



## NEW VALUE LANDSCAPES FOR PLANT PROTEIN PATHWAYS

D1.1. Story map, profiling regions for  
their current and potential future state  
re crop derived protein landscape

[valpropath.eu](http://valpropath.eu)



Co-funded by the  
European Union

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<b>Abstract:</b>	This deliverable outlines the process by which a story map that outlines the gaps in the plant-based protein value chain was developed. The story map is available in a digital format at <a href="https://arcg.is/15Wb5T0">https://arcg.is/15Wb5T0</a>

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#### Dissemination Level

PU	Public, fully open, e.g. web	x
SEN	Sensitive, limited under the conditions of the Grant Agreement	
Classified R-UE/EU-R	EU RESTRICTED under the Commission Decision No2015/444	
Classified C-UE/EU-C	EU CONFIDENTIAL under the Commission Decision No2015/444	
Classified S-UE/EU-S	EU SECRET under the Commission Decision No2015/444	

VALPRO Path			
Participant Number	Participant organisation name	Short name	Country
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2	AARHUS UNIVERSITET	AU	Denmark
3	UNIVERSITA DEGLI STUDI DI TORINO	UNITO	Italy
4	NATIONAL TECHNICAL UNIVERSITY OF ATHENS - NTUA	NTUA	Greece
5	FOODSCALE HUB GREECE ASSOCIATION FOR ENTREPREUNERSHIP AND INNOVATION ASTIKI MI KERDOSKOPIKI ETAIREIA	FSH	Greece
6	LEIBNIZ-ZENTRUM FUER AGRARLANDSCHAFTSFORSCHUNG (ZALF) e.V.	ZALF	Germany
7	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	CSIC	Spain
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9	AGRICOLUS S.R.L.	AGRICOLUS	Italy
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13	KPAD LTD	KPAD	United Kingdom
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16	MOLINO PEILA SPA	MP	Italy
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List of Abbreviations and Acronyms	
<b>VPP</b>	VALPRO Path
<b>IPS</b>	Innovative Production Systems

## Executive summary

This report outlines the process by which a digital deliverable called "D1.1 Story map, profiling regions for their current and potential future state re crop derived protein landscape" was produced within Task 1.1 of the VALPRO Path project. The story map is available to view online at <https://arcg.is/15Wb5T0>.

The process used to gather the information for the story map involved a literature review, expert interviews and stakeholder workshops. Multiple project team meetings were also held to review and sense-check the content developed. The work focused on identifying gaps and lock-ins for six targeted protein crops (lupins, peas, faba bean, chickpea, lentils, and soybean) at the European level, with nuances relevant to different pedoclimatic regions and countries highlighted where relevant. To ensure a systematic approach, a value chain mapping methodology ensured a systematic approach to the analysis, with stages (from inputs to sales and retail) considered along with institutions. The literature reviews were complemented by 10 expert interviews conducted during the summer of 2023, using a semi structured interview guide.

An excel file, containing key messages and sub-messages identified from the data collection was produced to translate the results from the value chain mapping into the story map. Resources including graphs, videos, and images that could help to communicate the messages were identified and developed where needed. This material formed the basis of an all-partner workshop in October 2023. The main aims of this workshop were to refine the messages/sub-messages and to identify additional aids to effective communication.

Following the workshop 14 main messages that could convey key gaps in the plant-based protein value chain in Europe in a concise and accessible manner were finalised. To disseminate these messages a web-based interactive audio-visual platform developed by ESRI (Redlands, CA, USA), was used to produce a story map. The StoryMap entitled "Feeling the pulse: Gaps in the EU Plant-Based Protein Value", presents the 14 messages along a range of visuals (including plots, maps, videos and other images), ordered by the six main value-chain stages identified within the project. As a web-based platform, the StoryMap is created entirely online, and functions as a living document, meaning it can be updated over the lifetime of the project if relevant.

A press release will be prepared in November 2023 to publicise the production of the story map, with social media and other activity undertaken to raise awareness about it. The report on which this story map is based will be available as a resource for the entire project consortium. It will also be made publicly available on the VALPRO Path website.

## 1. INTRODUCTION

From optimising on-farm processes to developing sustainable business models, VALPRO Path (VPP) aims to steer key players across the value chain toward sustainable plant-based protein production. VPP's main goal is to lead the way in exploring innovative approaches, validating them in practice, and showcasing methods to enhance plant-based protein production for both food and feed within the European Union. Addressing the protein production gap, VPP's Innovative Production Systems (IPs) strategically prioritise the cultivation of high-value protein crops such as peas, lupins, chickpeas, faba beans, soybeans, and lentils, pioneering advanced production and processing systems. VPP will tailor unique business models for each IPS. These innovative strategies will also drive growth in the plant protein sector, promoting economic development and societal well-being, in line with the European Green Deal. VPP drives five multi-stakeholder IPs, with active industry participation, delivering value for the industry, the market, and society. It also implements a multi-criteria mathematical modelling and optimisation approach, integrating Life Cycle Sustainability Assessment, sophisticated data acquisition protocols, and sustainable crop rotation planning models. By developing different circular value-chain business models, tailored for the IPs through a collaborative, multi-actor approach, VPP will co-create additional value for European legume crops.

In order to achieve its aims, Task 1.1 *Gap analysis of current European crop-derived protein landscape* was designed to deliver foundational knowledge and insights at the regional level, in order to shed light on the environment into which new potential value chains are set to emerge. By identifying key gaps and lock-ins in the legume value chain in the European Union, it will serve as essential input for crafting business cases, developing models, and guiding the overall direction of the VPP project. Working with all partners, and external stakeholders, it blends knowledge from multiple stakeholders and across disciplines to ensure a comprehensive knowledge base.

The deliverable associated with T1.1 is a story map, which is classified as "DEC Websites, patent, filings, videos, etc". It is available to view online at <https://arcg.is/15Wb5T0>. This report outlines the process by which the story map was developed. It outlines the framework used, and the steps involved in gathering the information with which to populate the story map, as well as the processes undertaken to sense-check the results and to ensure stakeholder involvement.

## 2. Methodology and Approaches

The process used to gather the information to populate the story map involved the following:

- Literature review (academic and grey) including scoping review
- Expert interviews
- Stakeholder workshops.

Multiple meetings of the T1.1 project team were also undertaken to review and sense-check the content developed.

The structure of the map itself followed the framework set out to collect the relevant information. It was designed using ArcGIS Storymaps – a product developed by ESRI. This product was selected to enable the the seamless integration of the text-based content of the messages with audio-visual

content (such as images, audio content, and videos) to help to illustrate the message. The remainder of this document outlines the activities carried out to produce the map.

## 2.1. Literature review

In this first stage, a literature review was undertaken by ZALF and Teagasc. The focus was on identifying gaps and lock-ins at the European level, with nuances relevant to different pedoclimatic regions, e.g., Atlantic Europe, Central Europe, and Southern Europe, and individual countries highlighted where relevant. To ensure a systematic approach, a value chain mapping methodology, following the principles of Heery et al. (2017<sup>1</sup>), was employed. See Figure 1 below. The value chain framework consists of five key stages (1) farm inputs, (2) cultivation & production, (3) processing & packaging, (4) branding, marketing, & distribution, and (5) sales and retail, along with (6) institutions. (Figure 1). The crops considered for this analysis focused on six targeted protein crops, i.e. lupins, peas, faba bean, chickpea, lentils, and soybean, to better understand the potential regional lock-ins and gaps of these specific crops. The work originally focused on Germany to test the approach but was later broadened to take a more EU-wide approach. Various sources were utilised, encompassing a total of 182 references. These sources included academic journals, publications from previous and ongoing EU-funded projects like LEGValue, TRUE, and Legumes Translated, as well as numerous studies directed at end-users and public engagement activities by EIT-Food, such as FUTURE PROTEIN. Grey literature, such as the EC report on plant proteins from 2018 and BMEL's Protein Crop Strategy in Germany, was also taken into account. Furthermore, insights from expert analyses, such as the EIP Agri Focus Group on Protein Crops and The Legumes Expert Forum of DAFA, alongside other relevant sources, contributed to the comprehensive research.

In addition to this literature review, a scoping review was undertaken to address the institutional context.

### 2.1.1. Scoping review

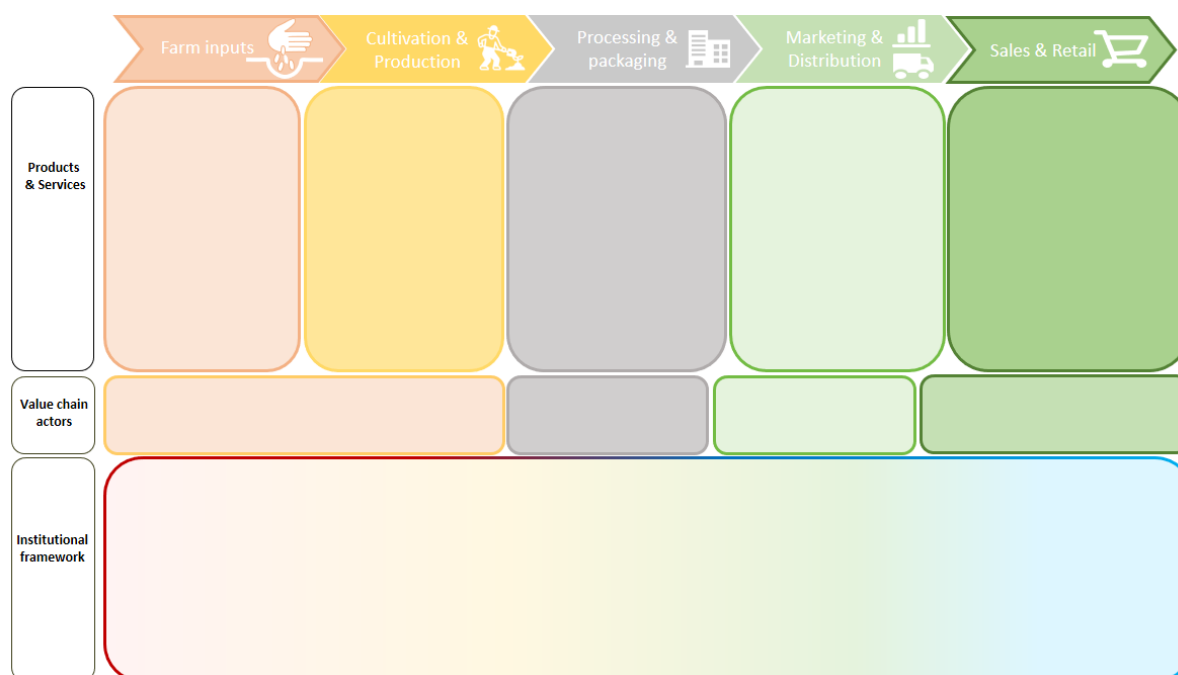
A scoping review, driven by the primary objective of elucidating stakeholders perspectives regarding European policies towards plant-based proteins was undertaken. It focused on analysing European policies that support a transition to sustainable diets, guided by the following research question: How do stakeholders perceive European policies designed to facilitate the promotion of alternative proteins? New Institutional Economics theory supported the analysis.

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<sup>1</sup> [Global-Value-Chain-Case-Study---Thesis---Declan-Heery---August-2015.pdf \(teagasc.ie\)](#)



**Figure 1: Value chain framework for gap analysis**



The literature reviews were complemented by expert interviews, with internal WP1 project meetings and stakeholder workshops used to sense-check the results.

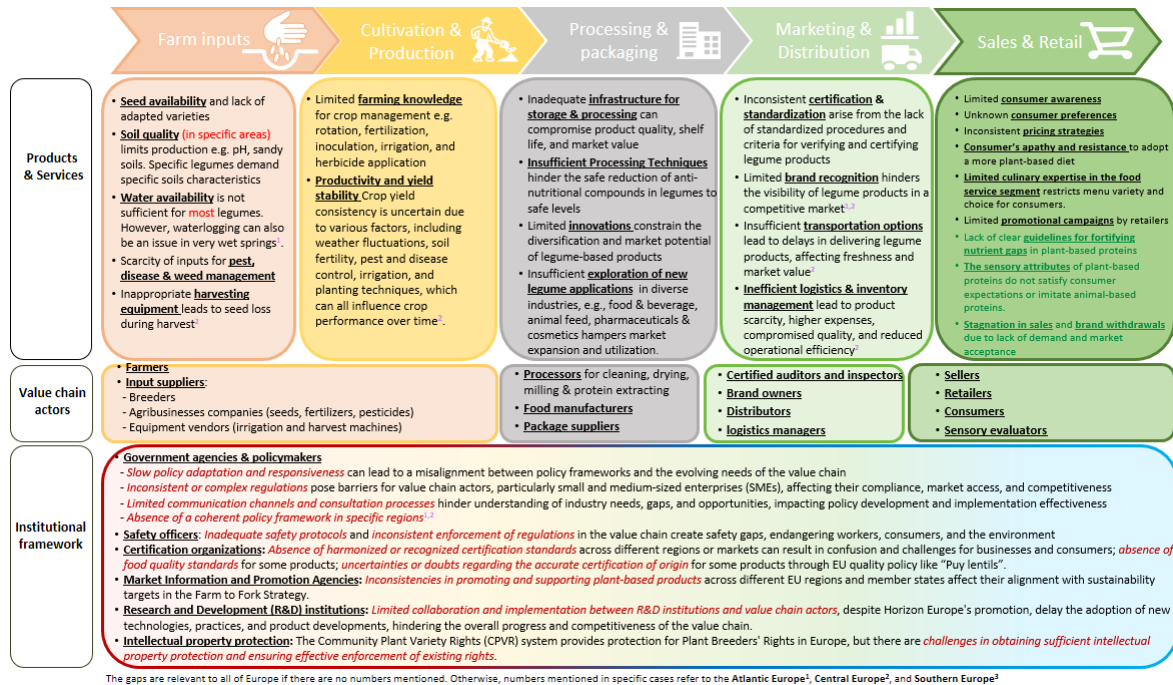
## 2.2. Semi structured interviews and workshop

Through regular project meetings involving T1.1 partners (Teagasc, ZALF, FSH, WU, Confagricoltura) the results of the literature review, presented in the framework of the value chain, were refined. Ten expert interviews were conducted to complement these results during June to August 2023. A semi-structured interview guide, along with guidance on selecting the interviewees and undertaking the interviews was developed by Teagasc (see Appendix 1). Interviews were conducted by each of the T1.1 partners as outlined below.

Interviewer	Interviewee
Zalf	Seed breeding expert
Zalf	Agronomist
Teagasc	Public organisation
Teagasc	CEO of a plant-based company
Teagasc	Civil society organisation
Confagricoltura	Executive manager of an online organization for alternative proteins
Confagricoltura	Farm financing bank
FSH	Alternative proteins academic expert
FSH	Food advisor and general manager at a global food and drink science and research organization
FSH	Novel food company agronomist, Research & Development department

To sense check the results of the value chain mapping exercise, the overall VPP project advisory group were also presented with the results. See Figure 2 for an image relating to the results

**Figure 2: Image of the results of the value chain mapping**



To translate the results from the value chain mapping into the story map, an excel template was created whereby the key messages and sub-messages were developed and refined, with resources that could illustrate the messages also identified. These resources included graphs, videos, images, etc. The draft messages were discussed at several meetings involving Teagasc and ZALF before being presented at an all-partner workshop in October 2023. The workshop contributions were collated and used to refine the prepared messages, and to identify additional resources. See Figure 3. The presentation used during the all-partner workshop is presented in Appendix 2. Images from the participants at the workshop are presented in Figure 4. Some of the workshop materials are presented in Figure 5.

Figure 3: Image of Excel File of Story Map main messages and workshop contributions

Story Map Content_v20 HE_AA - Excel				
File Home Insert Page Layout Formulas Data Review View Tell me what you want to do... AnaFlavia				
2. Cultivation & production				
A	B	C	D	E
Value chain stage	Key Msg	Sub-message	Workshop contribution	Resources
1	1.1 Seed availability	Lack of registered grain legume varieties and insufficient breeding programs. Europe faces a shortfall in available grain legume varieties adapted to diverse climates, hindering the potential of legumes in farming systems. This deficiency is exacerbated by limited investment in breeding programs, characterized by insufficient funding and research, which contributes to the scarcity of improved, high-yielding, and resilient legume varieties.	Research is not valued enough as it is considered technical information. // Uncertainty about end-point in market (farmers plant legumes but then they are sold only in feed market, they lose money). Different producers (harvesting, post-harvesting) in legumes than in grain (i.e. drying). Lack of strategy regarding communication channels between cooperatives and farmers could enhance technical knowledge, uncertainty, risk aversion etc.	Figure caption: Graphic of number of registered grain legume varieties in the EU in 2023 <a href="https://ec.europa.eu/food/plant-variety-portal/">https://ec.europa.eu/food/plant-variety-portal/</a>
2				
3				
4	1. Farm inputs	Challenges in seed supply related to the relatively low demand by farmers, lack of registered varieties, insufficient seed multiplication and distribution channels. These challenges are especially relevant for minor legume crops, such as lupins, chickpea and lentil and in regions with low legume production	Lack of profiling (climate resilience/ingredint traits)	
5	2.1 Limited farming knowledge	2.1.1 Current grain legume yields in Europe are below their biophysical potential. Lack of farm advisory support is a factor.	Grain legumes yield in Europe are now below their natural dynamic. High yields are not achieved because farmers are not specialized on grain legume cultivation and that's why more investments from the government need to be made in th field farmers education. Current protein seed harvest in Europe are below their yield potential. Farmers lack of knowledge (crop rotation etc) and this requires much more investment in training and better crop management etc) Public investment should be devoted to support farmers training on innovative cultivation practices to increase grain legume yields. Regulation has transformative power support crop rotation with incentives.	Teagasc's video about the importance of crop rotation with legumes (fixing N in the soil) and Hub's video about yield instability
6				
7				
8	2.2 Productivity & Yields stability	2.2.1 High yield variability of grain legumes compared to winter cereals challenge the EU plant-based protein supply chain. Yield variability is influenced by climate and biotic stress.	Grain legumes are more influenced by climate and biotic stress than winter cereals. This phenomenon make the cultivation of grain legumes challenging in the EU and therefore the PB protein supply chain. To bin balance o this issue, farmers and actors in the supply chain should work together.	Yield gap atlas
9				
Workshop contributions Final Vrsn Main msg No. of registered varieties Certified seeds & f ...				

Figure 4: Images from the VPP workshop, 18<sup>th</sup> October 2023



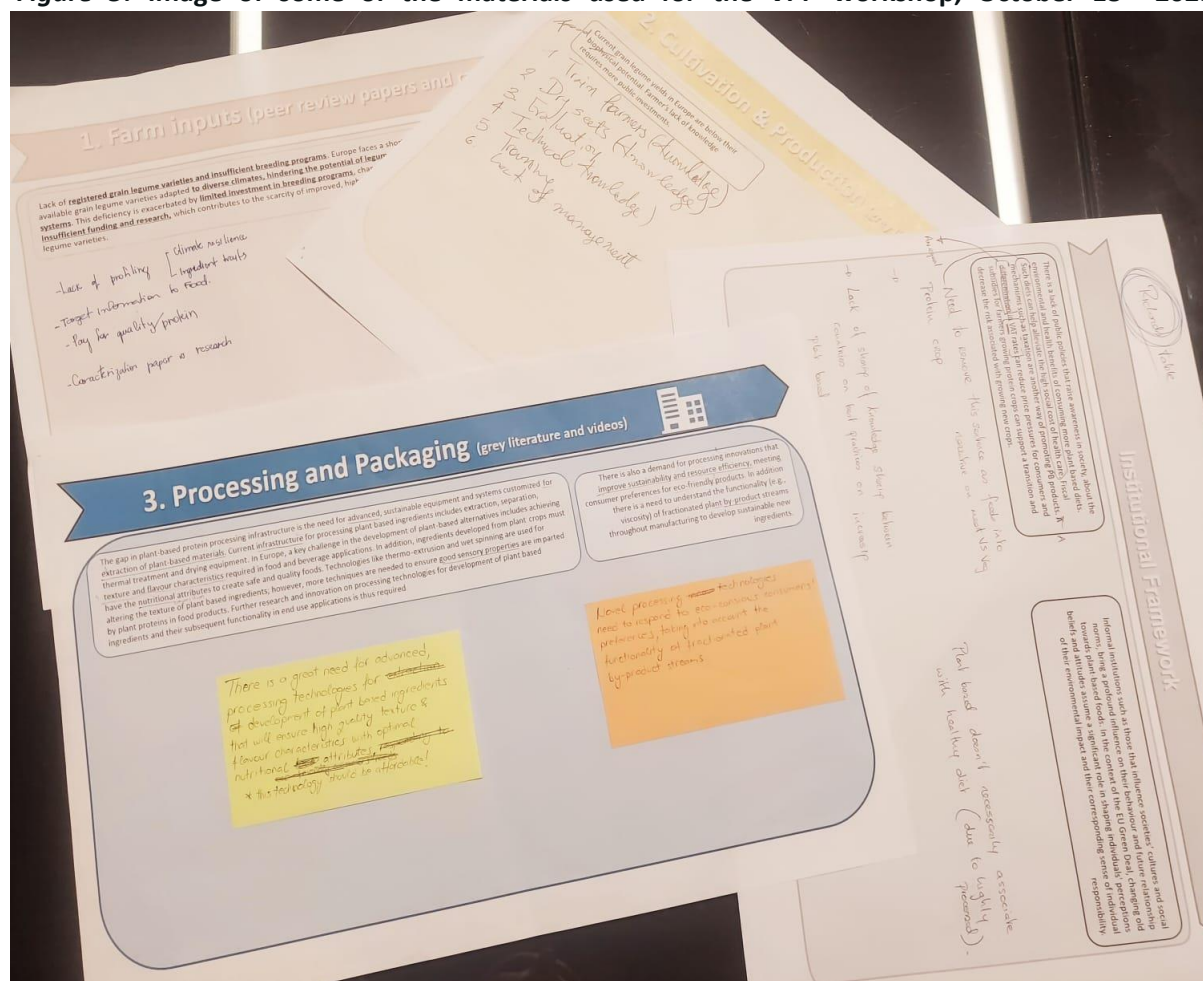
Workshop discussion facilitated by Dr. Richard Lynch, Teagasc

Workshop discussion  
facilitated by Dr. Heba  
Elsalahy, ZALF



Workshop discussion  
facilitated by Tamara  
Trninić, FSH

Figure 5: Image of some of the materials used for the VPP workshop, October 18<sup>th</sup> 2023



### 3. Story map creation

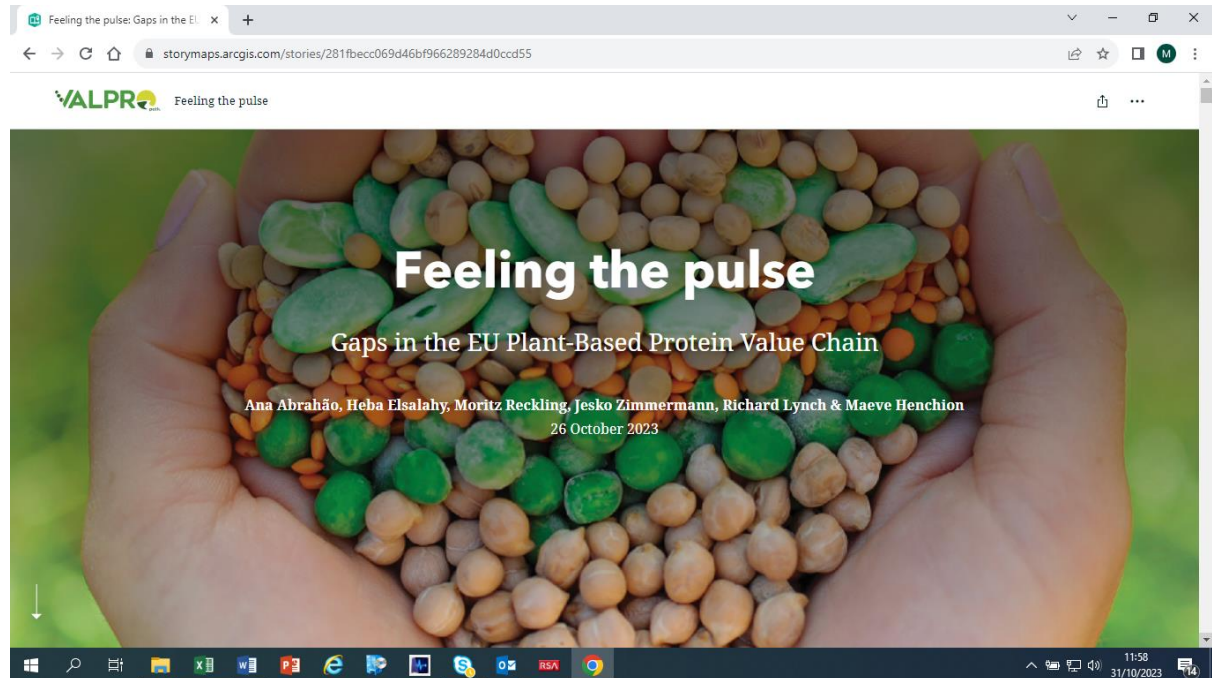
From the results of the workshop and other activities above, 14 main messages, articulating gaps and barriers in the current EU grain legume value chain were identified. The aim of the messages was to convey these gaps in a concise and accessible manner.

To disseminate these messages a so-called StoryMap was created. The StoryMap is a web-based interactive audio-visual platform developed by ESRI (Redlands, CA, USA), which allows for the seamless integration of text-based content (i.e. the messages) with audio-visual content (such as images, audio content, and videos). The software was developed in particular to interact with ArcGIS (ESRI, Redlands, CA, USA) content, but even without such content it provides a strong platform for public dissemination of information.

The StoryMap designed for T1.1 is titled “Feeling the pulse: Gaps in the EU Plant-Based Protein Value”, and presents the 14 messages along a range of visuals (including plots, maps, videos and other images), ordered by the five main value-chain stages identified within the project ( (1) Farm Inputs, (2) Cultivation & Production, (3) Processing & Packaging, (4) Marketing & Distribution, (5) Sales & Retail) along with (6) Institutions. As a web-based platform, the StoryMap is created entirely online, and functions as a living document. This means that content can be updated over the lifetime of the

project to account for new findings and analysis. Figure 6 presents an image of the front page of the map.

**Figure 6: Image of the front page of the VPP story map "Feeling the pulse: Gaps in the EU Plant-Based Protein Value"**



## 4. Next steps

The story map which relates to this deliverable is available at <https://arcg.is/15Wb5T0>. It is linked to the VALPRO Path public website: <https://valpropath.eu/>. A press release will be prepared in November 2023 to publicise the production of the story map, with social media and other activity undertaken to raise awareness about it.

The story map will be updated during the course of the project if additional resources are identified that can illustrate the key messages or if it is felt that the key messages are no longer relevant. A review will take place during the 2<sup>nd</sup> ValPro PATH General Meeting at the end of Year 2 and the final ValPro PATH meeting at the end of Year 4. The report on which this story map is based will be finalised in the coming months by ZALF so that it can act as a resource for the entire project consortium.

## 5. APPENDICES

### Appendix 1: VALPRO Path T1.1 –semi-structured interview guide for expert interviews

#### Guidelines

Teagasc 18th May 2023

**Introduction:** These interviews are undertaken within task 1 of WP1, i.e. “T1.1: Gap analysis of current European crop-derived protein landscape”. They complement desk research already undertaken within the [task](#), and stakeholder workshops that will also be held within the time period of the task (M1-14). According to the grant agreement, it involves *regional*<sup>2</sup> knowledge exchange and analysis, and will (i) identify the extent to which these gaps and lock-ins exist, (ii) their impact and (ii) potential solutions that have been identified/implemented. The outputs of the interviews will contribute to the report that will form the basis for other activities in ValProPath and to the story maps (D1.1 Story maps on gap analysis of protein in Europe and IPS regions) to be produced in M14. It is envisaged that the regional analysis, and real world experiences provided by the diverse experts, will provide depth and richness to the report. From an overall project perspective, the results will provide some of the information required to be transferred within WP1 and from WP1 to other WPs, specifically to T1.2 (defining the scope), WP2 (Selecting additional protein crops, defining the scope), and WP5 (Building business cases and identifying effective AKIS tools. The partners involved are Teagasc, UNITO, FSH, CF and WU, with ZALF as the lead partner for this task.

**Organisation:** Up to 3 interviews are to be conducted with experts and stakeholders across the VPP regions. These will be allocated to ConfAgri, FHS, Teagasc and Zalf according to geography and acquaintance with the interviewee. Other partners are however required to contribute to the organisation of the interviews, in particular to identifying potential interviewees. For practical and inclusive purposes, the interviews are likely to be held online. However where face-to-face is practical, this is encouraged. If the interview is done remotely, an online platform that can facilitate screen sharing and seeing each other is required (rather than phone). If the interview is done face-to-face, an A4 print out of the European value chain map (adapted from the German legume value chain map available at the link above, to be finalised by ZALF before the interviews) is required. All interviews need to be fully audio-recorded regardless of language in which they are conducted. While English is preferred from an analysis perspective, the local language is likely to be better suited to getting better quality information from the experts. Thus where two broadly similar experts are available, the one who is comfortable in English is preferable but expertise and knowledge is more important otherwise. (Additional interviews may be conducted in future to enable production of a peer reviewed publication.)

**Interviewees:** FHS has created a google [document](#) to provide a list of potential experts, with all partners required to identify suitable interviewees. FHS will select a list of suitable interviewees (9+) to ensure that the overall selection includes representation across regions and actor types <sup>3</sup>in particular. This will be agreed by Teagasc, ZALF and FSH before interviews are started to ensure a diverse but comprehensive coverage overall. A draft introductory email is available in Appendix 4. It can be modified as required.

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<sup>2</sup> Author’s emphasis

<sup>3</sup> Reflecting the quadruple helix of government/policy, academia, industry and civil society.

**Analysis:** The results will feed into the gap analysis at regional level, identifying areas of difference in terms of gaps and lock-ins in particular and also identifying opportunities for learning and sharing knowledge in terms of potential solutions to gaps and lock-ins that may be more prevalent or have a greater impact elsewhere. An excel file will be created by Teagasc to help with the analysis for the purposes of the report, with more detailed qualitative analysis required in future to produce a peer reviewed publication. Appendix 2 provides an illustration of the type of output that the interviews will contribute to.

**Documents to be shared with participants prior to interview:**

6. ValProPath information sheet
7. Participant consent form (draft available in Appendix 3). This should be completed and returned before the interview if possible or at the start of the interview if not. The partner who conducts the interview partner should keep these on file locally.

**After the interview:** The day after the interview, an email should be sent to the interviewee thanking them for their time, informing them about when and where the associated deliverables/other outputs will be available, and inviting them to follow ValProPath on social media, to register for the newsletter etc.



## Semi-structured interview guide

### Introductory text

Many thanks for agreeing to meet me to discuss the plant based proteins in Europe. As I explained, this interview is being undertaken within the EU funded ValPro Path project. VPP was funded to co-create, validate and demonstrate new value landscapes that promote the sustainable, circular and transparent production of plant –proteins for food and feed in the EU. One of the foundations of this work is a gap analysis of the current European crop-derived protein landscape. We've already done a lot of desk-based research and we now want to talk to experts, such as yourself, from across Europe to see to what extent you agree with what we've found, from a regional perspective. Just to clarify we are not interested in cereals, our focus is on high protein crops including faba, pea, lupin, chickpea, lentil and soybean.

We would like to record this interview so that we can further analyse the information provided in future. Is this ok with you? [refer to consent form and ensure that it is completed and returned]

So let's get started. I would like to ask that you make a distinction between food and feed in your responses if relevant.

8. Could you please describe your role in [ORGANISATION] in relation to plant-based proteins? (Present yourself in short, your work and participation in the sector, including whether you are more focused on food or feed, the stage of the chain you are involved with, your priorities, etc. if relevant)
9. We've produced this general value chain map for protein crops in Europe based on desk research, can you tell me what you think about it?

Prompts:

Does it fit with your experience in [REGION/COUNTRY]? Is there anything missing? Is there anything that is inaccurate from your regional/country perspective?

Which of these aspects has the most impact in your region? Can you tell me a bit more about that? Why is it? Who has been trying to address this? What have they been doing? Did they work? Why/not? Who else should be involved? What additional things do you think policy makers or the private sector could do to address that challenge? Is there any distinction between your comments for protein for feed as opposed to food purposes?

Which aspects are not relevant in your region? Why do you think that is? How can these impacts be addressed in other countries? Is there any distinction between your comments for protein for feed as opposed to food purposes?

Which of these aspects has the most impact on your **organisation**? Can you tell me a bit more about that? Why is it? What solutions have been tried? Did they work? Why/not?

Which of the following **crops** are grown in your region: faba, pea, lupin, chickpea, lentil and soybean? Does this general value chain make sense across each of these crops as grown in your region currently? Where are the key differences? Are there other crops that should be

considered to produce high-protein crops in your region? Is there any distinction between your comments for protein for feed as opposed to food purposes?

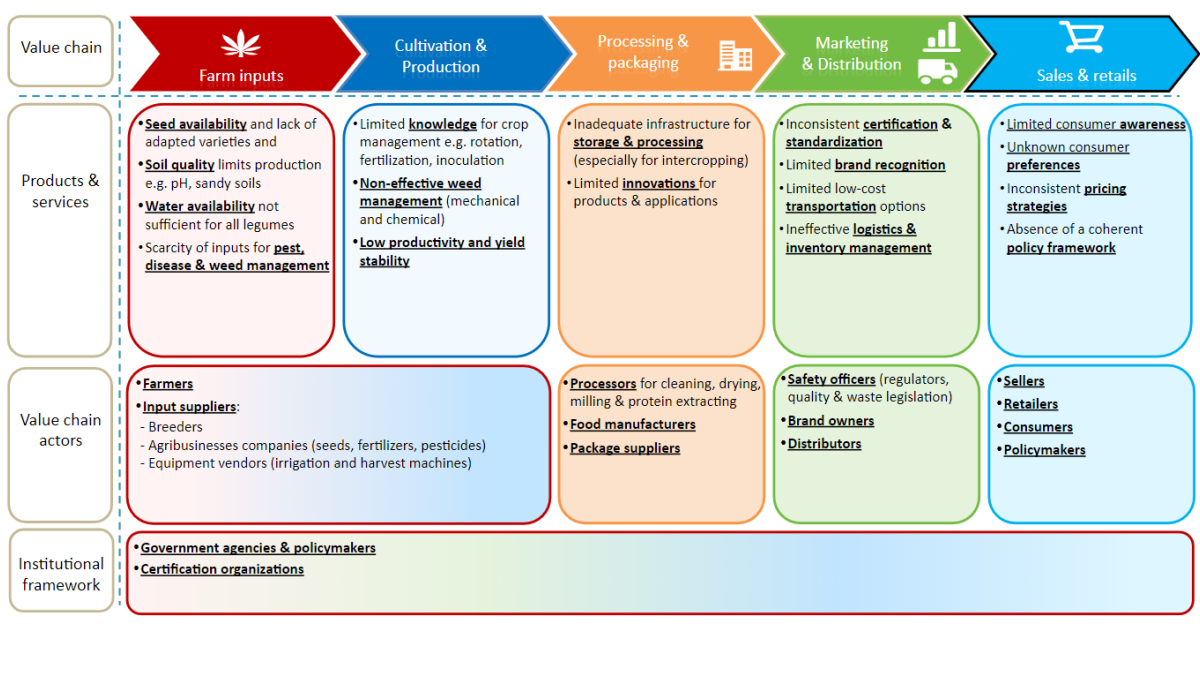
Where do you see **investment opportunities** in this value chain as applied across the list of crops, in your region? What are the major challenges hindering investment in these value chains in your region/country? How can farmers, processors, retailers and others be supported to develop new/higher value value chains based on plant-based proteins? What is the best way to support start-ups and scale-ups in developing these value chains (prompt re policy, research, other actors in the chain)?

10. How do you see the **future development** of plant-based proteins in [REGION/COUNTRY], say by 2030? How do you see this impacting the different aspects of the value chain? Is there any distinction between your comments for protein for feed as opposed to food purposes?
11. How do you see the development of other **alternative proteins** impacting plant-based proteins?

**Close:**

Many thanks for your time. It is really important that we hear about the reality on the ground in [REGION/COUNTRY]. We will be producing a very long report based on the desk research and these interviews. This is not for public consumption. However we will also be producing more “digestible” versions of the report in what we call story maps. We will let you know when they are produced. Please do keep in touch with the project. We have a website [www.valpropath.eu](http://www.valpropath.eu). You can sign up there to get alerts to events and activities. You can follow us on social media.

Appendix 1: Legume Value Chain in Germany (V.01- NOT FINAL)

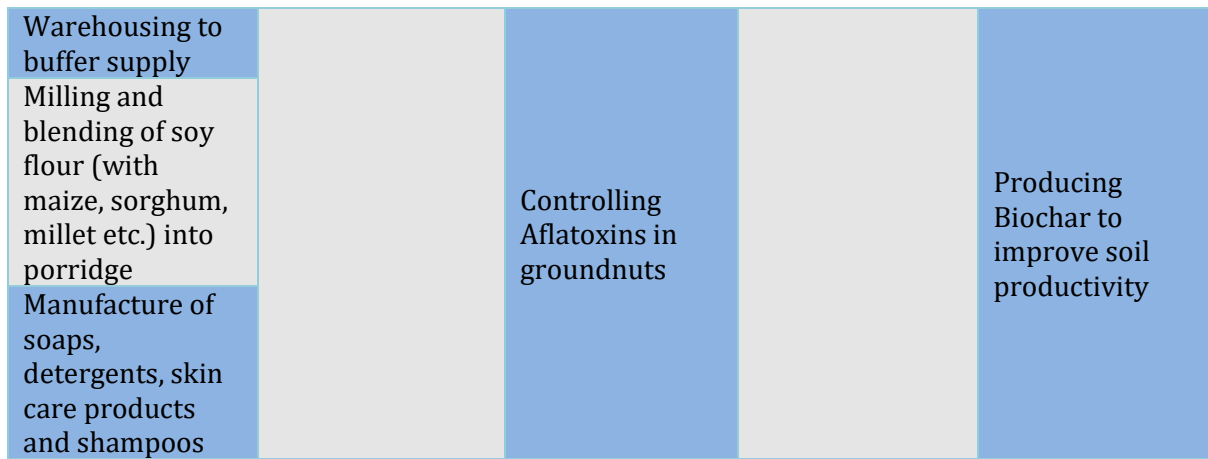


**Appendix 2: Illustration of type of output that is anticipated**

## Business Opportunities Identified by Value Chain

Edible Oil Value Chain	Wheat Grain Value Chain	Leguminous Plants Value Chain	Tubers Value Chain	Fertilizer Value Chain
Production and distribution of quality seed throughout growers	Multiplication and supply of seed	Production and marketing bean certified seed	Production and marketing of quality seed	Fertilizer manufacturing
Commercial production of edible oil crops throughout growers	Commercial production of wheat	Cleaning and storage: Aggregation of quality beans for commercial markets	Making potato crisps	Fertilizer blending and repackaging
Irrigation software and hardware	Establishing Bakeries	Common bean processing	Making potato frozen chips / chilled chips	Organic/ natural liquid fertilizers
Dehulling of Sesame Seeds	Putting up an Animal Feed Plant	Niche/ specialised beans (e.g., pre-cooked beans)	High Quality Cassava Flour (HQCF)	Warehouse construction & storage
Livestock feeds (using the cake)	Export and import of wheat flour	Export marketing of common beans	Cassava Starch	Fertilizer Importation and distribution
Processing of oil from the seeds of the oil crops	Processing wheat flour	Production and marketing groundnut certified seed	Brewing cassava beer	Fertilizer making raw material production
Import and export business of seeds and oil	Production of breakfast cereals, (Weetabix, crackers, scones and waffles)	Extraction of Oil from Groundnuts	Use of cassava in the pharmaceutical industry	Fertilizer Analytical laboratories
Paste of sesame and groundnut	Production of pizza, pasta, pastries and pudding	Groundnut Paste	Manufacture of Bioethanol	Making Bio fertilizers e.g. Rhizobia
Manufacture of biofuel	Valorization of wheat straws to get biofuel	Roasted groundnuts (Confectionery)		Buying and selling fertilizers
Invest in snacks, bread, cookies, pastries, tofu and soy milk, ice cream, lipstick, fats and margarine	Use of wheat straws to manufacture packaging material	Groundnut Flour or sauce		Develop organic and mineral fertilizers

D1.1. Story map, profiling regions for their current and potential future state re crop derived protein landscape



Source: East African Investment Opportunities in Selected Agricultural Value Chains, 2023

Appendix 3:

Informed Consent for interview/workshop participation

**VALPRO Path (new VALue landscapes for plant PROtein Pathways)** is an EU funded project aiming at advancing plant protein crop systems and value chains across Europe that will exploit beyond state-of-the-art innovations in plant protein crop production. For complete information on the project please read the **VALPRO Path Information Sheet**.

I, \_\_\_\_\_ (name and surname), acknowledge that:

- ✓ I have read the notes written above and the ValProPath Information Sheet, and understand what the project is about. I have been given the opportunity to ask questions and have had them answered to my satisfaction.
- ✓ My personal details will be processed and handled in accordance with European legislation including the General Data Protection Regulation (EU) 2016/679.
- ✓ I am volunteering to participate as an interviewee for a task/a stakeholder in a workshop relating to the EU-Horizon Europe Project ValProPath
- ✓ The interview/workshop will be recorded with the recording only accessed by members of the ValPro Path consortium.
- ✓ I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason without consequences.
- ✓ I have been given the information about the expected duration of the storage of the data.

I also give my consent for (please select):

*(Please, tick the boxes below to confirm that you give us your consent for the respective subject. Any boxes left unticked mean that **you do not consent to the relevant subject.**)*

- I understand that digital images (e.g. photographs/screen captures) may be taken during the workshop. I give my consent
  - for any images including me to be used for ValPro Path reporting purposes
  - for any images including me to be used for ValPro Path communication and dissemination purposes
- Adding in the final publication (the analysis will be anonymised):
  - Both my name and organisation name;
  - Only the organisation name;
  - None of the above.

I hereby give my consent to the processing of my personal data needed for:

- Receiving newsletters and messages regarding VALPRO Path activities

\_\_\_\_\_

Name of participant

\_\_\_\_\_

Date

\_\_\_\_\_

Signature

#### **Appendix 4: Draft email to invite participants for interview/workshop**

**Subject:** Invitation for interview/workshop participation

Dear [INTERVIEWEE FIRST NAME],

I'm contacting you on behalf of European [VALPRO Path project](#) (co-funded by Horizon Europe programme). VALPRO Path aims to advance plant protein crop systems and value chains across Europe that will exploit beyond state-of-the-art innovations in plant protein crop production and processing. More information about the project can be found on its website and the attached Information Sheet.

We are currently conducting expert interviews as part of a research study to increase our understanding of the gaps in the current European crop-derived protein landscape. As a [INTERVIEWEE JOB TITLE], you are in an ideal position to give us valuable first-hand information from your own perspective.

The semi-structured interview takes around 30 minutes and the questions will be sent to you in advance. We are simply trying to capture your thoughts and perspectives as an expert in the field.

Besides conducting interviews, we are planning to engage experts with scientific, research, business, civil society and/or policy background, to join our consortium workshop that will take place after the individual interviews in order to jointly do an exercise of prioritization of identified gaps. You are very welcome to participate in that exercise also

There is no compensation for supporting and participating in these research activities. However, your participation will be a valuable addition to our research and findings could lead to greater understanding of crop-derived protein landscape. This will help us to further specify the course of project's demonstration-related activities and will also be fed into policy makers at EU level. If you are willing to participate in the interview and the following workshop, please mark your availability in the doodle and send us back the signed consent form which is attached to this email.

If you have any questions, please do not hesitate to ask.

Thank you

(interviewer)

## Appendix 2: Presentation used during the VPP partners workshop 18<sup>th</sup> October 2023



**Programme of today:**

The Story Map Presentation and a Workshop

- Refining messages
- Identifying resources to illustrate message



**Deliverable 1.1 Teagasc**

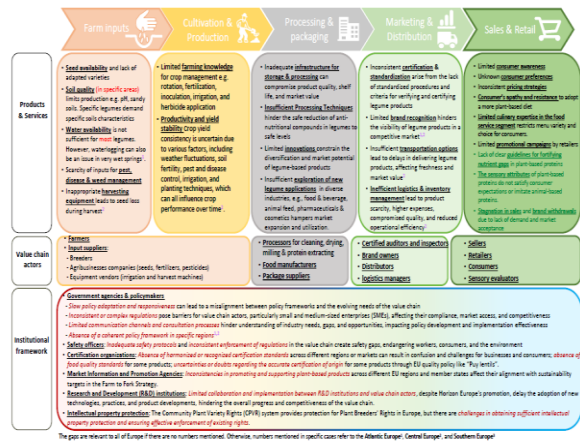
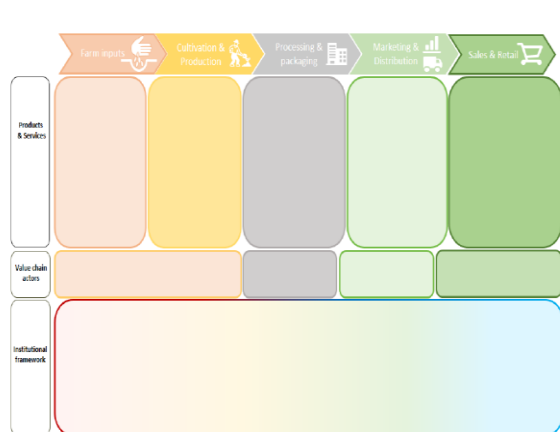
Dr. Maève Henchion  
Dr. Ana Abrahao

**SM GOALS**

**MAIN:** provide important foundational understanding and insights, at regional level, of the context into which new potential values chains will be developed, providing inputs for business case development, model development and steering the overall scope of VALPRO Path.

**Approach**

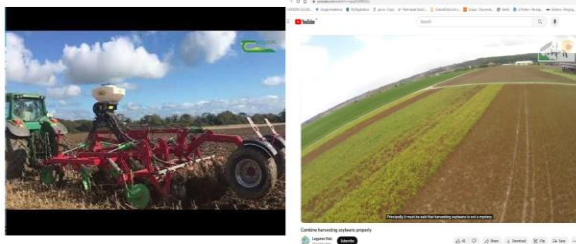
- 1<sup>st</sup> Desk study
  - o Literature review (academic and grey);
  - o Elaborate and validate the results
- 2<sup>nd</sup> Expert interviews and stakeholder workshop (SAG);
- 3<sup>rd</sup> VPP Internal meetings
  - Drafting and refining of the main messages for the Story Map and identifying resources/assets to illustrate the messages (Teagasc and Zalf);
- 4<sup>th</sup> Workshop at VPP AGM
  - Finalise messages and gather additional assets and resources to illustrate those final







### Video from Teagasc and LegHub



### Workshop details: What we are doing here?

**The aim of the workshop:**  
communication exercise.

Only that?  
NO!!!  
Certainly not!

### OUR OBJECTIVES: Your contributions on how to tell the story 45' work

- Forming 5 groups of approx. 8/group (following IPS allocation)
- Each group will have **ONE stage** of the Value Chain to work on + Institutional Framework;
- We will have 15 minutes to discuss and reword each one of different messages written on your stage of the value chain that you have over your table;
- PLUS 10 minutes only to focus and discuss **Institution Framework** main messages;

### Facilitators

Value Chain Stage	IPS	Facilitator
Farm Input	2	Richard
Cultivation & Production	3	Heba
Processing & Packaging	4	Mladen
Marketing & Distribution	5	Tamara
Sales & Retails	1	Ana

### The following tasks are our job today:

1. Refine the main messages (individually);
2. Agree a single key message through discussion;
3. Identify resources/assets to illustrate each message  
(images/graphs, audio-visual)?

#### 1. Farm inputs (peer review papers and raw data) 👉

Lack of registered grain legume varieties and insufficient breeding programs. Europe faces a shortfall in available grain legume varieties adapted to diverse climates, hindering the potential of legumes in farming systems. This deficiency is exacerbated by limited investment in breeding programs, characterized by insufficient breeding and research, which contributes to the scarcity of improved, high-yielding, and resilient legume varieties.

Challenges in seed supply related to the relatively low demand by farmers, lack of registered varieties, insufficient seed multiplication and distribution channels. These challenges are especially relevant for minor legume crops, such as lupine, chickpea and lentil and in regions with low legume production.

## D1.1. Story map, profiling regions for their current and potential future state re crop derived protein landscape

### 2. Cultivation & Production (grey literature and videos)



Current grain legume yields in Europe are below their biophysical potential. Farmer's lack of knowledge requires more public investments.

High yield variability of grain legumes compared to winter cereals challenge the EU plant-based protein supply chain. Yield variability is influenced by climate and biotic stress. Collaborative efforts are essential among farmers, and actors in the supply chain to work on a stable sourcing.

### 3. Processing and Packaging (grey literature and videos)



Technologies exist for altering the texture of plant-based ingredients (e.g. thermo-extrusion and wet spinning), however, more techniques are needed to ensure good sensory properties and functionality (e.g. viscosity) in end-use applications, along with improved sustainability and resource efficiency.

Advanced, sustainable equipment and systems customized for the extraction of plant-based materials is a gap. Current infrastructure required for processing of plant-based ingredients includes extraction, separation, thermal treatment and drying equipment.

### 4. Marketing & Distribution



Despite certifications from organizations like the European Vegetarian Union and the Vegan Society, significant gaps exist in certifying newer or lesser-known plant-based products due to variability in Products Composition.

Numerous European Plant-based companies exist, yet they face limited brand recognition as a result of high cost advertising campaigns. Research indicates that the growth potential of the market hinges on the participation of prominent corporations, capable of reshaping consumer perceptions. Logistics & Inventory Management is another issue: fragmentation in the processing of plant-based ingredients/foods results in delays in the supply chain and higher costs.

### 5. Sales & Retail (mainly peer review papers and photos illustrating main msg)



There's a nutritional and culinary knowledge gap among consumers regarding plant-based proteins, leading to confusion and concern. Consumer preferences are still developing, but many show apathy and resistance to embracing a more plant-based diet, often citing concerns about the sensory attributes of plant-based products not being as tasty as traditional offerings.

Retailer promotions are inconsistent and lack the customization that is often required to reflect the unique characteristics of plant-based proteins. The food service sector has limited culinary knowledge about legumes, especially relating to their gut-friendly preparation.

### Institutional Framework

There is a lack of public policies that raise awareness in society about the environmental and health benefits of consuming more plant-based diets. Such diets can help alleviate the high social cost of health care. Fiscal mechanisms such as taxation are another way of promoting PB products. A differentiation in VAT rates can reduce price pressures for consumers and subsidies for farmers growing protein crops can support a transition and decrease the risk associated with growing new crops.

Informal institutions such as those that influence societies' cultures and social norms, bring a profound influence on their behaviour and future relationship towards plant-based foods. In the context of the EU Green Deal, changing old beliefs and attitudes assume a significant role in shaping individuals' perceptions of their environmental impact and their corresponding sense of individual responsibility.

Let's get that work done!

Final countdown...

