

## Agroecology for a better food system resilience and diversity in dryland areas



**Ethiopia is a country of hard-working people, largely having fertile soil and tropical climate with ideal condition for healthy and prosperous agriculture. However, climate change is making an impact across the country particularly in the dryland parts of the country and farmers have to adapt to new and uncertain conditions with sustainable agricultural practices.**

The impact of climate change particularly on the Ethiopian dryland agriculture is only worsening, as evidenced by the enormous damage caused by floods on farmland from heavy torrential rains and overflow of rivers, land degradation and recurrent droughts prevailing in the country's lowlands. While billions of trees are being planted with public policy support, these actions are only recent activities and focus on the highlands. However, it wouldn't be sustainable unless it is institutionalized, and adequate attention is given to take care of the establishing seedlings. Sustainable approach to dryland agriculture is also essential in order to improve the livelihood system of communities residing in the drylands of Ethiopia.

### The dynamics of transition

Although agroecological transition is practiced in a fragmented manner, estimates show that about 40 million hectares are allocated to agroecological expansion. However, these data are not well documented given the great attention and interest in large-scale industrial agriculture. A range of agroecological systems and practices exist in some territories more than in others. They are more prevalent in lowland and drought-affected areas due to the intervention of some NGOs, promoting climate-friendly agricultural practices. However, the transition is very slow and calls for a concerted and collective action among actors to bring more farmers in to the transition process.

## A successful example of Arbe's integrated farm in Sidama region

### 🔥 Diversity and food security

The example of woman farmer Arbe's farm in Udo Wotatie, practicing agroecological practices, shows that the transition was accompanied by diversification of agricultural production: the cultivation of enset and other root and tuber crops, the inclusion of traditional beehives, the rearing of poultry and animals, the production of vegetables and fruit for sale, among others. All these diversified sources of food and income have made the farm household economically viable and food secure. Diversification minimizes the environmental and economic risk (lower market price). It is a better living condition than a household that depends on sole cropping. Diversification also contributes to improve capacity for resilience and reduces potential production risks. If one production fails for one reason or another, farmer Arbe has something else to fall back on and sustain her family.

### 🔥 Resilience of the production system

Like other agroecological farms, farmer Arbe stopped using chemical fertilizers and shifted to the use of compost. She has developed her skills and knowledge of intercropping over time. She practices crop rotation by dividing her farm plot into small sections and grows different crop combinations. Farmer Arbe also grows multipurpose forage species and trees for timber production. The farmer in Arbe produces most of the feed on her farm.

### 🔥 Preservation of resources

On Arbe's integrated farm, she grows different food crops and does on-farm conservation of these resources. These include enset, maize, pulses, fruits, root and tuber crops and coffee among others. The level of intraspecific diversity is high for enset (12), haricot beans (5), maize (4), and banana (3). She is committed to continue diversity farming because it not only diversifies family diet and income sources, but also strengthens her capacity to cope with emerging challenges including climate change. Corn residues (the stalks left after harvest) are used as mulch on part of her farm plot. This is because mulching reduces evapotranspiration, prevents wind erosion and increases soil fertility as the leaves decompose on the farm and help to recycle the nutrients on the farm. Regarding livestock, farmer Arbe keeps cattle, poultry and honeybees.

### 🔥 Improved women leadership capacity & Inclusive governance

The experiences gained from the agroecological initiative i.e. Arbe's integrated and sustainable farm, made her to be a role model and community facilitator to train her neighboring farmers about her experience. She received trainings to improve her farm management and business skills. Farmer Arbe runs the family farm business as a source of food and income for her household. She is empowered because she has alternative income sources and meets the cash needs of her family at ease. As an agribusiness manager, farmer Arbe is a successful woman.

### 🔥 Improved economic Autonomy

Woman farmer Arbe has built her self-confidence and has the capacity to make decisions regarding her farm activities and business. She is capable of deciding what she wants to grow on her farm plot, what type of income generating business to do, identifying her sources of inputs, identifying her clients who buy her products, when and where to sell her products as well as how to use the income generated. At household level, both the husband and wife discuss collectively about their plans. She can also decide on some matters as deemed necessary. Her planned income generating activities enabled her to make profits and use that to educate her children meeting all their needs and also build a new home for her family.

## The essential support of the authorities

The following points are for the attention of communities and government officials who will attend the Green Action Forum<sup>1</sup> so that they will be well informed and take appropriate actions for creating conducive policy environment and supporting deployment of agroecological initiatives and practices in drylands of Ethiopia.

### 🔥 Diversity and greater resilience

Agroecological systems are all more resilient because they rely on a diversification of products and input as well as nutrient recycling. Their development is often strengthened by community access to local and scientific knowledge, particularly to those that maximize the resilience of the farm for environmental, market or manmade shocks.

**Governments should conduct and share studies on the benefits of diversification and on ecological practices**

### 🔥 Support for commercialization

Certification costs for organic production and produces are very high (e.g. for coffee producers). Farmers who wish to convert to organic production rarely receive technical or financial support. The focus is mainly on export crop.

**Governments must facilitate the acquisition and use of land for family farming and develop agroecological experimental fields**

### 🔥 Larger plots of land for families

The lowlands are plagued by diseases such as malaria and tsetse flies and are sparsely populated. The majority of farming population live mainly in the mountains. In the densely populated highlands, the soils are depleted due to continuous cultivation for centuries, natural erosion and land fragmentation. Pressure on land is high and, on average, a farm family owns less than one hectare to cultivate.

**Governments must facilitate the acquisition and use of land for family farming and develop agroecological experimental fields**

### 🔥 More technological and financial resources

The main obstacle to the agroecological transition is often the lack of access to technologies that facilitate agricultural work and to financial aid that encourages the ecological conversion of practices.

**Governments must financially support the agroecological transition, access to material resources and banking service**

<sup>1</sup> The Green Action Forum planned to take place in South Wello early October 2022 has chosen its theme to be "Transition to organic Farming". Green Action Week is a global campaign which was initiated to promote sustainable consumption at global level. It is to widen an understanding of Ecological Organic Agriculture (EOA) by policy makers, researchers, and the public at large. Over 50 civil society groups in Africa, Asia, Europe and Latin America have been taking part since 2013. Green Action Forum is an initiative of the Swedish Society for Nature Conservation (SSNC) and is carried out in collaboration with Consumers International (CI) (ISD, 2019 annual report). In Ethiopia, the Institute for Sustainable Development has been organizing the campaign event since 2013.

The AVACLIM project aims to create the necessary conditions for the deployment of agroecology in arid and dry areas. To do this, CARI, the NGO that is carrying the project, and its partners have given themselves three years until 2022. Practitioners, farmers and scientists are studying agroecological initiatives in seven countries: Brazil, Burkina Faso, Ethiopia, India, Morocco, Senegal and South Africa, in order to promote agroecology to the political authorities of these countries and to intergovernmental bodies.

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