

EXECUTIVE SUMMARY

Achieving global food security without compromising free trade or agricultural productivity: a global perspective on the EU's Green Deal and the role of innovation for sustainable agriculture

**Steffen Noleppa, HFFA Research GmbH
Ettore Capri, Opera Research**



OPERA



UNIVERSITÀ
CATTOLICA
del Sacro Cuore



Priority in agricultural policy making has progressively shifted to sustainability and away from production and productivity in some high-income countries over the past decades. In the European Union (EU), the European Green Deal and its Farm to Fork (F2F) and Biodiversity strategies seek to drive significant acceleration towards a more sustainable and resilient food system.

At the same time, the COVID-19 pandemic and the Russian war in Ukraine have recently highlighted food system vulnerabilities that can ultimately lead to a global food security crisis. Projections of an uncertain macroenvironment over the next ten years suggest potentially drastic consequences for hundreds of millions of people in low-income countries and for the vulnerable populations of developed nations.

Against this backdrop, it is critical to examine the driving role of policy and the potential for unintended consequences. Regulations affecting agricultural production and food trade globally can have negative repercussions when governments do not strike the right balance between environmental protection and food security. While increasing the sustainability of agricultural processes is a noble pursuit that must become reality—we need continuous improvements and innovation in agriculture and the food sector to foster economic prosperity, a healthy population and to protect the planet—we must nevertheless give the same emphasis to achieving food security when formulating and implementing policy. We may otherwise jeopardise realisation of the UN 2030 Sustainable Development Goals and create major disruptions at both regional and global levels.

The goals of the EU's F2F Strategy and Biodiversity Strategy include reducing nutrient loss by 50 percent and the use of chemical fertilizers by 20 percent; reducing the use and the risk of chemical pesticides by 50 percent; decreasing antimicrobials by 50 percent; increasing the area under organic farming to 25 percent of all used agricultural area, and establishing a minimum of ten percent non-productive area. What impact can we expect? Our review of research papers examining certain supply-side aspects reveals the following:

KEY FINDINGS



- **Decline in production:** Achieving the defined objectives would lead to a reduction in agricultural crop and livestock production in the EU. A decline in production of 24 percent for cereals and of 25 percent for oilseeds could be expected on average. This would also shrink the domestic food supply.
- **Higher prices:** This reduction would be accompanied by higher prices for agricultural raw materials and food. An increase in commodity prices of no less than ten percent should be expected.
- **Decrease in exports:** Enforcement of the two strategies would lead to a decrease in EU exports of some key agricultural produce, while imports of other key commodities would increase accordingly. The EU's net trade position would thus potentially deteriorate, and it could even become a net importer in some markets where it is still a net exporter. The trade balance with respect to all major arable crops would be negatively affected, and millions of tons of cereals, oilseeds, and other crops would be missing in the EU if the two strategies are fully implemented.



- **Reinstate food security as a global policy objective:** Food security at the global scale must be reinstated as a non-negotiable objective in the agricultural and food policies of wealthier nations. It is not sufficient to make European agriculture more sustainable ecologically, we must also ensure economic productivity and prosperity at the global level. As responsible actors committed to helping to meet today's challenges, EU member states and other countries must consider all economic, social, and environmental concerns in a balanced way.
- **Support additional studies and extensive research globally:** Individual countries should perform their own local impact assessments of the European Green Deal and its F2F and Biodiversity policies. They need to consider socio-economic issues as well as environmental aspects, and examine the potential effect of changes in agricultural input (fertilizers, PPP, etc.) and land use, as well as mirror clauses in international trade. This requires that "Sustainability" be correctly interpreted and conceptualized as a methodology that integrates and measures the costs and benefits of the technical decision's impact on environmental, economic and social pillars. The role of innovation in achieving greater economic, social and environmental sustainability of agriculture should be examined and research allowing us to thoroughly investigate the trade-offs between domestic production and consumption as well as subsequent imports and exports should be pursued. Options targeting agricultural and food demand such as changes in dietary habits, lowering food waste and loss and amendments in biofuel policy should also be explored. Greater data availability would enable researchers to quantify the impact of policy on food systems across multiple dimensions of sustainability: these insights could be translated into concrete policy and governance options allowing more efficient and sustainable outcomes.
- **Expand dialogue, improve communication:** Looking for ways to reconcile any conflicting agricultural and food policy objectives requires a holistic, systemic, and global approach. Today's challenges are global and all actors must be welcomed into the dialogue: we want to promote global food security while ensuring that no one region's policies impinge on the development and livelihood of another. Diverse agricultural needs and specificities need to be given equal weight in the analysis of the costs and benefits associated with agricultural and food policy formulation and implementation. The future of agriculture cannot be determined by politicians in isolation. All actors, including farmers, food chain operators, policy makers, and civil society should be part of the discussion and, ultimately, the solution. Policymakers must also communicate more clearly: it is not enough to address problems openly and formulate challenges, they must also define realistic goals for overcoming challenges and then support them with concrete and targeted implementation measures.
- **Integrate and support innovations and technologies:** Meeting both socio-economic and environmental sustainability objectives along with food security goals means breaking the historical pattern of increasing agricultural outputs by expanding farmland and using more inputs. The solution is to increase productivity. That is, we must produce more with less. The greatest potential for doing so comes from improvements in technologies and management. Innovations in plant breeding, plant protection and nutrition, as well as in management techniques should be put into more widespread use. We should continue to integrate improvements in chemistry, genetics, weather forecasting, equipment, farm management, etc., into agricultural production systems. New approaches such as digitalisation and biotechnologies should be welcomed. Introducing new chemical and novel non-chemical solutions and applying optimised practices that better respond to local vulnerabilities and reduce environmental impacts is clearly needed. Technologies should be seen as part of the solution, not the problem.

- **Formulate meaningful regulation:** A proportionate, results-oriented regulatory framework is needed to provide clear and consistent rules for innovation in the agricultural and food sector. The overall policy and regulatory framework must be reinforced to encourage necessary investments into future innovations. It should particularly encourage European innovation hubs such as plant breeders and the crop protection and plant nutrition industries to devote the necessary resources to increasing economic productivity and environmental resource efficiency. Safety considerations should address individual technologies and their application as well as the characteristics of the resulting product, rather than being applied to specific groups of technologies.

In conclusion, we recommend that food security be reinstated as a central objective in agricultural and food policies; that more research into the potential for unintended consequences be carried out on a global level; that policymakers open the dialogue more widely and improve communication; that technologies and innovation be more widely promoted and spread, and that innovation be supported by an appropriate regulatory and policy framework. This comprehensive, global approach offers our best hope for realising sustainable, socially acceptable agriculture that provides enough reasonably priced food for people everywhere.