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PROMOTING AGROECOLOGY

The most effective way to achieve sustainable food security and nutrition for all in a changing climate

In 2017, at least 795 million people are facing chronic food insecurity and half of the world's population suffers from malnutrition, while the total agriculture output produces enough calories to feed 12 billion¹.

Small scale farmers produce 80% of our food² but remain the most affected by food and nutrition insecurity and are the least supported by their governments.

Climate change adds a new set of threats to food security: increased frequency of natural disasters, changes in local climate conditions, increased intensity of cyclical meteorological events, accelerated desertification, floods, submersion, heat and cold waves, new pests and diseases. These phenomena will reduce crop productivity and nutrient density of crops. In this context, small scale farmers, infant children and women in particular, and the poorest, are the most vulnerable.



The globalized and industrial food system and the associated intensive agriculture and livestock models have major negative externalities.

This food system doesn't address the joint challenges of food and nutrition security and climate change. Instead of this, it has a great responsibility in environmental degradation, collapse of biodiversity, pressure on natural resources, greenhouse gas emissions. It also has tremendous social impacts such as the loss of traditional and locally adapted know-hows; concentration of wealth, exclusion of the most vulnerable, non-communicable diseases and malnutrition in its different forms³.

Agroecology proposes a comprehensive answer to these challenges and contributes to the realization of the Right to Food by offering a new basis for sustainable food systems, resilient agricultural livelihoods and good nutrition.

Therefore, Action Against Hunger stands for the promotion of agroecology in every policy, strategy, program, commitment or initiatives in the following domains and institutions:

- Food security and nutrition
- Rural and agriculture development
- Climate change adaptation and mitigation

A NEW BASIS FOR FOOD SYSTEMS

Food systems are defined as the ways people organize themselves to obtain and consume their food⁴, including production, transformation, distribution, consumption and waste disposal.

Agroecology is often reduced to a set of agricultural practices but in fact, it should be applied to the whole food system. Agroecology proposes a vision based on a better integration between cities and the countryside, consumers and food producers, a virtuous cycle of food and nutrients from the fork to the plate and back to the field. Agroecology proposes solutions all along the food chain: optimum management of soil organic matter for better fertility and reduced erosion, production of sufficient, safe and nutritious

food, distribution through shorter value chains – both in terms of distance travelled by food items or the number of intermediaries between the producer and the final consumer, and therefore more inclusive and equitable –, better income for farmers, better food at a better price for consumers, improved waste management and composting of organic residues, among others.

These new food systems, designed to be adapted to local conditions and particularities, would be elaborated with a truly rights based approach. Indeed, the rights to adequate food, the rights to land and resources and gender equity are fundamental in food and nutrition issues.

BUILDING RESILIENT LIVELIHOODS

Climate change is a threat to global food security. If nothing is done to adapt, even under a 2°C warming scenario in 2100 compared to average pre-industrial global temperatures, food insecurity could rise up to 90% in the different sub regions of Africa. Likewise, under this “optimistic” scheme, the global agricultural output would shrink, 50% of the world’s population would face temporary food scarcity by 2050⁵, fruit and vegetable decreasing per-capita availability would lead to over 500 000 extra deaths per year by 2080⁶, and the nutrient values of grains would decrease (especially regarding proteins, iron and zinc) due to a higher CO₂ concentration⁷.

In this context, urgent action in agriculture is needed. Agriculture systems must become more resilient to extreme weather events and their adaptive capacity must be improved and strengthened to face the changes in local climatic conditions. However, these changes face two constraints. On the one hand, agricultural, livestock and forestry systems are responsible for the production of almost 24% of global emissions of greenhouse gases (GHG)¹⁵. On the other hand, agricultural systems must also respond to the expected growth in global population and demographic transition and subsequent increasing demand for diverse and nutritious foods.

The question then arises: how can agricultural systems become more resilient and adaptive while reducing GHG emissions and increasing production and diversification of food?

All agro-ecological practices have a common objective: to lay the foundations of a sustainable food and nutrition security



especially via environmentally friendly, economically successful and socially acceptable agricultural practices. Through optimized management and use of soil fertility, increased agrobiodiversity and optimized agro-ecosystems services (see below), agroecology can thus overcome the above mentioned challenges.

For instance, agroecology creates **resilience** by diversifying agricultural production. Indeed, the use of different crops, species and breeds will minimize the risks of complete loss in case of extreme weather events. This diversification also allows the **best use and conservation of available resources**, by exploring all the soil horizons for nutrients and water and by promoting nutrient cycles at farm level with livestock integration and perennial crops (fruit, timber and firewood).

A FEW AGRO-ECOLOGICAL SUCCESSES

- In drought years, organic maize as up to 31% better yields than conventional maize⁹
- A meta-analysis showed organic farming could increase yields by 80% in developing countries⁹
- In case of flooding, plots farmed with agro-ecological practices retain 40% more top soil¹⁰
- “Push-pull” maize system allowed doubling maize and milk production in Kenya¹¹
- The rice-duck system delivered a 20% increase in yield in Bangladesh¹²
- Mixed farming systems can lead to a 25% higher labour income per hectare without increasing environmental pollution¹³
- Small farmer revenues have been increased by 15-60% in Costa Rican organic production systems¹⁴

This diversification of agricultural production also **reduces the dependence of farmers** to off farm inputs, thus **limiting their financial risks** in case of crop failure. Indeed, thanks to win-win plants associations, agro-ecological practices **reduce the need for chemicals (pesticides and fertilizers)**. Also, agro-ecological farming is labour intensive and therefore offers **new jobs opportunities** for on-farm and off-farm activities, linked to the **reduced use of mechanization** and pesticides and the **re-location of value chains in rural areas**. In some contexts, incentives could be needed to enable this.

Last but not least, these practices allow the storage of carbon dioxide in soil organic matter and the drastic reduction of on-farm methane and nitrous oxide emissions. As a reminder, the greenhouse gas impact of those emissions is respectively 25 and 298 times stronger than CO₂ emissions¹⁶. The valorisation

of human and animal workforce and the reduction of chemical fertilizers also reduce the dependence to fossil fuels and the related GHG emissions.

Agroecology is also a movement, involving producers and consumers, aiming at protecting the rights of small scale food producers, promoting autonomy of decision, indigenous know-hows, minimized negative socio-economic impacts of agriculture, technological sovereignty of producers, access to land and other productive resources. Therefore, agroecology is considered as people-centred agriculture.

Simultaneously productive, environment friendly, truly sustainable and a source of stable and resilient livelihoods, agroecology is the best answer to food security, rural employment and climate change challenges.

ACHIEVING NUTRITION FOR ALL

Reaching good nutrition for all is a challenge: about 2 billion people are currently suffering from micronutrient deficiencies, 159 million children under five are affected by stunting and 50 million by wasting and nearly 2 billion people are obese¹⁷. Although stunting is globally decreasing since 2000¹⁸, with uneven progresses between countries, 25.2 million additional children could be under-nourished because of climate change in 2050¹⁹.

A key cause of malnutrition is the gap between nutrient needs and intake. Nutrients are naturally provided by food items; rather it is fresh from the fields or processed. According to IPES FOOD, the industrial food system nurtures malnutrition²⁰. It favours the availability of cheap processed foods with high energy but low micronutrient content (also known as “empty calories”).

While various options are on the table to ensure a sufficient intake of micronutrient in low and middle income countries, most of them focus on a “product-based” approach (fortification, supplementation and biofortification) and ignore the critical need to diversify the diet. These magic bullet solutions cannot respond to the nutrition challenge in the long run, are not accessible to all and reinforce the dependence to food industries and pharmaceutical companies. Instead of that, solutions which sustainably strengthen the capacities of the most vulnerable to reach adequate nutrition should be promoted. Although some situations (forced displacements, lack of iodine in the ground) and populations

(pregnant women, infant children and diseased people) might require complementary solutions, the most integrated and inclusive option to ensure a sufficient intake of micro-nutrient is to diversify food production and consumption. This should also be accompanied with the promotion and dissemination of naturally nutrient-rich and local varieties of crops. For a good nutrition, accessible to all, agriculture and food systems must evolve and provide the complete range of foods needed. In short, **they must become nutrition sensitive**²¹.

By improving yields²², nutritious contents of foods²³ and reducing dependency of farmer toward inputs suppliers, agroecology increases the local availability of nutritious foods at family and market level, and increase farmers’ incomes, thereby strengthening food and nutrition security.

Through its positive impact on income generation, employment, food production, processing, consumption and dietary diversification, agroecology responds to the pre-requisite of nutrition-sensitive agriculture.

Agroecology is therefore the best option to build good nutrition for all. This statement is especially true in the regards of climate change, with higher risks of natural disasters and extreme weather events.

Diversity is a strength, both in the field and in the plate.





PROMOTING AGROECOLOGY THROUGH A PARADIGM CHANGE IN POLICIES AND COMMITMENTS

In order to achieve sustainable Food Security and Nutrition for all in a changing climate, agroecology must be promoted in every public policy, national and international commitment and initiative concerning agriculture, food security and nutrition. Therefore, Action Against Hunger advocates for agroecology in the following frames:

- Food security and nutrition policies, commitments and initiatives: acknowledging the tight relation between agriculture, food security and nutrition, the undeniable role of agriculture in supporting good nutrition, especially through diversification of productions and diet and the need for sustainable agriculture solutions in the context of climate change. Agroecology is the best approach for nutrition sensitive agriculture.
- Rural and agriculture development policies, commitments and initiatives: recognizing the need for agricultural solutions that ensure decent and safe jobs for growing rural populations, strengthen the resilience and climate change adaptation of rural livelihoods, independence and autonomy of farmers for decision making and access to inputs, build strong basis

for rural economies, and feed increasing urban populations. Agroecology offers long lasting and fully sustainable solutions to rural employment, environmental and climate challenges, for today and for the future.

- Climate change adaptation and mitigation policies, commitments and initiatives: promoting farmers' adaptation through agro-ecological practices, promoting agroecology as a movement to strengthen farmers' resilience and adaptation through experience sharing and including objectives of permanent reductions of greenhouse gas emissions in agriculture. Voluntary policies must be designed and budgeted to enable and enhance this transformation.
- Food security, nutrition, agriculture and climate change governance institutions: countries must embrace the triple challenge of agriculture and discuss the best possible options to respond to it. Agroecology is the only pathway to increase food production (quantity and nutritional quality), reduce emissions (permanent and negative) and increase adaptation to the effects of climate change (resilience and adaptive capacity).



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