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Shifting Funding to Agroecology for People, Climate and Nature

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SUMMARY

There are growing calls to transform the current food system in response to hunger, malnutrition, climate change and biodiversity loss. Financial institutions and donors and other actors have tended to focus on increasing productivity and developing global value chains, which has caused great harm to the environment while failing to end hunger, poverty, and inequalities.

This is where agroecology comes in: an alternative vision that reflects a more fundamental and systemic transformation towards fair and sustainable food systems. Millions of farmers, pastoralists and indigenous peoples around the world are already producing food in ways that build on the principles of agroecology. In an enabling policy context, agroecology has proven to achieve robust gains in poverty reduction, food and nutrition security, women and youth empowerment and biodiversity and climate resilience.

A growing number of agencies, research institutions, governments, and donors are adopting policies and developing tools to scale up and scale out agroecology. Yet, agroecology is severely hampered by the quantity and quality of financing available for its development. The organizations, food producers and proponents that are advancing agroecology around the world have little access to public or philanthropic financing or other institutional support. Most finance for agriculture is allocated to conventional agriculture that, while having achieved productivity gains in some places, has been highly uneven and come at great expense to the environment, equity and sustainability.

The solutions being proposed by most funding agencies to address the hunger and climate crises are distinct from agroecology. Approaches like 'climate-smart agriculture' or 'nature-based solutions' address just some aspects of the crisis in the food system and largely re-entrench the inequity and ecological degeneration that is so characteristic of today's food system. In contrast, agroecology explicitly enhances bottom-up processes of development and food system transformation based on the needs, knowledge, priorities and agency of people and nature, rooted in territories.

This policy brief offers a series of considerations and recommendations to increase the quantity and quality of funding for agroecology:

- Funding for agroecology should be underpinned by a **principle of co-governance** where donors are accountable to the most affected. Donors should consider long-term multi-phased support for building agroecology in territories.
- For financial support to be effective in supporting agroecology, a large portion of it needs to be comprised of **small to mid-scale grants through food producer organizations and civil society organizations** who are close to the ground.
- Currently, agroecology is often marginally, or not at all, included in agricultural funding programs. Donors should closely evaluate their funding programs and shift towards **agroecology explicitly as a target of funding**.
- Agroecology transitions are complex social and participatory processes that require adaptability in how plans are developed and implemented. In this context, it is vital that funders **allow for flexibility in spending, activities and in monitoring and evaluation**.
- We recommend that donors **engage in an in-depth and ongoing dialogue with food producer organizations** to examine and increase the quantity and effectiveness of funds that are allocated towards agroecology, and to improve the quality of delivery.



Farmers in Burkina Faso working together to make compost. Credit: ANSD

INTRODUCTION

In the face of worsening condition of hunger and malnutrition, the climate crisis, and dramatic biodiversity loss, the need to transform the way we produce, distribute and consume food is evident. Yet many financial institutions, donors, and other actors are locked into the current system which focuses on increasing productivity and global market opportunities, following a technology-led and largely top-down agricultural development logic. These are the approaches that many actors in the food system point to as the root of the problems we face today.

Agroecology represents an alternative approach that works with nature, foregrounding the vital role that smallholder food producers, peasants, indigenous peoples, and family farmers play in sustainable and just food system. Research on agroecology is revealing how—when properly supported—it can nourish people and the planet, as it enhances yields, boosts agricultural biodiversity, creates ecological resilience, improves soils, cools the planet, and reduces energy and resource use. It has been shown to be highly productive, to provide diverse dietary offerings, and to support the process of community building and women’s empowerment.

This brief introduces agroecology as conceived by food producers’ movements and agroecology researchers, and as embedded in the most recent work of multilateral institutions such as the Food and Agriculture Organization (FAO) of the United Nations and the High Level Panel of Experts (HLPE) on Food Security and Nutrition of the Committee on World Food Security (CFS) (section 1). We review the state of the art on agroecology’s multifunctional benefits (section 2), and how it is different from other approaches (section 3). The last section makes recommendations on how institutions and donors can support its development (section 4). This policy brief contributes to the growing chorus of actors calling for a shift of funding to agroecology (Achterberg and Quiroz, 2021; IPES-Food, 2020; Moeller and Devlaux, 2020; Nyeleni, 2015).



Farmers in Nepal sharing local seed varieties from their community managed seed bank. Credit: RajendraNath Yogi/ActionAid

SECTION I

AGROECOLOGY

Over the past years, agroecology has emerged in the international policy arena as an alternative paradigm for food and farming that can address multiple crises in the food system, contribute to the Sustainable Development Goals (Millennium Institute, 2018), and enable a just climate transition. Agroecology has become a key part of the global response to climate change, while meeting the world's food needs and ensuring no one is left behind (FAO, 2018; HLPE, 2019; IFAD, 2021; IPES-Food, 2018).

Agroecology applies ecological and social concepts and principles to the design and management of food and agricultural systems (Altieri, 2018). It includes practices aimed at mimicking or harnessing complex ecological processes, moving beyond the farm to include food production, distribution, consumption, and waste management.

Historically, although science plays an important role in developing agroecology, the knowledge that underpins agroecology has emerged from the practices of indigenous peoples and smallholders across the world. Agroecology is a scientifically and experientially justified practice of agriculture that (1) is sensitive to the ecosystems in which it takes place and (2) fosters the democratic participation of food producers, putting human rights and agency at the center (De Schutter, 2011). **It is simultaneously a practice, a science, and a social movement.**

In a landmark report, the CFS HLPE (HLPE, 2019) defines agroecology as follows:

“Approaches that favor the use of natural processes, limit the use of purchased inputs, promote closed cycles with minimal negative externalities and stress the importance of local knowledge and participatory processes that develop knowledge and practice through experience, as well as more conventional scientific methods, and address social inequalities. Agroecological approaches recognize that agrifood systems are coupled social–ecological systems from food production to consumption and involve science, practice and a social movement, as well as their holistic integration, to address food and nutritional security.”

As agroecological approaches are adapted to their context, they do not offer a set of prescribed practices. To contribute to a better understanding of the nature of agroecology and facilitate its scaling-up, the FAO has developed ten guiding ‘elements’ (FAO, 2018). Building on this, the CFS HLPE developed a concise, consolidated, and indivisible set of thirteen agroecological principles that are being used by a variety of actors around the world (HLPE, 2019).

BOX 1

FAO’s 10 Elements of Agroecology



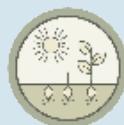
Diversity



Co-creation and
Sharing Knowledge



Synergies



Efficiency



Recycling



Resilience



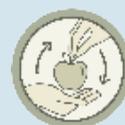
Human and
Social Values



Culture and
Food Traditions



Responsible
Governance



Circular and
Solidarity Economy

HLPE’s

13

**Principles of
Agroecology**

Recycling

Reducing the use of inputs

Soil health

Animal health and welfare

Biodiversity

Synergy (managing interactions)

Economic diversification

Co-creation of knowledge (embracing local knowledge and global science)

Social values and diets

Fairness

Connectivity

Land and natural resource governance

Participation

TECHNICAL AND SOCIO-POLITICAL DIMENSIONS OF AGROECOLOGY

The most well-known characteristic of agroecological approaches is that they **harness, maintain and enhance biological and ecological processes in agricultural production**. Going beyond the level of the single farm to encompass the entire food system, agroecology has also been referred to as “the ecology of food systems” (Francis et al., 2003). While the general elements and principles of agroecology (box 1) can be applied anywhere, the adaptation of specific practices to the local environmental and social context is fundamental to agroecology.

Agroecological practices often revolve around building healthy soils rich in organic matter; conserving soil and water; recycling of nutrients, energy and waste; and the use of a variety of species, crop varieties and livestock breeds. Concrete, widely used agroecological practices include: intercropping, agroforestry, use of (green) manure, mulching, water harvesting, and composting. Through these practices, farmers reduce the use of purchased external inputs (including fossil fuels and agrochemicals) and create more diverse, resilient, and productive agroecosystems.

The principle of diversity is critical: the integration of different production systems, with a variety of crops and breeds. In contrast to the uniformity, specialization, and monocultures that are often promoted in industrial agriculture, diversification strengthens soil fertility, biodiversity, water retention, and pest management. Diversification also enhances community resilience against the impacts of climate change and volatile prices, especially in combination with the development and use of different markets and different types of knowledge.

Going far beyond technical change, agroecology emphasizes social and political aspects that are needed for food system transformation (Anderson et al., 2019). In the words of FAO (2018): “Rather than tweaking the practices of unsustainable agricultural systems, agroecology seeks to transform food and agricultural systems, addressing the root causes of problems in an integrated way and providing holistic and long-term solutions. This includes an explicit focus on social and economic dimensions of food systems.”

Using nature instead of chemicals, **agroecology makes producers less dependent on external inputs**, which is a major shift away from the dominant agricultural model that promotes top-down technical packages of fertilizer and pesticides. As agroecology grows with diversification, collaboration, local knowledge, and local markets, it also strengthens social organization in the territory (see box 2 for explanation of territory).

BOX 2

TERRITORIES AND AGROECOLOGY

The territorial perspective has shown to be highly relevant for agroecological transformations (Anderson et al. 2021). In this case, territory refers to place *and* people, including the culture and knowledge that has been built in relation to the biological and ecological processes of living nature. Territory is important because it represents a local dimension that includes communities and traditions, as well as the natural resource base. Territories are not (only) delineated by administrative boundaries. Rather, they are generally defined by a range of circumstances and context-specific factors: spatial, geophysical and environmental conditions, political and administrative structures, and cultural identities. Key aspects of a territorial approach include the valorization of endogenous resources, inter-sectoral development, the recognition and celebration of local identities, self-control of “development processes,” and solidarity and democracy (Wezel et al. 2015). The territory is an important interface between top-down provisioning by government programs and investment and the democratic expression of citizens’ needs, aspirations, and demands—it is precisely here that the two can mesh through issues of power and governance (Van der Ploeg 2018).



Agroecological farmers market. Credit: REDSAG



Farmers inspecting soil samples. Credit: REDSAG

In contrast to top-down transfer of knowledge and technology, **agroecology is based on the co-creation of knowledge**, combining science with the traditional, practical, and local knowledge of producers and indigenous peoples. It fosters co-learning among researchers and practitioners, as well as the horizontal spread of knowledge from farmer to farmer or among other actors in the food system. The major benefit of this dynamic is that it allows for the development and innovation of practices and technology that are locally suitable and appropriate. Finally, even though agroecological products can be sold on the global markets, **agroecology fosters the development of new markets** and innovative systems for economic exchange that are created through connections between rural and urban people and other actors in a territory. This provides producers with a better price (as intermediaries can largely be avoided) and consumers with fresher produce, while providing greater mutual understanding, transparency, and control to both and supporting the development of trust-based networks. Mainstream food markets tend to favor large volumes and standardization and exclude most agroecological producers.

In these processes, producers and communities are the key agents of change. In fact, agroecology centralizes the concept of 'agency': the capacity of individuals or communities to define their desired food systems and nutritional outcomes, and to make strategic life choices in securing them (HLPE, 2019). In other words, agroecology enhances people's participation in decision-making around how the food they eat is produced, processed, stored, transported, exchanged, and consumed - what has often been referred to as 'food sovereignty'.

Responding to this need, agroecology emerges as a transformative approach that centralizes food producers, putting governance, power, and democracy at the center (Anderson et al., 2021a).

In 2015, international social movements formulated this nature of agroecology as follows:

"The real solutions to the crises of the climate, malnutrition, etc., will not come from conforming to the industrial model. We must transform it and build our own local food systems that create new rural-urban links, based on truly agroecological food production by peasants, artisanal fishers, pastoralists, indigenous peoples, urban farmers, etc. We cannot allow agroecology to be a tool of the industrial food production model: we see it as the essential alternative to that model, and as the means of transforming how we produce and consume food into something better for humanity and our Mother Earth" (Nyeleni, 2015).

They highlight that a strong connection exists between agroecology, food sovereignty, and the right to food.

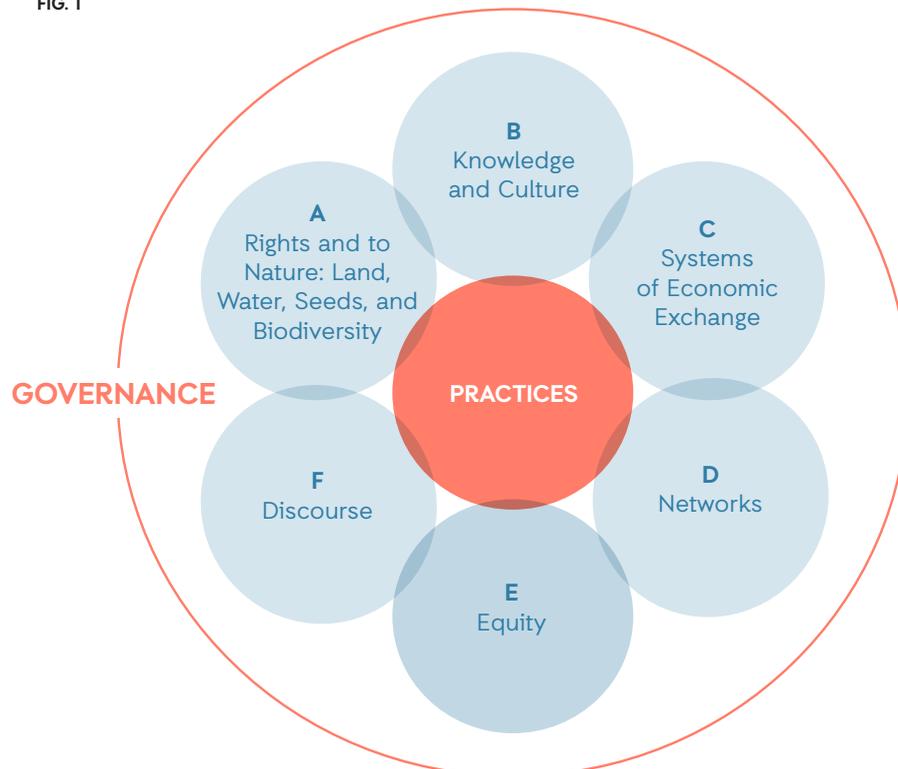
Agroecology also addresses the need for socially equitable food systems within which people can decide what they eat and how and where it is produced. It is underpinned by efforts for democratization, popular education, transformations in governance, and participation (Pimbert et al., 2021). Special emphasis is placed on the rights, knowledge, and agency of women and young people: “Youth, together with women, provide one of the two principle social bases for the evolution of agroecology. Agroecology can provide a radical space for young people to contribute to the social and ecological transformation that is underway in many of our societies. (...) Agroecology must create a territorial and social dynamic that creates opportunities for rural youth and values women’s leadership.” (Nyeleni, 2015). In the Global South especially, young people and women face specific challenges that agroecology can help to address, such as meaningful employment in rural areas, a greater role in decision making, developing creativity and leadership, and providing nutritious food for the family without the use of harmful pesticides (Elver Hilal, 2017).

Importantly, no definitive set of practices can be defined as agroecological. Rather, initiatives can be classified along a spectrum and qualified as more or less agroecological, depending on the extent to which agroecological principles (Box 1) are locally applied and a food systems approach is maintained.

Concretely, understanding whether an initiative can be considered part of agroecological transitions, comes down to assessing the extent to which an initiative: (1) relies on ecological processes as opposed to purchased inputs; (2) is equitable, environmentally friendly, locally adapted and controlled; and (3) adopts a systems approach embracing management of interactions among components, rather than focusing only on specific technologies (HLPE, 2019). When only one of the three aspects is addressed, an initiative is unlikely to contribute to an agroecological transformation of food systems.

These points clearly show that agroecology transitions are about much more than the usual focus on supporting farmers with new technologies or new markets, but require a transformation of the very context within which farmers are embedded. Anderson et al. (2021) articulate how agroecology transformations involve a process of continuous transition and transformation, which takes place within and across different ‘domains’ of the food system (figure 1). When these domains start to overlap (for example in the case that an organization of producers gains secure access to land and teams up with consumers to build new markets), the agroecological pathway is strengthened.

FIG. 1





Mavis, a Zimbabwean farmer, and her harvests of drought resilient small grain crops. Credit: ActionAid

SECTION II

MORE THAN JUST YIELD: THE MULTI-FUNCTIONAL BENEFITS OF AGROECOLOGY

Agroecology offers many benefits, from achieving higher productivity and profitability, to improving nutrition, enhancing biodiversity, addressing climate mitigation and adaptation, and reducing inequity (Anderson et al., 2021a). Moreover, it provides for dignified livelihoods, as expressed by organizations of farmers, pastoralists, indigenous peoples, and fisherfolk: “Our diverse forms of smallholder food production based on agroecology generate local knowledge, promote social justice, nurture identity and culture, and strengthen the economic viability of rural areas. Smallholders defend our dignity when we choose to produce in an agroecological way” (Nyeleni, 2015).

AGRICULTURAL PRODUCTIVITY AND PROFITABILITY

The idea that agroecology and other forms of alternative agriculture can “feed the world” is hotly debated. Can it match the yields of industrial agriculture? And might lower yields ultimately lead to further expansion of agriculture onto marginal lands, deforestation, and environmental destruction (Kremen, 2015)? While there has historically been a gap between the yields of conventional (high-external-input) agriculture and organic farming, this gap has often been overstated, especially when considering (1) the strong performance of highly developed agroecological farming systems and (2) that agroecology produces high yields (especially over time) of a *variety* of crops, while also generating many other benefits that conventional agriculture does not (see next section). A growing body of research indicates that—when appropriately supported and in the right economic conditions—it can outperform conventional systems of agricultural production, especially in dryland areas but also in many other contexts (Ponisio et al., 2015; Pretty et al., 2003).

Agroecology not only allows for comparable or even higher yields than conventional agriculture, but it also creates employment and considerably improves farmers’ incomes as well as total income generated by the agricultural sector at regional and national levels. As a system that minimizes expensive external inputs and maximizes farm- and community-generated inputs, it can decrease the costs and thus increase the profitability of farming, bolstering the livelihoods of smallholder farmers. Agroecology aims to reduce drudgery, and often requires more labor and knowledge to achieve these benefits over industrial agriculture. These outcomes are thus directly related to the focus on food producer agency in agroecology, which allows farmers to regain control over their farming inputs, namely seed, fertilizer, land, and labor (Madsen et al., 2021).

There is no conclusive scientific basis that proves that industrial agriculture can feed the world. Yet, the narrative that only high-input farming can feed the world is pervasive. It is incontrovertible that the agrifood system we currently have is not “feeding the world,” despite generating much more food than is needed while also creating many social and ecological ills (or ‘externalities’) such as environmental degradation (IPCC, 2019), climate change, unequal access, and increased hunger and malnutrition (SOFI 2021). The incessant drive to increase yields does not decrease hunger on the whole. Instead, political shifts are required around entitlement, decision-making, and rights that determine if and how people are able to nourish themselves.

It is proven that under the right conditions, agroecology can increase productivity and profitability of farms. But, just as importantly, agroecology has proven to increase the ability of farmers and communities to nourish themselves. This is critical, because many of the people suffering from hunger are rural people, smallholders and rural workers, and agroecology can be especially beneficial in this context. Thus, evidence has shown that while agroecology is more knowledge- and labor-intensive, it can be more productive. Yet a full understanding of the productivity performance of agroecology is hampered by a lack of proper assessment tools (Ricciardi et al., 2018).

NOURISHING PEOPLE AND COMMUNITY

Beyond productivity, agroecological practices have been found to contribute to dietary diversity and nutrition security through providing diverse dietary offerings for both subsistence (home consumption) and local food markets, and providing diverse forms of income (Jones, 2017; Pimbert and Lemke, 2018). With rising rates of malnutrition and hunger on the one hand, and obesity and diet related diseases on the other, agroecology provides an important way to tackle these public health problems. Practices such as crop diversification, agroforestry, mixed crop-livestock systems, and farmer-to-farmer networking allow farms to increase their food and nutrition security outcomes. Agroecology also creates different forms of agricultural biodiversity, which is utilized by different people in different seasons and contributes to dietary diversity and resilience.

Numerous studies exemplify in more detail how diversified farming systems enhance household dietary diversity and nutrition. For example, by planting a range of crops harvested at different times, thirty Nicaraguan

households had more food available throughout the year (Bliss, 2017). In northern Malawi, legume intercropping, along with a participatory approach sensitive to cultural values and gender equality, enhanced both food and nutritional security (Nyantakyi-Frimpong et al., 2016). In another example, agroecological farming systems improved nutrition in poor households in Ecuador through providing food for subsistence, the generation of income, and the empowerment of women (Deaconu et al., 2019). In Mexico, body mass index improved in 390 households using the agroecological milpa system (intercropping of maize, beans and squash) (Becerril, 2013). As discussed below, agroecological farming systems have been found to be more resilient to climate change and thus in the fight against crisis-related hunger.

There is strong evidence that food sovereignty and the right to food contribute to the four pillars of food security and nutrition—Availability, Access, Utilization and Stability—as well as a fifth pillar: agency, or the empowerment of citizens (Sampson et al., 2021). The study also finds, “narrow rights-based policies or interventions are insufficient to overcome larger structural barriers to realizing FSN, such as inequitable land policy or discrimination based on race, gender or class.”



Farmer sharing her agroecological practices in Senegal. Credit: Agrécol

CLIMATE CHANGE MITIGATION, ADAPTATION AND RESILIENCE

The potential for agroecology to stabilize food systems and reduce their contribution to climate change has long been recognized (Tomich et al., 2011) and is increasingly gaining attention (IPCC, 2019; Leippert et al., 2020; Snapp S et al., 2021).

Mitigation: Agroecological systems, and their emphasis on harnessing ecosystem functions (such as biodiversity) to replace external inputs, are at their core less dependent on synthetic fertilizers, synthetic pesticides, fossil fuels, and other inputs that have high contributions to greenhouse gas (GHG) emissions. There are several ways that agroecology can reduce the GHG contributions of agriculture and food systems (Lin et al., 2011). First, agroecology can decrease the materials used and amounts of GHGs absorbed or emitted (Also see: Niggli et al., 2008). Practices such as the use of organic and green manures, intercropping, no-tillage, and tree planting on farms or in hedges boost organic matter in the soil, which enhances its carbon-sequestration capacity (Lin et al., 2011). Agroecology also decreases the use of nitrous oxide emitting synthetic fertilizer (Snapp S et al., 2021) and decreases the intensity and thus impact of livestock production and pasture management.

Adaptation and Resilience: There is growing evidence and awareness that agroecological strategies can also help farmers adapt to climate change—an urgent task in the context of the quickening pace of the current climate crisis. Crop diversification, the maintenance of local genetic diversity, crop-animal integration, maintaining soil health, water conservation, and agroforestry, for example, can lay the foundations for a system that is more resilient to shocks and stresses (Brescia, 2017; HLPE, 2019; Morris et al., 2016; Snapp S et al., 2021). Resilience increases through these agroecological practices, because they serve to regulate different aspects of ecosystems, (e.g. pests, water, nutrients), buffer extreme temperatures (agroforestry), and support ecosystem services (soil fertility and biodiversity).

Climate resilience and adaptation is not only strengthened through agroecological practices but goes hand-in-hand with the social aspects of agroecology. Social organization and cooperation reduce risk and improve social and economic wellbeing (Owen, 2020). This became clear among Ecuador’s highland farming families, where the promotion of agroecology coupled with more gender equity improved their capacity to adapt to climate change and improved socioeconomic conditions for rural communities (Cáceres-Arteaga et al., 2020).

Over the past two decades, observations of agricultural performance and recovery after hurricanes, droughts, and other extreme climate-related events have revealed that farms with greater biodiversity are more resilient (Mijatović et al., 2013). Agroecological farms are more resilient to natural disasters such as hurricanes than conventional farms when they are embedded in a complex landscape matrix, are high in biodiversity, employ cropping systems with organic matter-rich soils, and deploy water conservation and harvesting techniques (Altieri et al., 2015). Here too, agroecology, and especially its emphasis on robust and resilient networks of mutual aid, have been found to play an important role in social recovery processes such as peace-building and collective responses to disaster—an important aspect of building climate resilience (McAllister and Wright, 2019; McCune et al., 2019).

ENHANCING AGRICULTURAL BIODIVERSITY

Agriculture occupies more than one-third of the global landmass, and is implicated in 62% of all threatened species globally (Maxwell et al., 2016). Biodiversity enhances ecosystem functioning and provisioning of ecosystem services, making the agrosystem more resilient against various types and degrees of shocks (Lin, 2011).

A 2021 United Nations paper argues that the global food system “is the primary driver of biodiversity loss, with agriculture alone being the identified threat to 24,000 of the 28,000 (86%) species at risk of extinction” (Benton et al., 2021). Ironically, the status quo in agriculture is eroding the rich biodiversity that forms the basis of our food system. Agricultural biodiversity “provides fiber, feed, fuel, pharmaceuticals, and materials for shelter; it is a vital subset of biodiversity that includes the seeds, breeds, and ecosystems within which food and other goods are grown and harvested by people.” (Mulvaney, 2020 p. 1).

Fortunately, multitudes of farmers, pastoralists, fishers, forest dwellers, and indigenous peoples in both the Global North and South are deploying agroecological principles in ways that enhance biodiversity (FAO, 2019; Pimbert and Borrini-Feyerabend, 2019). In agroecology, biodiversity is effectively harnessed to improve production, for instance through the use of heterogenous seeds (e.g. landraces) and breeds, methods such as intercropping, mixed farming, agroforestry, and agro-silvo-pastoral systems. These practices are using, sustaining, and improving biodiversity from farm plots to entire landscapes or territories (Pimbert and Borrini-Feyerabend, 2019). Agroecological farming and food systems at all scales are both dependent on, and further enhance, agricultural biodiversity through design based on ecological principles.

The recent UN State of the World’s Biodiversity for Food and Agriculture (FAO, 2019) recognizes this and emphasizes the immense contribution of knowledge, skills, innovations, and practices of food producers, particularly small-scale farmers, to the conservation, development, and sustainable use of wild and cultivated

biodiversity and related ecosystem functions. The local and traditional knowledge about the properties and dynamic roles of plants, animals, and ecological processes held by food producers and especially indigenous peoples is both the foundation of agroecology and crucial to enhancing biodiversity.

ADDRESSING INEQUITY AND IMPROVING SOCIAL CONDITIONS

The impact of agroecological practices is greatest when they are underpinned by collective, community, and territorial organization. Examples are farmer associations, food policy councils, or peasant-to-peasant learning networks. In agroecology, which leans so heavily on knowledge and social learning, these networks are critical. In many places, especially where public extension services are scarce and where public spending prioritizes conventional agriculture, farmers and their organizations self-organize for learning, cooperation, and mutual support. This creates further resilience by building local capacity and enriching social cohesion. It provides bottom-up forms of learning and innovation that are often more fair, horizontal, and enhance diversity (Rosset et al., 2019; Val et al., 2019).

In turn, the coordination of local, agroecological practice at all scales—from farm to watershed to the broader landscape—tends to strengthen durable bonds of trust and cooperation (Wezel et al., 2015). Longstanding evidence shows that it has led to robust social relations between farmers and other actors in territories that can be deployed in times of crisis. For example, pre-existing collectives of agroecological brigades traveled around to repair farms in response to Hurricane Maria which devastated Puerto Rico in 2017 (McCune et al., 2019).

These forms of social organization in agroecology also allow food producers and their organizations to gain collective voice and advance their interests in local, territorial, national, and international processes and policies. Indeed, it is this vital function—of offering political agency and outcomes for farmers—that deeply differentiates agroecology from depoliticized and technocratic approaches such as climate-smart agriculture (Pimbert, 2015).

Agroecology also strengthens gender equity—and vice versa. Because learning and knowledge-sharing are at the heart of agroecology, it can provide spaces for women to work in solidarity and gain livelihoods, income, and agency at productive, reproductive, and community levels (Khadse, 2017). In many documented cases, participating in agroecological networks helped women rise out of sometimes violent situations of isolation, and affirm their own identity and knowledge (Galvão Freire, 2018). This potential is tied to agroecology's emphasis on local and diversified knowledge, skills, and tasks; input-independence; and co-creation. In fact, since many agroecology initiatives are led by women, their participation in decision-making at the household and community level is often both an essential prerequisite for, and a result of, agroecological innovation (Lopes and Jomalinas, 2011). Indeed, improved gender equality and the empowerment of rural women can drive various aspects of agroecology, including improved nutrition and increased crop and genetic diversity, among others (De Schutter and Campeau, 2018). However, to ensure agroecology does not provide women with the 'double burden' of both productive *and* reproductive work, the recognition of women's rights is required as well as the implementation of explicit empowerment strategies. See, for example, ActionAid's POWER Project (ActionAid, 2021).



Women farmers training other women farmers. Credit: AFSA

SECTION III

SEPARATING AGROECOLOGY FROM THE PACK

Agroecology encompasses much more than tweaking farming practices, supporting a particular sector, investing in technology, or making markets available to food producers. It puts the interests of the most affected people (food producers, rural peoples, citizens) and the planet first. In agroecology, the voice and agency of family farmers and other food producers is considered the basis for redesigning farming and food systems for ecological and social regeneration. This bottom-up approach is fundamentally different from the starting point of most other approaches to agricultural development. Even if these approaches might include some agroecological components, there are two major differences. First, they tend to adopt top-down approaches and as a result often have adverse effects for people on the ground. The other difference is that agroecology provides a systems approach which allows for more fundamental change beyond the promotion of new technologies that ignore root causes of the current problems, including issues of access, control, and agency.

In this context, there is a risk that agroecology is promoted and implemented alongside conventional agriculture in a narrow way that focuses only on technological change. Often, this is far removed from the practices and the aspirations of indigenous peoples and food producers, paving the way for ineffective (or even contradictory) projects and policies that operate within an outdated overall development framework (see Box 3).

TOP-DOWN REDUCTIONIST SOLUTIONS VS. AGROECOLOGY: EXAMPLE “ONE COUNTRY—ONE PRIORITY PRODUCT”

The UN Global Action (GA) on Green Development of Special Agro-Products (SAPs), themed as “One Country—One Commodity” (OCOC) program, is an example of a top-down approach that is highly contradictory to agroecology. It appears to have similar objectives: to create a “MORE efficient, inclusive, resilient, and sustainable agri-food system.” The program encourages countries to focus on a single product (e.g vanilla, saffron, sea cucumbers or mangoes) that has a unique “national or cultural heritage, flavor or nutritional content, unique methods of producing or processing,” in order to produce it in greater quantity and to sell to domestic and international markets. However, any approach that promotes monocultures can be considered as opposite to agroecology’s holistic and integrated approach. Funding and programs that adopt such reductionist, market-oriented approaches can undermine the rich biological and cultural diversity that is at the heart of agroecology. While the SAP example is at a national level, this same problematic occurs in the ‘one-village, one product approach’, which is popular in Asia (see Meek and Anderson, 2020 for one example).

Concepts such as sustainable intensification of production systems or climate-smart agriculture start from the premise that, to address future challenges, all that is needed is to substantially increase productivity per unit of land in a ‘sustainable’ manner. These approaches focus on improving availability, stability and resource efficiency (HLPE, 2019), assuming that by themselves they will strengthen the position of farmers, contribute to better nutrition, or increase resilience. But this thinking lacks a deeper understanding of the root causes of hunger and climate change. Indeed, there is growing agreement that transformation requires a systems approach that focuses not only on technical and practical changes but that also addresses the social and political dimensions of change (Gliessman, 2016; HLPE, 2019; IPES-Food, 2016). As we have seen above, agroecology offers this vital systems approach.

Next, we review some of the most current approaches to sustainability in agriculture, and how they differ from agroecology.



Agroecological vegetable production in Cambodia.
Credit: Krong Chanthou/ActionAid



Demonstration plot in front of the Agroecology School in Bangladesh. Credit: ActionAid

NATURE-BASED SOLUTIONS

Nature-based solutions have been defined as “actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits” (IUCN).

Nature-based solutions have risen to prominence in policy discourse on sustainability, yet often lack conceptual clarity or a normative position, thus allowing almost any practice, technology, etc., that gestures towards nature to be labeled “nature-based.”

More recently, the U.N. has adopted the language of ‘nature-positive solutions.’ Nature-positive solutions are even more vague than nature-based solutions, and could include any practice, technology or intervention that could be in any way construed as positively impacting some aspect of nature, while obscuring the often damaging wider impacts of technological innovations (including the social dimensions). Thus, this language fails to point at the need for food system transformation and address root causes (Cousins, 2021).

In this ‘big tent’ approach of nature-positive solutions, the transformative elements of agroecology are ignored in favor of less disruptive ‘solutions.’ Moreover, there are grounded fears that nature-based solutions will create carbon offset schemes, monoculture tree plantations and new gene technologies, which do not reduce emissions but are likely to harm indigenous peoples, farmers, and many other communities by promoting intensive agriculture, financialization of nature, and further dispossession of land. (Chandrasekaran et al. 2021, TWN and ACB 2020).

CLIMATE-SMART AGRICULTURE

Climate-Smart Agriculture is an umbrella for approaches that seek to increase productivity, while enhancing resilience (adaptation), reducing/removing greenhouse gas emissions (mitigation), and achieving national food security and development goals (Lipper et al., 2014). In Climate-Smart Agriculture, agroecological practices are presented as one component among other more mainstream technologies of industrial farming.

Along with environmentally friendly agroforestry and intercropping practices, Climate-Smart Agriculture also embraces and promotes an eclectic mix of herbicide-tolerant crops, insecticides and fungicides, genetically modified seeds and genetically engineered livestock and fish, proprietary technologies and patents on seeds, as well as livestock factory farming, large scale industrial monocultures and biofuel plantations. This means that Climate-Smart Agriculture does not exclude practices and technologies that can undermine, or are incompatible with, agroecological approaches and that in the long-term tend to dispossess rural people and cause long term damage to planetary and human health (Anderson and Maughan, 2021; Wallace, 2016).

Climate-Smart Agriculture represents a continuation of business-as-usual industrial agriculture in which farmers are increasingly dependent on agrichemical corporations for external inputs and global commodity markets for the sale of their farm produce (Pimbert, 2015). This model is based on uniformity, centralization, control and the expansion of global markets—including new carbon markets. Agrichemical corporations and their lobby groups are strongly represented in the major alliances and initiatives promoting Climate-Smart Agriculture today: the World Business Council for Sustainable Development’s Low Carbon Technology Partnerships Initiative (LCTPi) has identified it as a priority area, and involves companies like Monsanto, DuPont, Dow, Walmart, PepsiCo, Kellogg’s, Coca-Cola and Unilever. In today’s competitive world, these companies are forced to prioritize profits over equity and sustainability. While some short-term gains can be made, Climate-Smart Agriculture leaves an unsustainable and unjust corporate-led development model intact.

SUSTAINABLE INTENSIFICATION

Sustainable Intensification is based on a land-sparing model of environmental conservation, whereby it focuses on the production of more food on less land, thereby freeing up previously cultivated land for the conservation of nature. To this end, it uses the 'best' available technologies and inputs to maximize yield in largely monocultural production systems. It seeks to enhance productivity while 'sparing' land, for example to avoid conversion of forests (Pretty et al., 2018).

Sustainable Intensification is often associated with an increased use of energy, fertilizer inputs, consolidation of farming (i.e. bigger farms), and the replacement of people with technology and machines. It contrasts sharply with agroecology, which is based on a land-sharing model where a holistic approach to rural development and land use incorporates environmental, human, and agricultural elements into a living landscape (Mockshell and Kamanda, 2017).

Recently, precision agriculture has become a key component of Sustainable Intensification, involving a series of technologies that allow the application of water, nutrients, and pesticides only to the places and at the quantities and times they are required, thereby optimizing the use of inputs. This technology is, however, not available to all farmers and perpetuates the same dependence of farmers on external knowledge, input, and technology, maintaining a dynamic of North-South technology transfer that undermines local knowledge development and use (Pimbert, 2018).

CONSERVATION AGRICULTURE

Conservation Agriculture is a strategy to restore soil productivity through increased water and nutrient use efficiencies. It revolves around three foundational practices: no-tillage (or minimal soil disturbance), the maintenance of a permanent organic soil cover, and crop rotation. Because Conservation Agriculture relies on natural biological processes and keeps the use of external inputs to a minimum, it contributes to the protection and expansion of biodiversity in the agricultural system.

Conservation Agriculture is often prescribed as a package, without proper adaptation to local circumstances (Tittonell et al., 2012). Farmers' engagement in designing and implementing locally suited practices is often low or absent. Over the past 10 years Conservation Agriculture has been promoted by external actors among smallholder farmers in dryland areas, often with disappointing results and limited uptake (Giller et al., 2015).

Agroecology may include some of the practices of conservation agriculture, but their similarities are only minor otherwise. In contrast to Conservation Agriculture, agroecology relies heavily on farmer and indigenous peoples' knowledge of the local context, history, and environment, who use it to adapt practices to local needs and possibilities. What makes agroecology successful is that it typically spreads through horizontal processes from farmer to farmer and community to community, sometimes enriched with external or scientific insights. As much as possible, agroecology keeps ownership and agency with the communities. Another difference is that Conservation Agriculture is focused on the three production practices, while agroecology is geared at a transformation of the wider food system.

REGENERATIVE AGRICULTURE

Regenerative agriculture aims to improve and restore highly degraded soil, simultaneously enhancing the quality of water and vegetation. It seeks to recuperate biodiversity, soil, water, and nutrient cycles (Rhodes, 2017). Regenerative agriculture is a much more holistic approach than industrial agriculture and may have the most resonance with agroecology among the concepts mentioned here. However, its interpretation by many actors is often limited to the replacement of external inputs. The approach does not necessarily represent a coherent political framework or vision for transformation beyond farm boundaries to the broader social, economic, and political aspects of food systems (Jonas, 2021). In this context, many of the multinational agri-food corporations have recently begun to promote regenerative agriculture (e.g. a consortium of Nestlé, Unilever, Kellogg, and McCain Foods), as its formulation is increasingly viewed as compatible with a corporate-led, centralized approach.

It becomes clear that agroecology uniquely emphasizes fostering diversity and resilience alongside social and political transformation. It seeks to improve ecological and human health while addressing issues of equity and governance. Agroecology goes much further than a focus on agricultural production alone: it questions the structure of the entire food system because of its impact on climate, nature, and people.

In an ironic context where many people who face food insecurity are based in rural areas and are smallholder farmers, agroecology is a viable solution to resolve hunger and malnutrition. It promotes reliance on accessible and locally available resources, reduces dependence on external and costly inputs and improves autonomy, enhances local knowledge and innovations as well as territorial markets, promotes diversified diets, and represents employment opportunities for many young people. In contrast to other 'solutions', agroecology seeks to reduce dependence on corporate suppliers of external inputs and distant global commodity markets and builds on and with the agency of food producers. Many of the actions taken under the auspices of mainstream solutions in fact undermine agroecology and expand an agricultural model that impoverishes small-scale farmers and ignores the central role of people as vital stewards of food production and nature.

THE DANGERS OF CO-EXISTENCE AND CO-OPTATION

There may be some overlap between practices in these different concepts and agroecology. For example, no-tillage might be a practice in climate-smart agriculture, regenerative agriculture, and agroecology. But the fundamental tenet of agroecology is that it is a bottom-up process. Agroecology explicitly centralizes and promotes the ecological, social, and economic knowledge and agency of indigenous peoples, peasants, and other small-scale food producers. This is at the heart of agroecology's well-developed theory of change, through horizontal knowledge sharing, empowering farmers and their communities to learn from and with each other and with nature, rather than relying on external experts for knowledge or other resources. Agroecology offers genuine political strength and capacity for policy reform as well as bottom-up food system transformation.

This is in stark contrast with almost all the other approaches. Agroecology is thus not interchangeable with them, nor can they easily coexist. While some concepts claim to include agroecology, this often refers to least transformative elements (those that retain the status quo) and focus on the fact that there are shared practices between agroecology and climate-smart agriculture, conservation agriculture, etc. Focusing on the technical aspects of agroecology as well as lumping agroecology in as one of many technical solutions or 'choices in the toolbox' disregards the central principle of agency, sidelining and neutralizing the transformative aspects of agroecology (Alonso-Fradejas et al., 2020; Anderson and Maughan, 2021). For many supporters of agroecology, resistance to the process of 'co-optation' is part of their active role in promoting agroecology (Alonso-Fradejas et al., 2020).



Indigenous Maya farmers with their traditional crops. Credit: REDSAG

SECTION IV

FINANCING AGROECOLOGY: A NEW AGENDA

A field of research is blossoming on the ways that institutions and donors can effectively support agroecology transitions (Achterberg and Quiroz, 2021; Anderson et al., 2021b; IPES-Food, 2020). These studies conclude that, because the nature of agroecology is so different from other approaches, supporting it also requires fundamentally different ways of allocating and delivering funding. In this context, it is critically important for donors to continuously evaluate their own portfolio to understand what proportion of funds are allocated to agroecology on the one hand, and to what extent the quality of the delivery of funds is actually supportive of agroecology. Below, we offer a series of considerations and recommendations to increase the quantity and quality of funding for agroecology.

HOW IS FUNDING DELIVERED?

*Funding for agroecology should be underpinned by a **principle of co-governance** where donors are accountable to the most affected. Donors should consider long-term multi-phased support for building agroecology in territories.*

This involves establishing participatory and multi-stakeholder governance of funding agencies, donor organizations, funding stream decision making and projects. There must be genuine participation of food producers—and more specifically of women food producers—and their organizations in the design and implementation of funding decisions. This can be through program advisory committees, or by having donors and communities on governing and decision-making bodies. Where external experts are involved in decision-making, donors should ensure they have knowledge of agroecology and rights-based approaches and be sensitive to bottom-up, participatory, and transdisciplinary approaches. One effective approach adopted in some contexts is to establish ‘revolving funds’ where food producers and their organizations have a pot of money they can re-grant. Finally, processes of food system transformation take place over long periods of time and require long-term commitments from donors to work with organizations and networks seeking transformation in their territories.

WHO GETS FUNDED?

*For financial support to be effective in supporting agroecology, a large portion of it needs to be comprised of **small to mid-scale grants through food producer organizations and civil society organizations** who are close to the ground.*

Smaller grants will allow for control over decision-making and access to funds to sit with those best able to identify effective strategies. The bigger grants that are often made through large funding programs are mostly unsuitable for the scale and nature of agroecology initiatives and projects. In contrast, **agroecological transitions are best enabled through funding mechanisms that enable the agency of food producers and their organizations** where other actors (policymakers, etc.) are the ‘supporting cast.’ To this end, funding should explicitly aim to strengthen farmer organizations and provide funding directly to them to manage their own initiatives—especially organizations led by women, youth, and indigenous peoples. It is important to pay particular attention to power dynamics between actors and within communities to ensure that equity (including gender equity) and culturally appropriate change methodologies are applied.

WHAT GETS FUNDED?

*Currently, agroecology is often marginally, or not at all, included in agricultural funding programs. Donors should **explicitly identify agroecology as a target of funding**.*

The 13 principles of agroecology (box 1) can be a useful framework for allocating funds for rural and agricultural development. This serves to ensure that projects center the ecological, social, cultural and political dimensions of agroecology. In a transition period, or as an alternative, special funds could be set aside for projects and programs that focus on agroecology. Taking the 13 principles as a starting point means that the projects that are supported should center food producers and their representatives as the protagonists of change. Where farm-level support is concerned, it should be oriented towards production system re-design, rather than only increasing efficiency, input substitution, or applying one new technology.

In addition, to be considered eligible for support, farm-level efforts should be combined with efforts to transform the context within which farms operate and connect to wider processes of food system change. Transitions at farm level should be integrated into broader socio-cultural, economic, and political process



Agroecological farm in Rwanda. Credit: Solange/ActionAid



Young people learning about composting techniques. Credit: AFSA

of transformation and civil society organizing at the local and territorial levels. This includes focusing on the social, networking, and learning processes that are vital to long-term transformation, yet are often undervalued. Examples include: dialogues; awareness raising; knowledge sharing exchanges; strengthening peasants, women's and farmers' organizations; cooperative structures; building synergies in funding between research, movements and practice; agroecological education through agroecology hubs; working with other actors for the construction of 'nested' markets and channels for agroecological produce; supporting communities of practice and agroecology schools; and investing in intergenerational, intersectional and intercultural processes.

Finally, all projects that may be supported should be evaluated through an equity lens. Donors should ensure that support goes to initiatives that explicitly address inequity related to gender, class, caste, disability, ethnicity, and other dimensions of difference. Failing to do so makes any project highly likely to exacerbate inequity. In summary, funding agroecology requires that funding programs target multiple domains of transformation (figure 1) and take a systemic and integrated approach.

HOW ARE PROJECTS MONITORED AND EVALUATED?

*Agroecology transitions are complex social and participatory processes that require adaptability in how plans are developed and implemented. In this context, it is vital that funders **allow for flexibility in spending, activities and monitoring/evaluation.***

Flexibility throughout the granting process ensures grantees can respond and adapt to emerging issues and opportunities. Many current monitoring and evaluation processes of funding agencies are highly problematic and inappropriate for agroecology. They prioritize short-term outcomes and milestones, lock projects into rigid planning tools (such as logframes), fail to account for the social, political and cultural dimensions of agroecology and are incapable of taking a long-term view on transformation processes. To support agroecology, donors should adopt careful systems of monitoring and evaluation that allow for emergence, adaptability, accountability, and efficiency (i.e. not overburdening grantees). To this end, donors can adopt participatory assessment approaches, allowing communities to develop and adapt their own metrics of change and of resilience and assess their own progress, based on their own ways of knowing. In addition, projects could be assessed against the 13 agroecology principles to document their performance and the extent to which they are helping to achieve food systems change.

THE IMPORTANCE OF ONGOING REFLECTION

We recommend that donors **engage in an in-depth and ongoing dialogue with food producer organizations** to examine and increase the quantity and effectiveness of funds that are allocated towards agroecology, and to improve the quality of delivery.

The ability to be reflective and responsive and to ensure that programs are grounded in the reality of farmers and communities compels donors to include farmers and communities in an ongoing process of reflection. Dialogues with food producers and organizations as well as researchers and other actors to evaluate programs, set priorities, and future changes in approaches, will ground programs in their realities and priorities.

There is a growing number of public and private donors who are supporting agroecology and are connecting in a nascent community of practice that also includes researchers, civil society, and other actors. Donors looking to make this shift should consider tapping into this important support network, which vitally needs to include agroecological food producers and movements, while also seeking peer support for their own transition to agroecology. It also requires reflecting on the broader funding portfolio and integrating agroecology components into other, potentially larger, funding envelopes (e.g. relating to climate change, gender, sustainable livelihoods and community economic development). Importantly, it requires donors to repurpose funding and policies to shift away from funding detrimental forms of agriculture and development which are not supportive of agroecology.

Finally, many professionals and institutions lack experience working directly with smallholder farmers, do not possess sufficient skills in participatory and transdisciplinary approaches to agricultural and rural development, and have limited knowledge and familiarity with agroecology. Institutions should establish intentional professional development programs to sensitize institutions and professionals to agroecology, preferably in collaboration with organizations of farmers and indigenous peoples.



Agroecological farm in Bangladesh. Credit: Abdul Quayum/ActionAid Bangladesh

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