

How to overcome barriers to crop diversification?

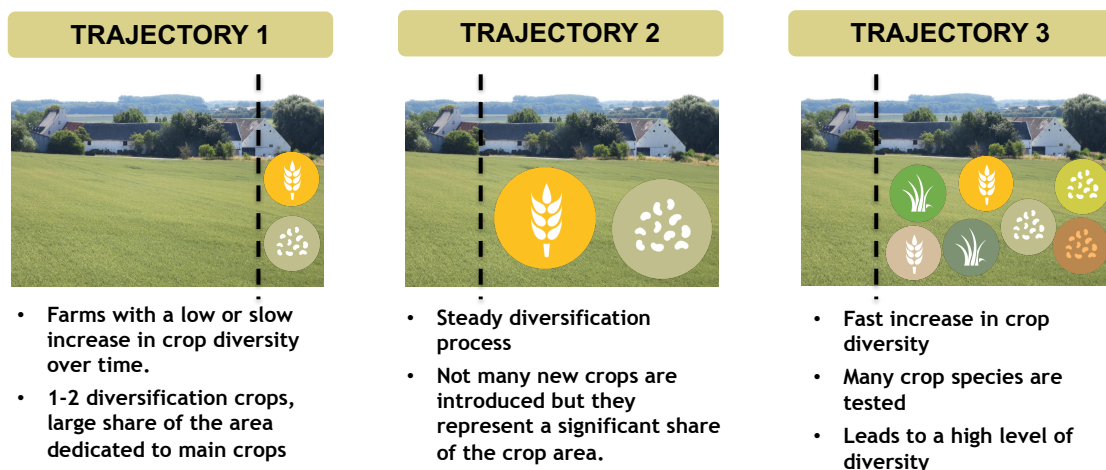
Key messages & recommendations

The development of diversification practices in the European farming systems is dependent on a better understanding of (1) the trajectories at the farm level, (2) the diversity of barriers impeding the transition to diversification, and (3) the political levers for favoring transition pathways as well as the potential roles of value chain and other actors of the sector.

1. Understanding diversification strategies at farmers' level

Farmers who diversify their crops follow three main types of crop diversification trajectories shaped by the motivations for the crop diversification process and the resources mobilized by farmers.

Crop diversification - which trajectories at the farm level?



- The first type of trajectories corresponds to farms with a low or slow increase in crop diversity over time. Farmers in this type are mainly driven by economic motivations which are not necessarily stable, and lack more stable motivations such as those around agronomic benefits of crop diversification.
- The second type of trajectories corresponds to farms with a progressive increase in crop diversity. Not many new crops are introduced but they represent a significant share of the crop area. These trajectories are stabilized by the agronomic motivations behind farmers' processes of change in practices, and by the support and resources provided by the downstream actors buying these crops.
- The third type of trajectories is the one that leads to the highest level of diversity, with more frequent changes and a higher number of crops tested by farmers. As well as agronomic motivations to diversify, this type of trajectory is driven by the farmers' willingness to look for market opportunities and even to develop new ones, on the one hand, and to develop the knowledge and expertise regarding the new crops on the other hand.

Better taking into account these different possible pathways toward crop diversity appears necessary in order to design appropriate solutions to overcome the obstacles to crop diversification in farms.

For more details, please refer to D5.3: Main drivers for farmers' choices related to crop diversification.

2. Multiple barriers from farm to fork

The slow development of diversification in farms and value chains is often attributed to several factors such as lack of incentives, economical or technical limitations.

In the systemic approach of DiverIMPACTS, a comprehensive survey of the lock-ins was implemented in the 25 case-studies. A total of 46 different barriers were identified from the farm level to the consumers level. These barriers are related to various dimensions : technical, economic, knowledge; and are spanning from micro level (the plant and the field) to the global market scale.

Presence of subsets of barriers is determined by different ecological contexts and type of value chains (e.g. short versus long value chains).

Agricultural production	<ul style="list-style-type: none"> Lack of technical knowledge and references Lack of economic knowledge and references Need of investment for adapted machinery Lack of technical knowledge and references about impacts on sustainability Profitability is low, problematic or uncertain Uncertainties, risks and variability of agronomic performances Lack of technical knowledge about the impact on farming system and design Lack of information because of problems with advisory context Current situation is still profitable on the short term Constraints in labor organization (period, volume), mental or physical load Barriers related to CAP*, environmental or sanitary regulations Lack of adapted plant varieties in the local context Need of innovation in machinery for field activities Low agronomic performances (yield, quality) Increased complexity for management and decision-making Cultural barriers, confrontation with farming practices of parent's generation Cognitive frame and ways of thinking need to be changed Seeds are hard or expensive to get Farmers' lack of awareness about issues linked to specialization Lack of available or adapted phytosanitary solutions
From harvest to retail	<ul style="list-style-type: none"> Volumes are too limited in a given area to be profitably or easily collected Equipment for screening, cleaning, drying or storing requires investment Equipment for processing requires investment Competition on the global market with crops produced cheaper elsewhere Equipment for screening requires investment Equipment for processing requires innovation Regulations issues around sanitary, quality and purity aspects Equipment for cleaning, drying or storing requires innovation Administrative, fiscal or accounting issues Equipment for screening requires innovation Traders are reluctant to support solutions which may reduce inputs that they sell Dealing with diversification products brings higher costs
Market	<ul style="list-style-type: none"> Need to raise consumer's awareness or bad visibility of diversification benefits Uncertain or unstable market No pre-existing or very limited market Doubts about willingness of consumers to pay more for diversification products
Coordination between value chain actors	<ul style="list-style-type: none"> No ensured and/or fair sharing of added value between actors No ensured or limited volumes to buy/sell products or establish secure contracts Duration of contracts not enough to secure farmers in taking risks and investing Limited or no cooperation between innovative farmers Individualistic mentality and lack of trust between farmers limit collective action Unbalanced power in bargaining between farmers and traders Finding suitable contracts to address issues related to variability in production Lack of communication between value chain actors No ensured quality of products to be bought, sold or to establish secure contracts No ensured reciprocal benefits in partnership (especially for land arrangements)

For more details, please refer to (Morel et al. 2020) (available online).

3. Strategies and recommendations for policy makers

› Monitor the development of crop diversification at regional, national and EU levels.

1. Better monitoring at the regional, national and EU level would highlight progress, challenges and opportunities and enable proper support policies and advisory strategies to be designed;
2. Crop diversification data is still scarce; no statistics are available at the EU level;
3. Specific indicators could be included in Eurostat or FADN datasets.

› Adapt the CAP Policy to support innovative agroecological practices.

1. Proper support for diversification would accelerate the uptake, thus increasing the environmental benefits and facilitating economies of scale in new value chains;
2. The CAP should be adapted to account for the specificities of crop diversification, e.g., updating the CAP information system to allow farmers to report more complex crop patterns;
3. Subsidy rules should be clarified for farmers willing to cooperate at the territorial level (e.g. land exchange, direct sale of crops between farmers).

› Reallocate public and private R&D resources towards minor and diversification crops.

1. Innovative knowledge, techniques and technologies need to be further developed in order to implement new practices and value chains; in particular:
2. Further R&D is needed on breeding and farming practices, as well as to assess the impact of the new practices and support technological and organisational innovations at the value chain level.

› Offer financial mechanisms to mitigate or share the innovation & investment costs and risks during the first years of innovation.

1. The implementation of new practices and value chains requires investment (time & funding);
2. The innovation and investment costs and risks are linked both to acquiring new knowledge or techniques, and to innovative equipment required for farming, post-harvest and processing operations;
3. Example of relevant financial mechanisms include subsidies, incentives and private funds.

For more details: see the Policy Brief *Recommendations for overcoming barriers to crop diversification towards sustainable agriculture*.

4. Key principles for value chains actors

› Support coordination and collaboration at the value chain level.

Support should be directed at the level of value chains and for actors' cooperation rather than towards actors individually. Actors to be included in such collaborative schemes include not only farmers individually, but also as a group/collective organization, as well as processing actors, key intermediaries, upstream actors and support services.

1. Coordination between stakeholders in new value chains needs to be strengthened by **novel types of contracts**. Setting up of such contracts could be made easier by public policies through both incentives and relevant regulations.
2. Policies should help balancing the effort between value chain actors, by setting **mechanisms for sharing the investment costs and risks of innovation**. Complementarily, fostering higher transparency at the sector level on investment costs, margins and benefits will help to ensure fairness, coordination and the best efficiency of financial support.
3. Support should be directed both towards **short & long value chains**. A special attention should be given to the eligibility to, and information about, grants for small-scale value chains.

› Support crop diversification value chains in their critical phases.

Supportive policies should be offered both for the **experimentation and innovation phases** (i.e. before value chains are already competitive) as well as for **upscaling** (i.e. when significant investment is required to enlarge the production and marketing of crop diversification products).

1. It is relevant to increase the attractiveness of new crops by integrating **premiums for ecosystem services** provided by diversification.
2. Creating the conditions for easier implementation will allow larger uptake of crop diversification and development of value chains. In this regard, not only **monetary incentives** but also should be further encouraged. Ensuring a stable and favorable **regulatory context** is also critical for new crops.

› Consider a strategic vision for crop diversification value chains.

1. In the perspective of achieving the **farm-to-fork strategy and protein shift transition**, quantitative targets for crop diversification and related products should be defined at the European level
2. When reallocating public and private resources towards diversification crops, we recommend to **target the products with the highest potential added value** in each region.
3. Increase the market share of crop diversification products by **promoting the advantages** of diversification crops and the consumption of related products.
4. New value chains based on crop diversification are an opportunity for setting up **new values** in the agri-food system, with a higher attention to ecosystem services.

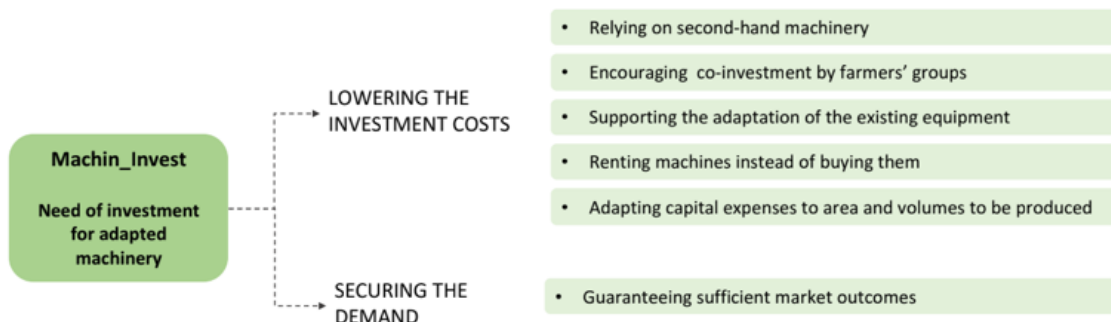
- The recommendations provided above address the systemic nature of barriers (lock-in phenomena).
- A complementary approach is to identify key operational solutions for each barrier in order to mobilize specific networks of actors. Some examples of operational solutions are given below. A comprehensive identification of strategies covering 200 operational solutions is available in the report *Addressing barriers to crop diversification: key elements of solutions identified across 25 case studies* (available online).

5. Examples of strategies and operational solutions, at the farm level

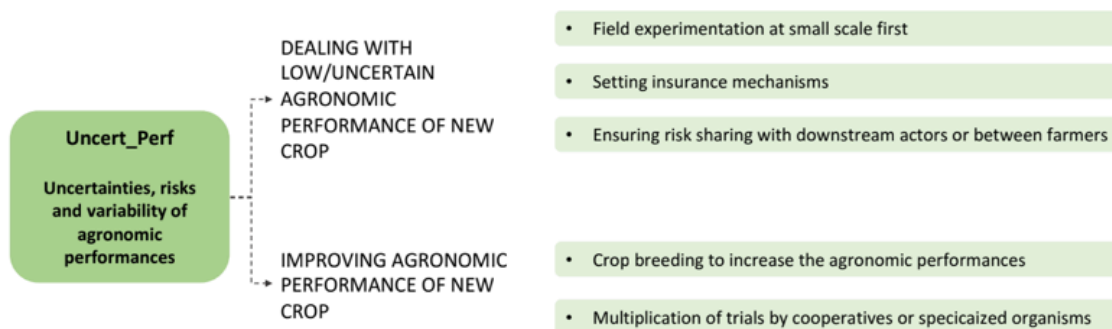
➤ Addressing the lack of technical knowledge



➤ Addressing the machinery-related barriers



➤ Addressing the technical performance challenges



For details, please refer to the report *Addressing barriers to crop diversification: key elements of solutions identified across 25 case studies*.

