

RESILIENCE – Strengthening Europe’s Pressured Food System

With targeted measures, decision-makers at EU and national level can build strong, sustainable and resilient food systems that withstand crises, strengthen competitiveness and secure a reliable food supply. Drawing on research from Mistra Food Futures, we present four key recommendations to support stakeholders and policymakers in implementing the EU’s Vision for Agriculture and Food.

The recommendations outline long-term pathways towards resilient and economically, environmentally and socially sustainable food systems, and show how targeted policy instruments and investments at national and EU level can turn the Vision into practice.

Scientific background for the recommendations

1. Adopt a systems perspective on the food value chain, linking consumption and production.

Decisions and policy instruments should be designed with the entire food system in mind, as food encompasses both production and consumption – each depends on the other.

Researchers within Mistra Food Futures have developed a framework for a sustainable food system (1), which is based on an overarching societal goal: to ensure access to sufficient quantities of healthy food for all. The framework highlights the importance of a systems perspective, encompassing healthy food for consumption, pro-

RECOMMENDATIONS

1. Adopt a systems perspective on the food value chain, linking consumption and production.

Policy decisions and instruments should be designed with the entire food system in mind, recognising that food encompasses both production and consumption – not one without the other.

2. Achieving health, environmental sustainability and competitiveness requires transformation of both production and consumption.

The transition to sustainable production must go hand in hand with a shift towards sustainable consumption. This is particularly important to avoid a situation in which potentially higher production costs crowd out demand for more sustainable alternatives.

3. Promote agricultural practices that enhance resilience and environmental performance.

Environmentally sustainable production can reduce agriculture’s dependence on external inputs while strengthening preparedness and resilience. Improved nitrogen management, biodiversity-supporting production systems, and more efficient use of grassland are three areas that can contribute to achieving multiple policy objectives.

4. Highlight blue food as a strategically important food category.

Blue food represents a strategically important and highly diverse food category that strengthens the foundations for sustainable and resilient food systems.



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FACTS BOX

EU's Vision for Agriculture and Food

aims to set the political direction for the area and is based on four cornerstones:

1. An attractive agri-food sector that is viable, predictable and where industry incomes enable its development;
2. A competitive and resilient agri-food sector that can withstand rising competition and global shocks;
3. A future-proof agri-food strategy that works in harmony with nature and contributes to the EU's climate goals while protecting biodiversity, water and air;
4. Valuing food, promoting fair working and living conditions, and developing rural and coastal areas.



duction within planetary boundaries, and economically viable enterprises, and illustrates how policy instruments can support the system's development towards these goals.

It shows how all parts of the food system are interconnected and mutually dependent. A sustainable transition requires a holistic perspective covering the entire chain – from consumption to production and back – while simultaneously considering healthy diets, environmental sustainability, and economic viability throughout the system.

2. Achieving health, environmental sustainability, and competitiveness requires transformation of both production and consumption.

Viable production is a cornerstone of the entire food system, but it is not sufficient on its own. To achieve targets for sustainable and competitive production, consumption must be aligned with diets based on sustainable production systems. This transition benefits both consumer health and the long-term development and competitiveness of agriculture.

An important consideration is that the sustainability transition in agriculture may lead to higher food prices. To prevent this from driving demand towards less sustainable alternatives, consumption must be adjusted in tandem with production.

The transition requires governance, where coordinated policy instruments are adapted to changing environmental and health challenges (2) to accelerate the transition. Public acceptance is a prerequisite for effective governance. Measures perceived as costly or restrictive risk meeting resistance. At the same time, around 20% report being willing to change their consumption pat-

terns, suggesting that these can be influenced through softer policy instruments. For the remainder, more far-reaching measures are likely required. Research shows that acceptance increases when interventions are designed with the underlying drivers of behaviour in mind, and that interventions from value chain actors often encounter less resistance than state-led instruments (3, 4).

3. Promote agricultural practices that enhance resilience and environmental performance.

Research shows that environmentally sustainable measures can reduce agriculture's dependence on external inputs, thereby strengthening preparedness and resilience. We summarise three areas of particular interest from this perspective:

- Improve nitrogen management in agriculture. This reduces both the need for mineral nitrogen and emissions of ammonia and nitrous oxide. Effective measures include improved manure management (5), cultivation of cover crops that reduce nitrogen leaching and contribute to carbon sequestration (6), and precision fertilisation that matches nutrient supply to field and crop requirements (7). Targeted policy instruments and investments can support the scaling up of these measures.
- Promote production that contributes to biodiversity conservation. Clear incentives for diversified cropping systems help increase biodiversity, support ecosystem services, and reduce the need for chemical plant protection (8,9). Grazing in semi-natural pastures benefits biodiversity but requires economic conditions that make such systems viable, even when they are not the most climate- or resource-efficient per kilogram of product (10).
- Use leys more efficiently. Ley cultivation can increase soil carbon, reduce the need for chemical plant protec-





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tion and nitrogen fertilisation, and reduce dependence on imported feed (11,12). Key measures to increase ley cultivation and its integration into crop rotations include:

- o Increasing the proportion of grass feed in rations for dairy cows and other cattle, which requires high-quality forages. Currently, farms with high proportions of grass feed are less profitable and more labour-intensive than other farms (13), indicating a lack of incentives.
- o Finding new pathways for valorizing grass that allow profitable cultivation even on farms without grazing animals. This could be directly as feed for other livestock (14), as a raw material for bioenergy (15), or for further processing in biorefineries (16).

4.Highlight blue food as a strategically important food category.

Blue food is a strategically important food category for several reasons:

- In general, seafood has a lower climate impact than meat from terrestrial systems (17), particularly when considering small pelagic species and aquaculture systems that do not require feed inputs.
- Fish, shellfish, and other marine foods are healthy foods with a favourable nutrient profile (18).
- With around 2,500 species and production systems globally, blue food offers high diversity and creates the conditions for sustainable and resilient food systems.

Fisheries and aquaculture should have a clearer role in the vision and be considered an integrated part of the food system, on par with agriculture, even though they are currently covered by separate policy areas. The blue food sector has significant potential but is only sporadically mentioned in the vision, often in relation to agriculture. Linking the blue food sector with the terrestrial food system generates substantial synergies, including through feed production and reduced nutrient leakage from agriculture, which benefits the blue food sector. Together with agricultural food production, blue food is central to a resilient food supply.

These recommendations have been developed by researchers within Mistra Food Futures. The researchers are responsible for the content of the document.

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About Mistra Food Futures

Mistra Food Futures is a research program at SLU. Our main partners are SLU Swedish University of Agricultural Sciences, the Stockholm Resilience Centre (SRC) at Stockholm University, RISE and the Beijer Institute of Ecological Economics, Royal Swedish Academy of Sciences. We provide an interdisciplinary perspective on the Swedish food system, with a global perspective. In dialogue with external stakeholders, we develop strategies to achieve economic, social, and environmental sustainability and resilience.

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