Rikolto and agro-ecology

Agro-ecology is not just a set of practices; it is also a social movement and a scientific discipline.

Agro-ecology leverages local resources, relationships and knowledge for the development of resilient and productive agriculture i.e. by closing nutrient cycles, promoting free exchange of seeds between farmers and advocating the use of natural fertilisers and pesticides. The approach reduces farmers’ dependency on external inputs and thus strengthens their autonomy. It is based on collaboration with nature, and results in more climate-resilient ecosystems due to the adoption of crops and practices that are better adapted to changing climate, and due to reduced use of fossil fuels.

Additionally, the agro-ecology movement today has spread worldwide. Its principles (see list appended) are receiving more and more recognition and are being put into practice by large numbers of farmers, citizens and scientists. Its applications range from organic agriculture, permaculture and urban agriculture to community-supported agriculture, food sovereignty initiatives, etc. Agro-ecology is now receiving attention and recognition from policymakers and scientists. It links scientific work with on-farm practices and the activities of social movements.

Position of Rikolto
Rikolto supports the agro-ecological approach and firmly believes that this approach and its principles are an important inspiration for the necessary systemic changes to our agricultural and food systems. In general, we support each of the principles and we are well aware that it will take time to put them into practice. The principles focus mainly on farming systems within their ecological and social environment and less on the economic sphere of relationships with other economic players upstream and downstream in the food chain. The commitment to agro-ecological practices should not only be taken up by farmers, however: sustainable food and farming is a responsibility for society as a whole. All stakeholders in the food chain (consumers, public authorities, etc.) contribute in their respective roles.

Implications for our work
Although Rikolto does not focus its efforts on the technical agricultural production level, we still recognise that agro-ecology is important for the sustainability of the food system. Agro-ecological principles guide our production system-related efforts; however, they are not seen as preconditions that must absolutely be met. We are aware that in most situations it will not be possible to develop short- or medium-term future prospects that fulfil every principle. We will constantly and actively encourage partners in the value chain to support efforts related to agro-ecology, try to remedy bottlenecks where possible and look for appropriate dedicated partners.

When selecting new pilot projects, Rikolto will be looking at the commitment to agro-ecological practices should not only be taken up by farmers, however: Sustainable food and farming is a responsibility for society as a whole.”

“The commitment to agro-ecological practices should not only be taken up by farmers, however: Sustainable food and farming is a responsibility for society as a whole.”

“Agro-ecological principles guide our production system-related efforts; however, they are not seen as preconditions that must absolutely be met.”
at the future actor’s potential and willingness to adopt the principles of agro-ecology. When there is no – or insufficient – potential and/or willingness to make any progress, we should select other pilot projects. Since our efforts are not focused on the technical production level, we do not have to acquire in-house technical expertise, although we still need to understand the issues and be able to incorporate them into our communications. We recognise how important the implementation of agro-ecology is and we encourage other organisations to participate as well. Rikolto wants to stay connected with agro-ecological initiatives and strives to inspire mainstream stakeholders in the food chain and facilitate their learning process.

In Belgium, Rikolto organised a round table on #SavetheFoodture on a CSA farm. The other participants were retailers and companies in the food industry. We recognised the value of this CSA farm, which can serve as inspiration for new business models between the stakeholders in the food chain.

We have also initiated a learning platform on agro-ecology with academics and colleagues in other NGOs. The goal is to learn how agro-ecological practices can be applied by mainstream stakeholders.

In Ecuador and Peru, Rikolto encourages farmers to adopt four practices that help protect their farmland soil: the use of natural barriers for the benefit of their land, the planting of cover crops, the incorporation of organic matter from recycling crop residues, and crop management of coffee and cocoa in agroforestry systems.

In Vietnam, Rikolto supports small-scale tea farmers implementing practices for managing soil erosion, soil fertility, soil quality, water, biodiversity, weeds, etc. The farms are landscaped by intercropping young tea and by planting hedgerows, shade trees (Indigofera or Cassia) and cover crops. The soil is also covered with mulch and weeds are efficiently controlled. Newly established compost mounds serve as a natural fertiliser for the farms. Farmers are required to keep records of the use of agrochemicals and the quantity applied. They then have to strive to reduce and eliminate these products, especially the most toxic ones. Farms must also have an integrated pest management programme based on ecological principles for the control of harmful pests. Rikolto also supports small-scale vegetable farmers in Vietnam as they implement organic farming practices compliant with the PGS Organic standard for Vietnam. This involves applying organic compost, planting pest-repelling plants and using home-made organic pesticides containing...
garlic, chilli, ginger and wine. In West Africa, Rikolto works with APROVAG, a cooperative of 1,200 banana farmers in Senegal, on a joint project to promote the establishment of composting units on farms. The organic manure should replace chemical fertilisers, which will improve soil health and prevent contamination of surrounding waters.

**Facts and Figures**

Agro-ecology supports the multifunctional aspects of agriculture, which include not only food, jobs and economic well-being, but also cultural, social and environmental benefits, and important ecosystem services such as pollination, natural pest control, nutrient and water recycling, and erosion control.1,2

Evidence shows that agro-ecology:

- Increases ecological resilience, especially with respect to volatile weather conditions;
- Improves health & nutrition through more diverse, nutritious and fresher eating habits and by reducing the number of cases of pesticide poisoning and pesticide-related diseases;
- Conserves biodiversity & natural resources (e.g., soil organic matter, water quality and quantity, crop genetic diversity, natural enemies of pests, ecosystem services and pollinator protection);
- Improves economic stability of farmers with more diverse sources of income, the spread of labour requirements and production benefits over time, and reduced vulnerability to single-commodity price swings;
- Mitigates effects of climate change through reduced reliance on fossil fuel-based agricultural inputs and through increased carbon sequestration and water capture in the soil;
- Increases social resilience & community capacity by increasing ecological literacy and social support networks.

Agro-ecology is nowadays supported by an increasingly broad section of the scientific community. It features prominently in the International Assessment of Agricultural Knowledge, Science and Technology for Development and in recommendations from the United Nations Environment Programme 21 as well as other international agencies (De Schutter, 2014, p. 8).

**Reply to criticism**

It is often said that agro-ecology is not suitable for industrialised countries because it is too extensive and does not provide sufficient return on investment (high cost of land), and because of the difficulty of paying high labour costs and complying with the demands of the food industry/retail. Agro-ecology is like an ideal long-term target that, in the meantime, will be limited to some niche initiatives and is therefore not very relevant to current practices.

In response to this we say that industrialised agricultural and food systems are not able to meet the global challenges of feeding 9 billion people while at the same time taking care of the planet and the well-being of the world population. We therefore need system changes inspired by agro-ecology, amongst other methods. Agro-ecology is rather new, but has the potential of high yields per unit of surface area, provides employment and can count on the involvement of citizens/consumers. This is also the case for industrialised countries. We do concede that there are difficulties in supplying large quantities of uniform products.

**Inspiring projects**

A good example of the application of agro-ecological

---

“Evidence shows that Agro-ecology increases ecological resilience, especially with respect to volatile weather conditions”
principles was the ability of small-scale farmers in Central America to withstand the adverse effects of Hurricane Mitch. In the aftermath of the hurricane, agro-ecologically managed plots in Guatemala, Honduras and Nicaragua retained more top soil, field moisture and vegetation and suffered less erosion than conventionally managed resource-extractive farms. Agro-ecological farmers consequently experienced lower economic losses than conventional farmers.¹

Controlling fungus contamination of strawberries by implementation of fruit-vegetable crop rotation with broccoli in California.

The application of the push-pull system⁶ of ecological pest management by Kenyan maize farmers, who have tripled their yields by intercropping maize with plants that repel pests, support natural pest predators and suppress weeds.⁷ In southern Niger, there is considerable evidence that sustainable intensification of small agricultural systems – which integrate food production, trees and livestock by using low external inputs, agro-ecological methods and crop diversification – can “re-green” denuded landscapes, reduce risks and improve food security for small-scale farmers. The best-documented techniques include “zaï” planting pits, rock bunds along contour lines and half-moon water catchments. Another crucial factor is farmer-managed natural regeneration (FMNR) of trees; in other words, farmers protect and grow trees on their own land.⁸ Other inspiring projects can be found in Appendix 2.

Footnotes
1. Agro-ecology is the application of ecology to the design and management of sustainable agro-ecosystems. It is a whole-systems approach to agriculture and food systems development based on traditional knowledge, alternative agriculture, and local food system experiences. Linking ecology, culture, economics, and society to sustain agricultural production, healthy environments, and viable food and farming communities – source: www.agroecology.org
6. The push–pull technology is a strategy for controlling agricultural pests by using repellent “push” plants and trap “pull” plants. For example, cereal crops like maize or sorghum are often infested by stem borers. Grasses planted around the perimeter of the crop attract and trap the pests, whereas other plants, like Desmodium, planted between the rows of maize repel the pests and control the parasitic plant Striga. Push–pull technology was developed at the International Centre of Insect Physiology and Ecology (ICIPE) in Kenya in collaboration with Rothamsted Research, UK and national partners.