

Agrinatura's position on the future of global food systems in relation to the EC's Farm to Fork Strategy

The European Commission's Farm to Fork Strategy makes a strong statement for the necessity of resilience in sustainable production and consumption systems. This holds for Europe, but is also relevant for the future of global agriculture. Agrinatura congratulates the EC on these ambitious plans to accelerate the transformation of food systems worldwide and for highlighting the importance of global partnerships in this process.

The Green Deal is an opportunity to help build more sustainable and inclusive agri-food systems. Agrinatura supports the EU's strong engagement in *research and innovation* to transform food systems for a green transition and sustainable growth. We applaud efforts to support this transformation on a global scale, including through the EC's international cooperation policies and the development of Green Alliances on sustainable food systems worldwide.

Agrinatura supports the EU's vow to implement, together with its Member States, the Agenda 2030. We reaffirm our commitment to contribute to the Sustainable Development Goals (SDGs) and the Paris Agreement in order to build up resilience in future food systems in low and middle-income countries. The reference to international cooperation and the topics mentioned in the Farm to Fork Strategy (Section 4: Promoting the global transition) are at the heart of Agrinatura's mandate.

The Farm to Fork strategy identifies research and innovation as key drivers in this transition towards sustainability and resilience in food systems, which is truly a global challenge. We recognize the need to find evidence-based solutions to these challenges and to find ways to deal with trade-offs that are inherent in attaining climate, biodiversity, social and food system goals. Our members work in basic and applied sciences, many with an inter-disciplinary approach at the interface of food systems and related complex global challenges. These include, amongst other areas, climate change, public health, soil health, energy issues, resilient food production, resource security based on circularity, the connection of "blue" food and agro-food production, carbon sequestration in soil and biomass, biodiversity, the impact of deforestation, as well as the water-food-energy nexus.

The current Covid-19 pandemic, caused by a zoonotic disease with large socioeconomic implications, clearly illustrates the importance of linking basic scientific understanding with translation in practical applications and the necessary policy decisions that are evidence based. We know that Covid-19 will continue to affect not only Europe, but the entire world and that this may induce a real transformation of the food systems, as we know them now. This may happen by means of fundamental changes in pathways, or by means of an adaptive process that builds on successive improvements of existing systems. Either way, Agrinatura is willing to contribute to more resilient food systems. We advocate a strengthening of research, education and capacity development. Knowledge is vital to improve existing

systems and Agrinatura has a long history in working with partners outside Europe. Real worldwide transition to make the EU food system a global standard for sustainability with recognition of local contexts, requires that the EU invests in robust strategic research and innovation partnerships, not only in Europe, but also at global and bilateral levels worldwide.

Research organizations and universities are well positioned to address these potential outcomes. We are an integral part of the global preparedness that allows for rapid response to grand challenges. We are also one of the main motors working toward a global transition; transforming agriculture is a concern in our every-day globalized food systems. This transformation of agriculture entails further development of practices based on environmental soundness, resilient agri-food systems and social equality. Further, if we are to make the transition sustainable over the long run, Agrinatura encourages investments in educational and capacity development programs that are linked to current research findings. This will build the continuous capacity for coming generations to prioritize resilience when striving to address global challenges.

Key issues

Agrinatura takes this opportunity to communicate a set of key issues and recommendations on the role of translational research, education and innovation for societal development as drivers in the transformative process of future sustainable food systems.

Partnerships. We advocate Farm to Fork initiatives that build upon structural partnerships for intensified collaboration in agriculture and food system research, education, capacity development, vocational training and food value-chain development. Agrinatura and its members are committed to continue consolidating strong partnerships in low and middle-income countries, and lead milestone activities that feed back into the Farm to Fork Strategy. An example is the Horizon 2020-funded project for Food Nutrition Security and Sustainable Agriculture (LEAP4FNSSA) that implements the African Union – European Union’s research and innovation partnership. Another example is the Erasmus + funded project SIMPLE that links the academic sector with the professional sector in agriculture and life sciences in Asian countries.

Knowledge creation, education and innovation for global development have been priorities of Agrinatura members for decades. We direct our efforts toward fulfilling the Sustainable Development Goals (SDGs), in particular SDG 2 (no hunger), SDG 12 (responsible consumption), SDG 13 (climate change), SDG 14 (life in water), SDG 15 (life on land), and SDG 17 (partnerships for these aims). The SDG framework recognizes that the global challenges are inter-related and must be addressed in a coordinated manner. Success in achieving the SDGs is dependent upon countries in all regions acting in support of a common agenda. Therefore, Agrinatura and our partners commend the EU for its commitment to promote the global transition to sustainable agri-food systems through international cooperation and for highlighting the key role of research, education and innovation in this endeavour.

Resilience in food systems is related to diversity and adaptation. The Farm to Fork concepts are strongly linked to other strategies in the Green Deal, notable biodiversity and climate change. Scientific evidence shows that diversity in terms of heterogeneity in food systems strengthens the capacity to

adapt and improves resilience in environmental, social and economic dimensions. Research and innovation as well as education and capacity building can be major drivers to promote the diversity and improve the resilience in food systems. Therefore, we encourage that these instruments be promoted and supported globally.

Re-localization of food systems. The European food system is strongly connected to the global food system. We welcome that the Commission acknowledges this linkage and the intention to not only raise European but also global standards in terms of sustainability. Sustainable global value chains play an important role in the global food system, and for many countries, they improve their potential to create income in a sustainable manner. The key is to create diversified production and consumption landscapes, where both global and short supply chains shift towards more sustainable practices, ensuring resilience of the entire food system. In this context, Agrinatura highlights the need to collaborate with low and middle-income countries to meet the global standards to prevent the emergence of non-tariff barriers to trade.

International cooperation in Research & Innovation and participatory approaches. Undoubtedly, research and innovation play a crucial role to enable and facilitate the transition process towards more sustainability. We welcome the Commission's acknowledgment of this matter. International collaborative research projects are essential in addressing these pressing issues.

Transdisciplinary approaches. A strong transdisciplinary approach is necessary to bring application of scientific results to the interface of food-system and eco-system demands. When such approaches connect researchers with actors in various sectors (i.e. farmers, consumers, processors, trading companies, policy makers) they become key to the implementation of the transition towards sustainable food systems. Therefore, we highlight the importance and potential of transdisciplinary science and participatory approaches, such as peer-to-peer methodologies or living labs, in boosting the transformation process in low and middle-income countries.

Educational programmes are the foundation of knowledge-based systems. The Farm to Fork Strategy stresses the important role of translational research and innovation in a concerted action driving the transition to food systems that are sustainable from social, economic, environmental and health perspectives. Agrinatura sees that higher education and vocational training that are linked to current demand-driven research, pave the way to achieve the aims of the Farm to Fork Strategy.

Translational multi-stakeholder approaches for the co-creation and sharing of knowledge are central to effective Agricultural Knowledge and Innovation Systems (AKIS). Such systems focus on the knowledge exchange from farmers to researchers and educators, advisory services, communities, and private and public sectors; all of which to affect positive change. This approach towards sustainable transformation of agriculture is adopted in the DeSIRA (Development Smart Innovation through Research in Agriculture) initiative, which supports research and innovation projects in Africa, Asia, and Latin America. It strengthens research capacities and research governance involving key actors at national, regional, continental and global levels.

Demand-driven research agendas. In our view, investments that strengthen concerted action that include international networks of research and educational organizations are necessary. This will enhance leadership capabilities and capacities to develop locally driven research agendas that are

linked to the mandates of research and extension organisations. Postgraduate programmes should be designed to strengthen capacity to contribute to increased research awareness, conducive research infrastructure, and strong regional and international networks and collaboration. Such activities are efficient vehicles to generate and strengthen knowledge and capacities of coming generations.

User-lead processes and capacity development of innovation systems. Agrinatura works in global partnership with a wide range of regional, national and local organisations engaged in agricultural research for development (ARD) and food system research. Our decades of experience reveal that the development of sustainable food systems requires not only major investment in research, but also a supportive policy environment. Our involvement in initiatives such as the EU-funded Platform for African European Partnership on Agricultural Research for Development (PAEPARD), and the Capacity Development in Agricultural Innovation Systems (CDAIS) has convinced us that demand-led ARD approaches, with farmers playing a central role in the process, are both feasible and the most likely to deliver beneficial development outcomes. Additionally, collaborative programmes such as the Participatory and Integrative Support to Agricultural Initiatives (PISAI) and the Value Chain Analysis for Development (VCA4D) in which local knowledge systems, combined with rigorous science, result in solutions that are adapted to local needs.

We advocate co-creation of knowledge where family farmers and vulnerable consumers are the central objectives in demand-driven agricultural research programmes. This pro-poor approach will help forge adapted development strategies.

Multi-sectoral approaches. We see that a multi-sectoral approach is the way forward and is more important than ever before. Agrinatura acknowledges the proposed partnership in Horizon Europe on Agro-ecology and Living Labs. We consider that this partnership has a strong potential to support the transition of European food system(s), but support for this transition should be at the global level and not be limited to Europe. We encourage the EC to integrate the approach and objectives of this partnership in their international actions.

Based on our observations summarized in this position paper, Agrinatura strongly recommends to:

1. Embrace the Green Deal's Farm to Fork (F2F) Strategy commitment to promote the global perspective in making transformational changes in food systems. Maintain a pro-poor approach with consideration to the Sustainable Development Goals when determining knowledge-based policy and long-term strategies.
2. Promote a strong knowledge foundation to develop evidence-based scenarios for sustainable and resilient food systems. Stimulate international partnerships on research and innovation and establish strategic decisions on genuine scientific knowledge with inputs from the global community. Invest in research programs that foster insights in synergies

and trade-offs between food security, nutrition, biodiversity, climate, societal impacts. Use these insights to support choices in transition pathways on global, regional and local scales.

3. Re-imagine the role of education to accelerate the transition and to develop global standards for the sustainability of food systems. Promote the creation and dissemination of knowledge by promoting higher education in ARD, by supporting local institutions in middle and low-income countries, by fostering global cooperation and exchanges, as well as by strengthening research leadership, vocational training and advisory services.
4. Involve all actors in global food systems and value chains, from farmers to consumers in the process of knowledge co-creation and sustainable consumption. Consider all of them as partners of participatory innovation processes. Implement a strong demand-led and transdisciplinary focus in the upcoming Horizon Europe calls and initiatives such as the Development Smart Innovation through Research in Agriculture (DeSIRA).
5. Consider the positive impacts that the diversification of food systems have on their resilience. This includes their re-localization, taking into account both short and global supply chains. Therefore, reframe research and rebalance investments to explore viable pathways for this transition. Address these issues at international fora such as the upcoming UN Food Systems Summit 2021.

Agrinatura offers to organize a webinar in early October 2020 to elaborate on these recommendations together with representatives of the European Commission, other stakeholders, and our partner organisations.

Agrinatura is a network of 36 European life-science universities and research organisations with a common interest in supporting agricultural development in a sustainable manner in order to improve people's lives. Agrinatura seeks to nurture scientific excellence through joint research, educational and training programs, and projects that contribute to the achievement of the Sustainable Development Goals. More information is found at <https://agrinatura-eu.eu/>.