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Fostering sustainable legume-based farming systems and agri-feed and food chains in the EU

**Deliverable D6.11**

***Final report on knowledge transfer activities for policy makers***

**Planned delivery date:** M48

**Actual submission date:** May 2021

**Start date of the project:** June 1st, 2017 **Duration:** 48 months

**Workpackage:** WP6

**Workpackage leader:** PGRO **Deliverable leader:** UNIBO

**Partners contributing to the deliverable:**

**Version:** V1

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| **Dissemination Level** | |
| Public | **x** |
| Classified, as referred to Commission Decision 2001/844/EC |  |
| Confidential, only for members of the consortium(including the Commission Services) |  |

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# Summary

The outcome of the Task 6.6 provides the evidence base for analyzing the policy instruments and measures that may influence the development of sustainable legume-based cropping and grassland systems and agri-food and feed chains. A series of 4 policy briefs has been produced in order to identify improved practical policy options to develop sustainable and competitive legume-based farming systems and agri-feed and food chains in the EU. Specific objectives were to perform a diagnostic of relevant policies affecting legumes and understand the effect of current policy settings at EU and national levels, to identify potential policy needs, to simulate selected alternative policy design options, and to iIdentify good practices and recommendations on prospective policy measures. Specifically, the Task 6.6 - Knowledge transfer for policy makers (M13-M48) is described in the DoA as follows: A minimum of 4 policy briefs will be produced drawing on the expertise of selected project partners and with the contributions from key Stakeholders. Policy briefs will consider the roles and responsibilities of different policy makers (EU, national, regional) and actors (research institutes, farmers, industry), the policy instruments and measures that may influence the development of sustainable legume-based cropping and grassland systems and agri-food and feed chains. For each policy brief a specific audience will be defined and the content tailored accordingly. A section in the Final Conference will be dedicated to policy engagement, targeting EC officers and policymakers.

# Policy Brief 1

**Short title:** Analysis of relevant policy instruments and their effects on legume cultivation in EU

To incentivize European legume production, a range of different EU and national policies have been introduced. These include CAP measures and other individual policies such as Environmental, Food, Health and Energy policies: each Member State has the possibility to provide payments coupled with the cultivation of legume crops, to cultivate legume crops within Ecological Focus Areas (EFAs), or to provide subsidies for the implementation of agro-ecological schemes that include the cultivation of legumes. The aim of the study was to review the policies affecting legumes and analyze their impact. The diagnostic approach involved holding seven national workshops designed to gather expert views on the influence of current EU and national level policies. This analysis provided an understanding of the national and EU level contexts within which legume related policies were both designed and implemented. The policy environment for agriculture in the EU is complex, comprising a mix of regulatory, advice and incentive interventions. These are implemented mainly on a common basis but with a degree of flexibility both between and within Member States. CAP Pillar 1 Greening as an EU level policy was determined to have a positive impact on the volume of legumes produced in each Member State. Of course, the policy dependent nature of this effect also implies that any gains made would largely be lost if the policy instrument were to be removed. This dependency on public funding is not a sustainable approach and demonstrates the necessity to consider the effectiveness of the overall policy framework for increasing legume production - area, yield and market development - at both an EU and Member state level. The results also highlighted the need for more explicit policies for research and innovation in the sector (varietal improvement). They also raised the issue of the impact of contradictory policy interactions (at both a national and EU level), and a lack of understanding of the wider opportunities associated with legume production (i.e. the eco-systemic role legume crops play for humanity and the environment).

# Policy Brief 2

**Short title:** Identification of potential future policy needs and options

The CAP post 2020 has an increased focus on tackling climate change, protecting the environment and maintaining landscapes. A minimum 30% of Pillar 2 funding will be spent on climate and environment measures, while 40% of the CAP’s budget will contribute to climate action. Agricultural measures that promote a simultaneous reduction in nutrient leaching and carbon emissions, though already available, need to be improved in order to fit the new EU policy priority. Given that legumes play an important role in facing critical challenges like food security, mitigating climate change impacts from agriculture, and by delivering multiple services in line with sustainable criteria, legume focussed agricultural production can contribute to a number of the sustainability goals of the post 2020 CAP. To analyse the effects of different policy instruments and their contribution towards increasing the production of legumes in Europe, a framework has been developed, based on a series of workshops with input and information from experts. The first round provided an understanding of the national and EU level contexts within which legume related policies were designed and implemented, whilst also helping to develop the evidence base for the second round. The objective of the second round was analyse how best to improve existing policies and instruments and identify additional levers for their development; as associated with the Farm to Fork and Biodiversity Strategies outlined in the European Green deal. The results highlighted a high degree of heterogeneity among the countries involved which reflected the need to focus European level policy ambitions towards more coherent strategic plans at national level. All countries tended to identify the production of legumes as an opportunity for society, the environment, and the wider economy. However, some regions were advanced than others. This may reflect the implementation of private and public policy mechanisms focused on stimulating demand rather than supply whilst also reflecting the degree of interaction between all actors within the value chain. It will be important to develop a strategic approach to policy which reflects regional contexts and demonstrates the added value of integrated legume value chains. Future policies will need to go beyond agriculture, combining health, environmental and food policy in a consistent policy strategy.

# Policy Brief 3

**Short title:** Analysis of selected policy measures and alternative policy design options

One outcome of the LEGVALUE project is the recognition that legumes are affected by a complex set of policies acting often in an un-harmonized policy mix. To analyse most relevant policy instruments for the near future in the context of the project, a modelling exercise was carried outto support the evidence-based formulation of policies promoting legumes.

In a first step, a literature review was carried out that shows that policy modelling tools specifically related to legumes are not frequent in the literature. In most cases models address farm level decisions, simulating the impact of specific policy measures already in place (e.g., coupled payments). In some works, multiple indicators and multicriteria frameworks are used in order to account for environmental and ecological concerns linked to legumes cultivation.

LEGVALUE modelling activities concerned using simple land allocation models to understand farm level incentives and to design different policy options. They were further exploited in modelling future policy options concerning eco-schemes given that eco-schemes one of the most innovative parts of the CAP reform. Eco-schemes are annual payments for the uptake of voluntary measures related with environment, biodiversity, and climate change. In particular, a specific eco-scheme measure concerning the inclusion of legumes in rotation is considered.

In a first step, we modelled different farm types in Emilia Romagna (Italy) and simulated optimal crop mixes. In some cases, legumes are already cultivated in the farms, in others they were not. In a second step, a sensitivity analysis to the introduction of legume cultivation showed high heterogeneity among farms in the opportunity cost of dedicating a growing share of land to legumes. In a third step we searched for optimal design of eco-schemes, showing that simple eco-schemes measures may incur the well-known self-selection problem, with participation most likely among farmers that would probably cultivate legumes even without incentives. In these instances, the introduction of this measure will have very little impact. Differentiated payments may be needed to adapt incentives to different farm types. These need to be driven by a clear understanding of opportunity costs and environmental objectives, targeted by the instrument.

# Policy Brief 4

**Short title:** Good practices and recommendations on prospective policy measures

The rising demand in the food and feed sector offers opportunities for legume production in the EU, but the sector still faces many challenges. These include a lack of economic competitiveness with other crops in most of regions in Europe. The knowledge required to grow legumes and the awareness of their positive impact on the following crop and on soil health in general needs to be increased and shared within the farming community. Alongside this increase in knowledge transfer and exchange, demand for legumes needs to be stimulated.

The last series of LegValue WP4 national workshops were designed to identify good practices and prospective policy measures for the promotion of legume production in the EU by gathering expert views across countries on the role of policy in providing incentives for legume production at the national and EU level. Feedback was gathered regarding the CAP, EU Strategy for Protein Crops, Farm to Fork Strategy and EU Biodiversity Strategy.

The current picture is characterized by the absence of a dedicated EU level legume policy. On the other hand, legumes are affected by several policy measures, mostly dedicated to more general aims, such as crop diversification or promotion of organic farming.

The outcome of the third round of workshops identified that the policy focus should be in the direction of supporting the development and strengthening of legumes value chains rather than simply supporting production with supply side payments. Innovation will have a central role in this context especially due to the need to provide higher technical efficiency and competitiveness for legume crops. The results from the workshops highlighted a high degree of heterogeneity among the countries involved, with a different focus of the policies currently in place or with a different degree of interaction between all actors within the value chain. One strategic issue is to set up appropriate coordination instruments among the main policy tools, to allow an appropriate and consistent policy mix to boost legume cultivation and production in the EU. It will be important to develop a strategic approach to policy which reflects regional contexts and demonstrates the added value of integrated legume value chains. And most importantly, there needs to be a coordination of the available and new policy instruments. In addition, a number of specific instruments are identified, including promotion of public procurement, producers’ organization, market information for companies and targeted support to internalize the environmental benefits linked to legume cultivation.