



Focus Group 'Production of protein crops under climate change'

Sevilla, Spain
27-28 May 2025

Mini Paper 1: Knowledge exchange and creation

Kaupo REEDE

Andrzej Słomczewski, Anu Ellä, Kaupo Reede, Nathalie Chavrier

SCOPE

- Current document explores the critical role of knowledge exchange and skill development in advancing protein crop production within the European Union.
- This paper emphasizes the importance of creating a systematic framework for knowledge sharing, fostering collaboration among stakeholders, and addressing challenges in protein crop production.
- The content delves into various aspects of knowledge creation and transfer, including best practices, communication strategies, and industrial research and development.
- It highlights the necessity of integrating scientific research, farmer experiences, and industry insights to develop effective approaches for cultivating protein crops.
- This document aims to provide actionable recommendations for policymakers, researchers, farmers, and industry players. It outlines strategies for improving knowledge dissemination, supporting innovative farming practices, and fostering a resilient agricultural sector capable of addressing the demands of a changing climate.

KNOWLEDGE CREATION AND SHARING SYSTEM

Strategic Approach

- Specific strategic goals must drive protein crop development
- End product considerations must guide breeding selection
- Growing crops solely based on climate suitability is insufficient
- Global competitiveness requires targeted development

Integration of Knowledge

- Research and entrepreneurs must collaborate
- Tests conducted on entrepreneurs' land ensure practical application
- Economic feasibility must underpin development activities
- Farmers need market overviews to adopt new crops

Knowledge Package for Farmers

- Crops and suitable varieties
- Growing technologies and conditions
- Suitable soils mapping
- Analysis techniques
- Risk assessment (weather and pests)
- End use applications (including by-products)
- Economic profitability data
- Market trend analysis

BEST PRACTICES: COMMUNICATION and AWARENESS

(Nathalie)

Comprehensive approach of communication and awareness-raising strategy

- Tangible benefits must be shared across entire value chain
- Each stakeholder can become an ambassador of the protein crops benefits
- Knowledge and results can be exchanged through the quadruple helix approach: academia, farmers, industry, consumers, government
- Communication and awareness actions have to be coordinated over the time and stakeholders capability
- Actions tailored to the specificity of the region and can be transnational too taking into account the crops shift northward (due to climate change), knowledge shift from south to north is required too.

Communication actions

- Workshops and field demonstrations to transfer research results
- Farmer-to-farmer exchanges to provide practical insights
- Partnerships between academia, industry and farmers
- Innovation pilots and demonstration projects
- Consumer education campaigns supported by scientific evidence

Case Study: Spanish Legume Network (RELEG)

- Created 2023 by Spanish National Research Council (CSIC)
- 15 research groups and agricultural organizations
- Four specialized working groups addressing key challenges
- Organizes webinars, dissemination videos, and technical events with academia, companies and farmers

BEST PRACTICES: DISCUSSION GROUPS

(Anu)

Effective Knowledge Exchange

- Popular in Ireland, UK, Norway, Iceland, and Finland
- Two main styles: educational and best practices groups
- Most effective when farmers openly share successes and failures
- Facilitator role essential to encourage knowledge sharing

Discussion Group Structure

- Regular meetings primarily on farms
- Focused themes for each meeting
- Comparison data essential for meaningful analysis
- Winter meetings for analysis, planning and theoretical learning

Example Process (2-year cycle)

- Meeting 1: Targets and getting acquainted
- Meetings 2-9: Farm visits with specific themes
- Meeting 10: Summary of lessons learned and setting new targets
- Participants develop capacity to make better decisions for their farms

BEST PRACTICES: SHARING FIELD EXPERIENCES (Andrzej)

Climate Change Adaptation

- Traditional crops becoming unreliable due to weather anomalies
- Growing interest in simplified soil cultivation and regenerative agriculture
- Protein crops can diversify income sources and increase climate resilience
- Farmers need knowledge to mitigate risks associated with starting/scaling up new production directions

Case Study: Sunflower Cultivation in Poland

- Rapid area increase followed by 17% and 24% declines
- Knowledge gaps led to profitability issues
- Contradictory recommendations from seed distributors and breeders
- Limited state advisory services (1-2 advisers per province)
- Farmer-led field experiments to assess variety suitability

Areas Needing Attention

- Strengthening independent, objective public advisory services
- Supporting farm-to-farm knowledge exchange
- Creating region-specific variety lists and agronomic recommendations
- Transferring research knowledge to farmers
- Continuous dissemination of the results of completed projects on demofarms
- Continuous monitoring of farmers' needs

BEST PRACTICES: INDUSTRIAL R&D (Kaupo)

Estonian Innovation Cluster for Plant Proteins

- Connected farmers, food industries and research institutions
- Focus on developing novel plant-based products for human consumption

Four-Stage Development Process

1. Field trials with cannabis, oat, fava bean and green pea
2. Protein isolation, purification and concentration research
3. Technology development using extrusion for product creation
4. Fermentation technologies for plant-based alternatives

Market Success

- Developed products now available commercially
- Examples include vegetable protein cutlets and plant-based desserts
- Demonstrates importance of complete value chain involvement
- Gives farmers confidence to grow new crops with clear market outlets

PRACTICAL SUGGESTIONS FOR ACTION

Support for Pioneer Farmers

- Reliable, comprehensive support tailored to farm specificity
- Field visits and on-site advice from planning to harvest
- Focus resources on farmers willing to be regional pioneers
- Pioneer farms become regional training centers

Knowledge Systematization

- Create regional lists of recommended species and varieties
- Develop detailed agronomic recommendations including:
 - General crop information and benefits
 - Crop rotation recommendations
 - Soil and nutritional requirements
 - Cultivation techniques and harvest guidance
 - Risk management and economic analysis

Knowledge Exchange Networks

- Create networks of demonstration farms
- Establish discussion groups of farmers, scientists, and advisors
- Support international knowledge transfer
- Use diverse information channels:
 - Field days and training events
 - Sector publications
 - Educational videos and podcasts
 - Professional online forums

RESEARCH AND DEVELOPMENT PRIORITIES

Strategic R&D Investment

- Increase European investment in protein crop R&D
- Emphasize applied research and industrial scaling
- Consider end products during breeding programs
- Involve entire value chain in development projects

Innovation Clusters

- Bring together scientists, farmers, processors and retailers
- Focus on practical applications and market needs
- Support long-term programs over short-term projects
- Ensure economic feasibility throughout the value chain

CONCLUSION

Key Takeaways

- Systematic knowledge exchange is essential for protein crop advancement
- Collaboration across stakeholders drives successful adaptation
- Practical, farm-level support creates confident producers
- Transnational cooperation leverages expertise from established regions

Future Direction

- Multidimensional approach needed for protein crop expansion
- Strategic planning and stakeholder collaboration essential
- Knowledge sharing mechanisms must be formalized
- Robust policy support required for long-term success

FINAL MESSAGE

Building a resilient agricultural sector capable of meeting future demands sustainably requires coordinated knowledge exchange, skill development, and collaborative innovation across the entire European protein crop value chain.

EU CAP Network Focus Group 'Production of protein crops under climate change'

2nd meeting | 27-28 May 2025 | Sevilla, Spain

All information on the Focus Group is available on the webpage:

<https://eu-cap-network.ec.europa.eu/events/focus-group-production-protein-crops-under-climate-change-2nd-meeting>

