

International Agri-Food Network Position Paper

INNOVATION: TO SUPPORT SUSTAINABLE CONSUMPTION AND PRODUCTION

Meeting the Sustainable Development Goals (SDGs) requires locally adapted agricultural practices that foster productivity, maintain environmental sustainability and promote rural livelihoods. Agriculture is a steward of the natural environment including land and water. The world's farmers provide ecosystem services, food production, and livelihoods. Agriculture work in a complex environment and is continually striving to improve through innovation in the form of best practices, integration, and technologies. **More attention should be paid to the positive improvements agriculture is making.**

The UN has already (December 2017) formally supported the need for convergence of all the available technologies and their use in **integrated solutions** that are able to address local needs and societal requirements.

"Recognizing the need to further enhance the linkages between agricultural technology and agroecological principles, such as recycling, resource use efficiency, reducing external inputs, diversification, integration, soil health and synergies, in order to design sustainable farming systems that strengthen the interactions between plants, animals, humans and the environment for food security and nutrition, enhance productivity, improve nutrition and conserve the natural resource base, and attain more sustainable and innovative food systems".¹

It is important to recognize sustainable agriculture as a process that evolves over time rather than a prescribed and static set of practices. As such, there is not one particular set of farming practices that fits all different ecological conditions nor the different farming systems. **Innovation is essential to achieve them all.** By default, all farming systems have an impact on the environment from traditional slash and burn to conventional cropping methods. The future lies in an evolving multiplicity of systems but that are increasingly tailored to local conditions.

The evolving broader approach has recognised the use of bottom up and "learning by doing" **methods in training**, focusing on the needs and preferences of different farmers, and particularly women farmers, **integrating traditional knowledge with scientific practices**, and taking on **landscape-level approaches**. These are all key elements in ensuring that agriculture supports food security and quality, market access, sustainability and rural livelihoods according to the SDGs.

This also directly impacts the resilience of farmers who have multiple challenges as outlined in SDG 2.4:

¹ General Assembly resolution Dec 2017 <http://undocs.org/A/C.2/72/L.33/Rev.1>

SDG 2.4: by 2030 ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality

Key areas that should be considered:

Land

- Focus on soil health and erosion;
- Use conservation practices-when and where applicable;
- Use integrated techniques to combine agro-forestry, grazing, and cropping; and,
- Use best practices to maintain soil health, including the 4Rs: applying the right rates of the right nutrient source (including manure and mineral fertilizers) to the location at the right time.
- The use of specific crops that provide wider benefits than just forage such as legumes and other crops that enhance biodiversity or forage mixtures that enhance sequestration potential.

Water

- Efficient use of water recycling strategies, including grey water
- Encouraging the use of drought resistant crops in water deficit areas
- More efficient irrigation systems and water demand monitoring
- Use of traditional and modern water saving/harvesting methods minimizing run off from agriculture into water systems
- Water access for lactating livestock that convert the pastures and water to a nutritious foodstuff for humans.
- Water treatment technologies to protect waterways

Production

- Encourage the use of crop rotation, better manage land and diversify farmer risk
- Promoting integrated farming systems like integrated pest and plant nutrition management and intercropping
- Use precision agriculture technologies to use precisely the inputs needed for a crop and better access to inputs
- Use information technology to provide locally relevant advice on timing for planting, harvest, pest management
- Promoting the use of modern genetics (both plant and animal) that will enable enhanced performance in different production geographies and systems.
- Connecting producers with market requirements that could generate higher levels of income if raw material production meets the required specification

Waste

- Encourage more recycling
- Develop alternate uses for byproducts such as wood chips

- Develop training programs for farmers on effective utilization of manure and straw which are not wastes but are raw materials to crop and forage production
- Encourage measures for resource use efficiency that demonstrate the value to the business if implemented effectively
- Build local adequate storage for agricultural products with a focus on post-harvest losses
- Increase efficiency of supply chains to avoid waste with associated rewards for farmers
- Sustain health of crops, herds, and forests
- Identify on national scale what products are actually wastes and develop alternatives that are either less or recyclable.

Research

- Establishing and promoting improved practices with regards to agroecology will depend upon the availability of a solid knowledge and evidence base. Research, whilst focusing on this key principle, must also include economic, social and environmental considerations.
- Research must also consider the exploitation of new knowledge at the very start of the work to ensure immediate uptake and no lag time post research completion and delivery to key stakeholders
- Priority research should include: resource-efficient, resilient, and high yielding species, integrated land use planning, climate change adaptation and mitigation techniques, precision agriculture, water saving and water harvesting that are market focused and provide genuine efficiency savings at farm level.
- Build capacity for data collection from best practices among researchers, producers, and traditional communities.

Enabling People and Institutions

- Improve provision of technical support and training to both enable farmers and let them make informed decisions.
- Increased investment is needed from both private and public sources, including businesses, agricultural ministries, and intergovernmental organizations to facilitate advancement of agroecology and productive agriculture.
- Improve agricultural extension and rural advisory services and improve skills of staff delivering those services.
- Ensure that gender is mainstreamed throughout all food programmes, for example by making sure that any certification statements issued to groups and households are issued in the name of women members, not just men.
- Promote farming as a desirable occupation for the next generation of farmers and specifically acknowledging that Agroecology will require new talents. It is important to recruit youth to agriculture and facilitate knowledge transfer and innovation among young farmers.
- Make use of the Voluntary Guidelines on the Responsible Governance of Tenure (VGGT), and the Principles for Responsible Investment in Agriculture and Food Systems (RAI).

- Where appropriate, support in the form of grants and tax exemptions should be made available for the purposes of investing in practices that reduce agriculture's impact on the environment and improves the sustainability of the business as a whole, particularly for smallholders and other marginalized groups.
- Support should be provided for the development of sustainable, more efficient, and more inclusive value chains for smallholders, for example through the provision of macro-economic stability, infrastructure, and investment-friendly development strategies.
- Access to financial literacy and business management extension services should be provided, particularly for smallholders, to allow producers to become entrepreneurs.