international Trade agreements | Close the gap between import soybean sets the price level for protein crops in the EU. | Caution is needed due to complex interrelationships within a globalised market. |
| Policies supporting legume production and consumption | Large scale production of protein crops for the primary use of animal feed might not be possible/competitive in Europe. | Any policies targeting the production of plant protein for feed should also build in requirements for sustainability. |
| Providing transparency of market Data | Better information on market data could change power asymmetries within the value chain and therefore might help European producers to realise higher prices on the market. | Most of the market information is already available, and it does not influence the relations along the value chain much. Market data should not have any influence on the legume value chain. |

DELPHI Study Overall Results



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Expert opinions highlighted that the **CAP** is still considered an important tool to support food production and protect the natural environment.

The Green Deal in general, and the **Farm to Fork Strategy** in particular, represent a substantial policy innovation that may **positively impact legume production and consumption in the EU**.

By 2050, European agriculture aims to be carbon neutral, and at least 40% of the CAP overall budget for 2021-2027 would contribute to 'climate action'. Reducing carbon emissions may be coupled with reduced use of synthetic fertilisers, especially nitrogen, which need to be substituted by more environmentally friendly and diversification-focused practices, including **increased legumes in the rotation**.

Additionally, the Farm to Fork Strategy aims at a "fair, healthy and environmentally-friendly food system" by **rewarding farmers for their improved environment and climate performance**, including carbon-capture and retention and improved nutrient management. These practices, if **financially stimulated within the CAP and other public or private initiatives, can contribute to a growing willingness of farmers to produce more legumes**.

However, the questions remain:

‘Will the barriers and system lock-ins be overcome, and will the strategy be well implemented and integrated with other sectoral policies, such as health and nutrition in the various member states?’



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Authors

- ◆ **Bálint Balázs,**
- ◆ **Tiziana Centofanti**
- ◆ **Eszter Kelemen**
ESSRG, Hungary
- ◆ **Pietro Iannetta**
The James Hutton Institute, UK



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COORDINATOR

Pietro IANNETTA
The James Hutton Institute
pete.iannetta@hutton.ac.uk

FOR MORE INFORMATION

Contact: Bálint BALÁZS
balazs.balint@essrg.hu

FURTHER READING

Policy Briefs on: CAP (DOI:[10.5281/zenodo.4911263](https://doi.org/10.5281/zenodo.4911263))

Environment (DOI:[10.5281/zenodo.4911317](https://doi.org/10.5281/zenodo.4911317))

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Coláiste na Tríonóide, Baile Átha Cliath
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