The OECD definition of agroecology is as a scientific discipline

Business at OECD defines agroecology as a scientific discipline. It is the pursuit of knowledge, via academic research, about the interaction between agricultural processes and the environment. This is consistent with the OECD definition, “agro-ecology is the study of the relation of agricultural crops and environment.”

As with any scientific discipline, knowledge gained from this research can be used to inform best practices, approaches and policies. However, we do not consider the resulting best practices and policies themselves as forming part of agroecology.

Since its emergence in the 1960’s agroecology has helped increase our understanding of the interrelationship between agriculture and the environment. In particular, it has shed more light on how the local context of crops affects the productivity of agroecosystem services. Also, on how crops can be best managed by considering the environment and biodiversity that for instance underpin agroecosystem services such as soil fertility, nutrient cycling, and water regulation.

Agroecology is an important element in achieving the Sustainable Development Goals and delivering a well-functioning agricultural and food system

Meeting the Sustainable Development Goals (SDGs) requires locally adapted agricultural approaches that foster productivity, maintain environmental sustainability, promote rural livelihoods, and ensure resilience.

In particular, meeting SDG 2 requires increased focus on the influence of local contexts on what constitutes ‘climate smart’ and sustainable agriculture practices, taking into account fragile farming communities and the specific needs of small holders. Today, many approaches have been developed that offer sustainable solutions while maintaining agricultural productivity and ‘usefulness’ to society over the long run.

In choosing the right approach for an individual context, understanding the interactions between crops and their environment is an important guide, along with other social and economic dimensions, such

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2 Goal 2 is “End hunger, achieve food security and improved nutrition and promote sustainable agriculture”
as access to land, soil, weather patterns and water availability, the establishment of agricultural value chains, and access to training.

**Agroecology is not associated with any particular agricultural production system**

Business at OECD is aware of three, broadly different, interpretations of agroecology today. It is referred to as the combination of agricultural and ecological sciences, hence as a scientific discipline; it is also referred to as an agricultural production system based on specific practices; finally, it is referred to as political or social movement. This variety may cause confusion and distract from discussions on how to meet the SDGs.

Several approaches to farming exist in the public debate. Some schools of thought actively seek to reframe the original concept of agroecology as an agricultural production system of its own. Wezel et al., for example, note that the concept has evolved over time, as agricultural product systems did, partly in reaction to changes in food production systems and increased uptake of certain tools, such as hybrid crops and fertilizers, since the 1970’s.4

Others seek to frame agroecology in terms of a political or social movement. For example, the definition put forward by Francis et al. encompasses not only physical elements but also consumers and producers as part of the food system.5

Agroecology as a movement is also often portrayed in opposition to current agriculture practices. Proponents claim to stand for farming systems that are more beneficial to farmers and society than existing ones. It is seen as broadly opposing the use of external inputs, favoring low-technology practices and professing to be more equitable in its outcomes, sometimes equated with organic agriculture.

However, agroecology is not a separate farming system. Indeed, it is important to recognize that there are no ‘agroecological practices’ as such. Many of the practices promoted under the heading ‘agroecological farming’ are already best practice, such as crop rotation or soil fertility management, which can be applied in a variety of contexts and farming systems.6

Ultimately, greater definitional coherence is needed. A shared understanding of agroecology, including its uses and limits, is critical to ensure farmers and the public receive valid and relevant information.

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6 For example see Altieri’s description of agroecological practices: http://nature.berkeley.edu/~miguel-alt/principles_and_strategies.html. Altieri presents crop rotation, crop cover and the use of manure and compost to improve soil quality as agroecological practices. While certainly these practices do contribute to maintain soil quality, they are used in a range of farming systems.
Policy makers should take a multidisciplinary approach when seeking to achieve food security and sustainability, integrating knowledge from agroecology

Meeting the challenge of food security has led policy-makers and scientists to seek a broader approach to agricultural policy-making. This moves on from the technical elements of agronomy alone to include a wide variety of considerations. Including, access and control over resources, how to inform and provide access to technology choices, trade issues, regulatory environments and standards, and food quality and distribution networks.

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 are all key elements in ensuring that agriculture supports food security and quality, market access, sustainability and rural livelihoods according to the SDGs.

However, to meet current and future demand for agricultural goods sustainably, we must not preclude any options and instead focus on what is most appropriate and scalable in any given context. All decisions must be grounded on scientific evidence and follow the development framework of the SDGs.

Business at OECD advocates for a mix of practices, tools and technologies tailored to each situation. Many practices, such as precision agriculture, conservation farming (no- or reduced till practices), drip irrigation, crop rotations, and integrated pest management, are supportive of and compatible with the goals of sustainable development and food security. Unilateral promotion of certain farming systems or the exclusion of some technologies does not reflect the notion of sustainable development and limits farmers’ choices.

As policymakers work towards the goal of food security, agroecology will be an important guide. In particular, it contributes to understanding the impact of different practices on crop productivity and the local environment and so enables farmers to choose the best options.

Good practice exists of how to use agroecology appropriately

A good example of how agroecology can play an important role in informing decisions is the System of Rice Intensification (SRI). The SRI built on agroecological observation and developed into a flexible set of principles to support sustainable and productive rice cultivation in many countries. Crucially, the SRI system integrated agronomic and agroecological knowledge and uses technologies and tools, such as improved rice breeds, improved irrigation methods and other.7

The ‘save and grow’ paradigm developed by FAO to support sustainable crop production

intensification (SCPI) also successfully incorporates elements of agroecological analysis. Again, it does not preclude the use of technologies and other practices and is rooted in the need to sustainably increase production.⁸

A further example, from academia, is the article by Ferede at al. discussing the importance of specific agroecological conditions in different areas of Ethiopia in influencing how climate change will impact crop productivity in the country.⁹