

# C2A Notes

## Agriculture and Food in question

Issue n°10 - January 2013

This memo was produced based on the C2A's similarly named report published in January 2013

### How and why agroecology can meet the challenges of the 21st century ?

***Agroecology is one way of responding to the crisis from which agriculture often suffers, to the limits of the "productivist" model, and to the future challenges for humanity (food security, development of the Southern countries, employment, and the ecological transition of modes of production and consumption). However, widespread adoption of agroecology presupposes that priority be given to family farming, to appropriate support coming within the framework of consistent policies, and to a change in practices by numerous players.***

#### Introduction

There have been many negative impacts and limits of agriculture stemming from the "Green Revolution", which is called "productivist" because it focuses solely on production and short-term income objectives. In reaction, many approaches have been developed in order

to implement "agroecological farming", which reconciles production and objectives of even a social nature (jobs, level and quality of life, food security, etc.). However, the widespread application of these experiments is a major challenge.

### How agroecology can meet the major challenges of humanity

#### Why talk about agroecology today?

Agricultural practices influence both short-term production and how cultivated ecosystems evolve (soil fertility, biodiversity, and microclimate). Since the advent of agriculture, various "agroecological" agricultural revolutions have sought to improve the productive potential (fertility) of the ecosystem through better integration of agriculture and livestock production, cultivation of plants that produce proteins from atmospheric nitrogen, and other means.

However, in many regions of the world, agriculture is currently suffering from an ecological crisis, which is contributing to the crisis in family farming. The former systems

of fertility management – such as long fallow shifting cultivation – have thus often disappeared due to demographic pressure, without having been replaced by new systems.

There are numerous negative impacts and limits of the Green Revolution: the deterioration of soil fertility, loss of farmland (erosion, aridification, etc.), decrease in biodiversity, exhaustion of non-renewable resources, deterioration of landscapes, contribution to climate change. In fragile environments and where the climate is unstable, the Green Revolution has performed poorly, and family farmers are often opposed to it. Furthermore, after having enabled strong increase in yields, the Green Revolution seems to have reached its limits.

## The Green Revolution

The basis of the Green Revolution is:

- \* the use of means of production stemming from the Industrial Revolution: large-scale mechanisation, motorisation (including for irrigation) and chemicalisation (mineral fertilisers, pesticides, drugs);

- \* the breeding of plant varieties and the producing of animal breeds that have high potential genetically and that are adapted to these means of production.

The increase in yields following the implementation of the Green Revolution made it possible to meet the growing food needs of humanity.

## Food security, income, and jobs

Agroecology contributes to the food security of rural populations and societies, thanks to an increase in the overall agricultural yield and a reduction in its variability from one year to another (and thus of risks for the farmer). This is especially the case when agroecology responds to the crisis of ecosystem fertility. The situation is more complicated when it replaces a system stemming from the Green Revolution. Nevertheless, even in these cases, the yield is generally at least equivalent to the initial level after a period of transition. Agroecology also makes it possible, via the diversification of production, to improve the nutritional quality of food.

Agroecology helps to improve agricultural incomes, not only due to its impact on yields, but also because it enables production costs to be decreased (less use of inputs).

By using more labour, agroecology also helps generate jobs. Added value and income increase overall, even if the impact on the income of each agricultural worker is more limited.

Furthermore, the income and empowerment of women are improved, thanks to the increase and diversification of production. At the local level, the indirect effects on income and jobs are frequent (creation of value chains, stimulation of local trade, and so on).



©AVSF, Agroecology practices - Madagascar

## Health and the environment

Less use of chemical inputs helps to decrease risks for the environment and people's health. Agroecology makes it possible to reduce the use of non-renewable resources: water for agricultural use, energy (less use of chemical fertilisers, non-excessive motorisation, etc.), phosphorus and potassium. It contributes to biodiversity and improvement of soil fertility, and sometimes makes it possible to recover land that has become unproductive. It increases resistance to climatic accidents, especially thanks to the diversity of activities and practices of soil protection (trees, plant coverage). Finally, agroecology's contribution to the fight against climate change must be emphasised (less use of fossil carbon, carbon sequestration in the organic matter of plants and soil).



© AVSF, Agroecology practices - Jacmel/Haïti

## Agroecology

Agroecology seeks to produce diversified and high-quality food, reproduce – or even improve – the ecosystem's fertility, limit the use of non-renewable resources, avoid contaminating the environment and people, and contribute to the fight against global warming.

To do so, agroecology enhances the potential of ecosystems to capture external natural resources (solar energy, atmospheric carbon and nitrogen, water) and uses the synergies and flows inherent in these ecosystems (crop diversity, complementary nature among vegetable/animal/tree production, biological control, etc.).

For some people, agroecology also includes a strong social, economic and political dimension: reorganising value chains based on shorter circuits, along with the strengthening of farmers' organisations.

# Conditions needed for the development of agroecology

## Support for family farming

The transition to agroecology should concern all agricultural systems, but the spread of agroecology implies priority support for family farming. The vast majority of farmers practice family farming, which represents nearly 70% of global agricultural production. Furthermore, agroecology relies largely on the local knowledge and know-how accumulated over the course of centuries by family farming.

Finally, family farming is much more suitable than capitalist agriculture for implementing agroecological agriculture. Farming families have an interest in improving the ecosystem, because their own long-term social reproduction depends on it. When they have the family labour necessary, they do not hesitate to use it for ecosystem preservation and improvement purposes, as use of this labour does not involve extra cost. For a capitalist company, the essential management criterion is the immediate profitability of the invested capital. Agroecological practices, on the other hand, have deferred profitability, and are expensive in the case of agriculture that relies on salaried labour.

It is therefore important for agricultural policies to generate a favourable environment for family farming (remunerative and stable prices, access to natural resources, support for investments, and public investments). It should be emphasised that, while family farming reconciles short-term and long-term objectives (including ecosystem reproduction) when it experiences relative prosperity, in crisis situations family farms give priority rather to the short term – or even to their own immediate survival. The implementation of agroecological practices then becomes unrealistic, all the more so because the transition towards ecological agriculture may involve significant initial investments (for planting, terraces, animals, etc.).

« Agroecology implies specific knowledge and know-how that often pre-exist locally »



© AVSF, Agroecology practices - Jacmel/Haiti

## Encouraging investments and the transition towards agroecology

Farmers are often reluctant to adopt agroecology because Green-Revolution agriculture enables them to obtain sufficient income. Furthermore, agroecology may involve renouncing certain subsidies for chemical inputs, giving up equipment already acquired, and making new investments. It may appear too labour-demanding and initially lead to stagnation or loss of yield. Finally, it may seem too risky.

This is why it is important for the State to encourage investments (tree seedlings, animals, etc.) in agroecology, especially during the transition period, including via grants or specific credit lines.

Securing access to land is crucial, because agroecology implies investments in the ecosystem that may be difficult to implement if the family is not sure it will benefit from the results.

## Knowledge and know-how

Agroecology implies specific knowledge and know-how that often pre-exist locally. This is why it is important to promote experiments in family farming and exchanges of experience (exchange networks, from the local to international levels), with agricultural outreach playing a role of facilitation as well as explanation, measurement and diffusion of results.

Agronomic research centres must work much more on agroecological solutions to the problems of farmers, by referring to experiments by family farmers. They must also seek the participation of producer organisations in setting research objectives.

Agricultural education must – much more than it does today – deal with the functioning of cultivated ecosystems and the economic processes of family farming, as well as highlight family-farming knowledge and know-how. Agroecology must stop being the niche subject (a specialisation or optional subject, etc.) to which it is all too often limited today.

## Enhanced value of agroecology products

The State and local communities can help to promote agroecology products in several ways: by supporting the creation of value chains, particularly more local ones; by backing specific ways of recognising these products and systems of participative guarantees; or through public procurement policies and the promotion of farmers' markets.

## Promotion of biodiversity and protection against GMOs

Agroecology is based on preserving and developing broad genetic diversity. This is why it is important for national laws to officially recognise the reuse, exchange and sale of seeds by farmers, as well as to protect agriculture against contaminations by GMOs, by banning them.

## Consistent policies in agriculture and development cooperation

Real political choices must be made so as to give priority to agroecology on a long-term basis. This means not just "greening" some elements of an agricultural policy, but making sure that the policy as a whole contributes to the development of agroecology, and that other public policies are consistent with this objective. This implies a change in conceptions of agriculture and resistance to influences from sectors and lobbies connected to the diffusion of Green-Revolution techniques.

International development cooperation has a role to play, not only in terms of support for national policies, but also at the international level, especially in giving direction to research programmes and in promoting the sharing of experiences between countries. An example of such experience sharing would be the setting up of a global platform of exchanges of practices and experiences specific to agroecology. In order to offset the powerful lobbies, it is also important for States and international institutions to effectively support the concept of agroecology alongside civil society.

## United for a transition to agroecology

Agroecology is not a dogmatic or over-simplistic approach. It is not limited to organic agriculture, even if this method is indeed a desirable objective in the medium term. It is important to further a transition to agroecology that takes into account all possible margin for progress in gradually replacing conventional techniques by agroecological practices. Agroecology is not a "return to self-sufficiency" either. The transition to agroecology should be an ambition shared by farmers' organisations, practitioners, States and local communities, research centres and development agencies. Its goal should simply

be to return to the fundamentals of agriculture with a minimum amount of common sense, to gain back diversity in terms of production and the environment, and to build agricultural and exchange systems at the local or regional level that are more autonomous and less risky for society as a whole. It is this family-farm agroecology that will finally make it possible to give new value to the profession, knowledge and know-how of the family farmer, as well as to recreate social ties, respect, and trust between society and an agriculture that nourishes and no longer does violence to nature.

As part of its mission to support the collective advocacy of its members, Coordination SUD has set up working committees. The Agriculture and Food Commission (C2A) brings together 20 international solidarity NGOs that act to realize the right to food and increase support for smallholder farming in policies that impact world food security: 4D, ACF, aGter, Artisans du Monde, AVSF, CARI, CCFD-Terre Solidaire, CFSI, CIDR, Crid, Gret, Interaide, Iram, Oxfam France, Peoples Solidaires in association with ActionAid, Réseau Foi et justice Europe, Secours Catholique, Secours Islamique, Union nationale des Maisons Familiales Rurales and 1 guest : Inter-réseaux.

The Commission aims to coordinate the work conducted by its participants and facilitate consultation among its members for their advocacy work with social actors and international policy makers. The members of the Commission reach agreements on the representation provided in the name of Coordination SUD in a range of arenas (Concord in Europe, FAO, WTO, UNCTAD) and share information on current international stakes. The Commission is mandated by Coordination SUD to formulate the positions taken by the group during the main institutional meetings on the subject of agriculture and food.

This paper is inspired from Laurent Levard (Gret) and Frédéric Apollin (AVSF) study, published by the C2A in January 2013.



The C2A Notes are produced with the support of AFD.

The opinions expressed in this document do not necessarily reflect the official position of the AFD.

