

AGROECOLOGY & CLIMATE CHANGE

Context

Climate change adaptation and mitigation are among the key challenges facing agricultural and food production systems around the world. The expansion of industrial agriculture has made this sector the world's largest emitter of greenhouse gases, while the small-scale family farms that continue to provide most of the world's food are threatened by climate shifts in rainfall and temperature. Climate change and drought are affecting the agricultural economy and food security of many countries, particularly in drylands. Agroecology provides solutions for adapting agricultural and food production systems to the effects of climate change; but also solutions for mitigating its causes. Agroecological transitions reduce the vulnerability of agro-ecosystems, thus strengthening the resilience of small-scale producers to disasters. Agro-ecological transitions also avoid greenhouse gas emissions and store carbon in the soil.

Factors of climate change intensification

Current agricultural and food production systems contribute to environmental degradation and climate change, without providing sufficient quantity and quality of food for the entire world population. The failures are found throughout the supply chain, from production to consumption:

- Practices leading to loss of fertility and carbon in soils (bare soil, excessive tillage);
- The use of artificial fertilizers;
- The industrialization of crops and livestock leading to greenhouse gases (GHG) emissions;
- Food transport between countries and continents;
- Food waste on a global scale.

Arguments from the field:

Agroecology offers major assets for building climate change resilient agricultural and food systems, some of which have been identified from initiatives and field experiences and are shared here.

Agroecology allows to secure agricultural production

- The use of local knowledge, in terms of crop calendars and indigenous varieties that are resistant to water shortages, ensures abundant agricultural production even in areas where rainfall is low;
- The development of anti-erosion plots, the introduction of trees in the fields or hedges along the edges, like the Sahelian bocage, are solutions to avoid rainwater runoff and the risk of flooding, while promoting infiltration into the soil for the benefit of crops.

Agroecology helps sequester greenhouse gases

- Crop rotations and agroforestry allow the use of nitrogen-fixing plants such as cowpeas, groundnuts or *Faidherbia albida*, which contribute to soil fertility;
- Restoring and preserving the life contained in the soil, by avoiding heavy plowing, and through mulching or the use of compost, helps store carbon and also maintain soil fertility.

Agroecology promotes sobriety and reduces waste

- Short circuits created by the stakeholders through adapted food systems avoid the transport of agricultural goods and reduce the losses linked to a prolonged storage;
- The use of compost to fertilize cultivated fields allows the reuse of organic waste.

Messages from civil society



To facilitate the deployment of agroecology, all stakeholders must become aware of their capacities to bring change.

Donors and international organizations

- Place the transformation of the world's agricultural and food production systems, following the principles of agroecology, at the heart of strategies for climate change adaptation and mitigation;
- Redirect funds and financing facilities dedicated to agricultural development to support the agro-ecological transition, including subsidies for initial investment in small farms.

Governments

- Promote dialogue and align actions between the ministries and institutions in charge of the environment, agriculture, and any other relevant sector, around the deployment of agroecology to ensure sustainable agricultural and food production by addressing climate issues;
- Mobilize carbon credits and climate change adaptation funds to support the agro-ecological intensification of farms and the development of short circuits.

Research and education

- Provide scientific evidence on the risks and costs of inaction in transforming food systems in the context of climate, considering adaptation and mitigation issues;
- Mobilize scientific and farmers' knowledge of agroecological practices to integrate them into school and university curricula. ”

**AGROECOLOGY
RIGHT
NOW!**

We target Sustainable Development Goal (SDG) 13 (Climate action), while contributing to knowledge and development practices aimed at achieving SDGs 1, 2, 3, 5, 6, 10, 12 and 15.

