

## Agroecology

### Background

Sustainable agricultural and food systems should provide affordable and healthy food for all while respecting planetary boundaries and ensuring social well-being. They should also guarantee fair incomes and good working conditions and keep the distances between producers and consumers as short as possible. In the face of today's global polycrisis, the reality often seems quite different.

Current systems are frequently neither crisis-proof nor sustainable, exceeding the capacity of the social and ecological systems on which they are based. In many regions, agricultural and food systems do not even fulfil their core task of providing affordable, healthy food.

More than a quarter of humankind has no secure access to food. Almost one in twelve people are affected by severe food insecurity. Over 780 million people worldwide go hungry (FAO, 2023). Yet hunger and malnutrition are primarily a result of poverty and inequality rather than insufficient food production.

Our current agricultural and food systems create significant external costs<sup>1</sup> in the areas of environment and health (cf. e.g. Hendriks et al. 2021<sup>i</sup>). These include green-house gas emissions, soil degradation, water and air pollution, depleted aquifers and loss of biodiversity. The list of adverse impacts also includes infectious diseases caused by food, diabetes, cardiovascular diseases, increasing resistance to antimicrobial substances, undernourishment, nutritional deficiency and

malnutrition, with serious consequences for health systems (UNEP, 2021).

### Conclusion: A fundamental transformation of agricultural and food systems is needed.

Promoting agroecological approaches is widely regarded as a promising strategy for a sustainable transformation (cf. HLPE 2020<sup>ii</sup>; IPCC 2019<sup>iii</sup>; IPBES 2019<sup>iv</sup>; WBGU 2020<sup>v</sup>; G7 Development Ministers' Meeting Communiqué 2022<sup>vi</sup>).

### Agroecology – a holistic approach for sustainable agricultural and food systems

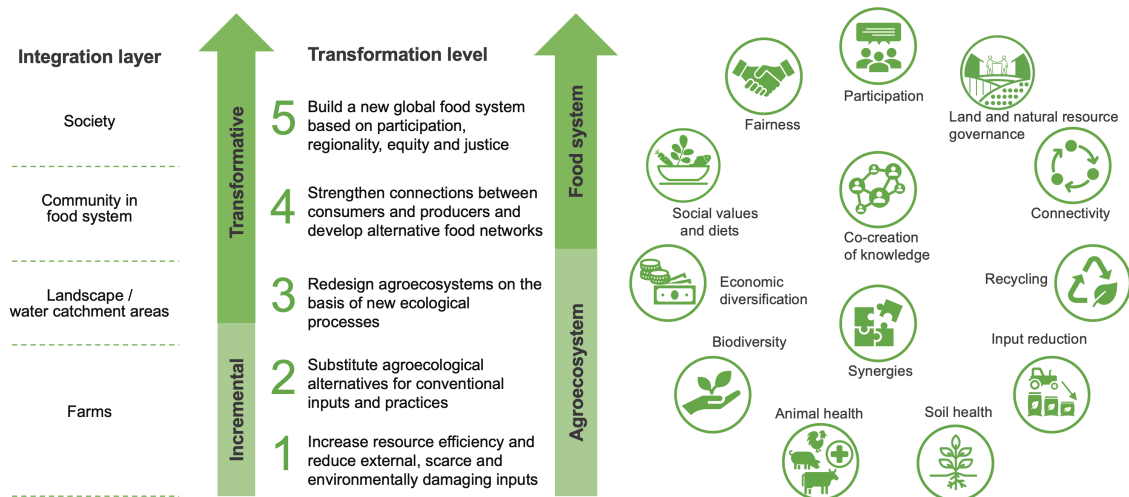
Agroecology has a long history but has only become the focus of public attention in the last 20 years. The concept has continuously evolved in relation to current challenges. For GIZ, agroecology is a dynamic and systemic approach that addresses the ecological, socio-cultural, technological, economic and political dimensions of our food systems – from production to consumption – and provides guidance on their future development.

Thirteen principles serve as a guide (see Fig. 1, right; based on FAO 2018<sup>vii</sup> and HLPE 2019<sup>viii</sup>). A key feature of these generically formulated principles is that they can be adapted to local conditions and permit a variety of agroecological practices and measures. It follows that the understanding or definition of agroecology can also vary depending on the institution or country-specific context.

Agroecological principles can be applied on farms but can also go beyond this and guide interventions in rural areas, wider society and politics. They act both as building blocks and as guard rails for the change process, i.e. the sustainability transformation of agricultural and food systems (see Fig. 1, left: 'Integration layers' and 'Transformation levels').

<sup>1</sup> The Scientific Group of the UN Food Systems Summit (UNFSS) estimates the current external costs of food systems at USD 19.8 trillion (Hendriks et al. 2021). This is more than double the current figure of around USD 9 trillion for global food consumption.

# LEVELS AND PRINCIPLES OF AGROECOLOGY



Source: adapted from HLPE Report 2019

The conceptual and scientific solutions they offer can be used to support this transformation and to tackle global crises such as climate change, food insecurity and the loss of biodiversity and ecosystems (cf. CFS 2021<sup>ix</sup>; HLPE 2019<sup>viii</sup>; Kerr et al. 2023<sup>x</sup>). In doing so, they promote justice and fairness with regard to prosperity values, knowledge and the governance of natural resources.

Agroecological approaches are among the nature-based solutions (NbS) that can simultaneously contribute to the sustainable development goals (SDG) and to the goals of the Rio Conventions on protecting biological diversity and combatting climate change and land degradation. They are promoted at a technical, institutional and political level and are increasingly supported by social demands for healthier, fair and sustainably produced food and a healthier environment in various parts of the world. Current studies (cf. Kerr et al. 2021<sup>xi</sup>; van der Ploeg et al. 2019<sup>xii</sup>; Grémillet & Fosse 2020<sup>xiii</sup>; FiBL 2021<sup>xiv</sup>) show that agroecological approaches generate employment and even, depending on the context, higher and, above all, generally more stable incomes than conventional or industrial agriculture.

## Development policy status

Germany's Coalition Agreement includes a commitment to expand organic farming<sup>2</sup> to cover 30 per cent of all cultivated land by 2030. Organic farming (also known as ecological agriculture, natural farming and chemical-free agriculture) is one example of an agroecological approach as the methods used are intended to permit environmentally friendly production based on closed material cycles and species-appropriate animal husbandry. In the development cooperation sector, agroecology is cited as a priority approach to food security with the goal of strengthening smallholder production. In BMZ's core area strategy 'Sustainable Agri-Food Systems – A World without Hunger', it is seen as one of the building blocks of a socio-ecological transition. The volume of funding pledged in support of agroecological initiatives doubled between 2018 and 2020. In June 2023, BMZ and BMEL joined the Agroecology Coalition<sup>3</sup>. This has created a spillover effect at international level, with the result that bilateral and multilateral actions can be more closely interlinked.

## Our position

A sustainability transformation of agricultural and food systems is not only necessary due to the ecological and social costs and low crisis-resilience of the systems predominant today, but also economically unavoidable in the long term. Policymakers have been signalling the direction of travel for some years; now we need an enabling framework, coherent policies and appropriate options for action. Agroecology is a win-win strategy and has great potential as a lever for restructuring agricultural and food systems

<sup>2</sup> Organic farming corresponds to many of the principles of agroecology and is therefore increasingly being promoted under the German Government's agroecology programme.

<sup>3</sup> <https://agroecology-coalition.org/agroecology-coalition/>

and forging a just transition. It offers holistic solutions to the structural challenges of rural development and opens up new prospects for agricultural businesses and entire regions, right up to the global level. Against this background and given its many years of positive experience delivering technical cooperation projects based on agroecological principles and approaches, GIZ has developed the following set of positions.

### **1. Agroecological approaches ensure an adequate supply of healthy food while respecting planetary boundaries.**

The goals of food security, healthy diets and protecting natural resources and the climate are interdependent. Agroecological approaches combine traditional and modern technologies to achieve stable yields and high levels of efficiency in terrestrial and aquatic production systems. They are an effective strategy for reducing conflicts between productivity, sustainability and nutritional quality. These approaches can make a significant contribution to climate adaptation and greenhouse gas reduction targets, protect ecosystems and conserve or improve biodiversity. To this end, for example, precedence is given to natural processes, reducing external inputs as far as possible and actively promoting material cycles and diversity.

### **2. Agroecology is an important building block for the sustainability transformation of agricultural and food systems.**

Agroecological approaches can be a highly effective lever when it comes to designing ecologically sustainable, socially just and crisis-proof agricultural and food systems, above all because of their interdisciplinary and systemic orientation as well as their locally revitalising effect on economic activity. They offer solutions outside the conventional model and the associated (and often unequal) power relations and concentration processes found in markets such as those for seeds and fertilisers. In this way, new systems can be created that protect natural capital and at the same time reduce social injustice. In order to facilitate change and create a level playing field, we also need to address obstacles to the spread of agroecology with a particular focus on its knowledge- and labour- intensive nature as well as the price distortions caused by the externalisation of negative costs.

### **3. Agroecology increases the resilience of rural areas and the food systems associated with them.**

Agroecological practices make farms and rural regions more resilient. This makes them better able to withstand external shocks and global crises in the long term by reducing certain risks (e.g. dependencies on food imports, fertilisers and pesticides) and strengthening key contributors to climate change adaptation (ecosystem services, soil health, biodiversity and diverse production systems). As well as reducing dependencies, the agroecological approach helps to create new jobs (on- and off-farm) and has the potential to boost incomes by adding value locally ('living income'). Coherent spatial strategies that include regionally differentiated packages of measures for managing agricultural landscapes create new opportunities not only at farm level and in rural areas but also beyond.

### **4. Agroecology promotes fairness and social participation and strengthens rights-based development.**

From a policymaking perspective, agroecology prioritises key areas such as food sovereignty, human rights (including the right to food, to a healthy environment and to equality), the rights of indigenous peoples and local communities, social values and ecological principles as well as aspects of animal welfare and animal health in livestock farming. In order to promote acceptance and participation, agroecological approaches draw on the knowledge of food producers and strengthen local culture. They actively seek local community involvement and promote self-determination and political participation. In this way and in keeping with the goals of feminist development policy, they also address the structural causes of inequality, enabling all stakeholders – including workers, producers, consumers and especially women, young people and other disadvantaged groups – to have a say in the future of their agricultural and food systems.

### **5. Agroecology promotes and requires effective land and resource governance.**

As a society, we place wide-ranging demands on the use of land, water and other natural resources. These complex demands often stand in competition to each other and are frequently a source of conflict. In addition to good agricultural practice, agroecology emphasises the need for smart and carefully tailored policies and other political and social governance mechanisms that address both opportunities and risks at landscape level. Effective governance structures enable stakeholders at all levels of politics, civil society and the private sector to jointly develop and implement holistic approaches to the sustainable management of natural resources.

## Recommended actions

The most important actions recommended by GIZ are set out below.

### **1. We recommend using the 13 agroecological principles to implement locally adapted solutions as part of the global transformation process towards more sustainable agricultural and food systems.**

GIZ works with a wide range of partners in different political, social and environmental contexts. It therefore sees agroecology as a ‘toolbox’ of diverse practices and conceptual approaches that can be selected according to the situation and context and applied to different agricultural and food systems. Drawing on its experience of supporting complex change processes, GIZ already implements projects explicitly geared towards agroecological transformation in a number of countries. These projects are viewed as part of a continuous but never completed journey towards the best possible solutions and compromises. At the same time, however, the advisory work of many projects remains aligned with established and more conventional development paths. The aim here is to work with partners to integrate suitable agroecological approaches (mainstreaming) and accelerate the transition to more sustainable production systems. This can be achieved by embedding agroecological principles more directly in the funding criteria for rural development, agriculture and aquaculture projects and through strategic programme design at cluster and country level in order to increase transformational potential by enhancing synergy effects.

### **2. We recommend developing the skills and capacity of policymakers for interdepartmental processes in order to promote integrated solutions.**

On the one hand, the incentive systems needed to provide broad-based support for agroecological approaches worldwide remain undeveloped. At the same time, the sustainability transformation is encountering resistance despite growing public support. GIZ should therefore work with key policymakers and interest groups on capacity-building measures. This will enable them to promote change processes in global and national policies and strategies with clear goals, concrete implementation measures and sufficient financial resources. As well as creating suitable enabling frameworks for sustainable patterns of production and consumption, this also means

ending unsustainable practices and discontinuing the subsidies that support those practices. Equally relevant for policymakers are the development and application of approaches that highlight and assess the true costs of food and agricultural practices. True cost accounting enables policymakers to consider the total external costs of agriculture, including food processing and environmental or health costs, at the macroeconomic level. This makes it easier to identify the positive results and impacts of agroecology and to reevaluate it using direct comparisons with other systems. GIZ should leverage its wealth of experience in the field of policy advice to support such processes as a contribution to better decision-making in politics, business and wider society.

### **3. We recommend working together with partner countries to design and test the agroecological transformation process, especially in the respective lifeworlds of those involved.**

Agroecological approaches and transformation efforts are not ‘expert’ projects. Rather, they are about empowering producers and consumers to represent their own interests, facilitating fair political, economic and social participation by all relevant stakeholders and more control over their own development. Civil society and grassroots organisations (including trade unions) can positively support this process. GIZ should also continue to support producers as self-determining actors in the context of rural development and strengthen their position in the following three areas.

- Control of knowledge: The sharing of knowledge between producers helps to strengthen community resilience and to disseminate locally adapted solutions more rapidly. The act of co-creating knowledge ensures that local and indigenous knowledge is harnessed and that the practices supported by GIZ are adapted to local conditions.
- Control of resources: Production systems based primarily on the use of local resources increase the autonomy of producers and reduce their dependence on inputs whose price and availability are heavily influenced by external market fluctuations and crises.
- Control of marketing: Where economically viable, direct marketing helps bring producers and consumers closer together and reduces the impact of global price fluctuations.

#### **4. We recommend promoting agroecology-focused projects with a systemic multi-level approach and embedding them in portfolios geared towards a comprehensive sustainability transformation.**

For agroecological approaches to realise their transformative potential, differentiated policy approaches and participatory processes are required. These should be designed to strengthen rural areas, promote diverse and sustainable land and water use, and address all aspects of the food system, including farms, households, ecosystems, landscapes, food system communities, processing firms, retailers and consumers. GIZ can draw on a wide range of experience and tools to help implement territorial and cross-sectoral participatory planning and development approaches in individual projects and in country portfolios. With regard to funding programmes for rural (and aquatic) areas, this allows for the more effective dovetailing of objectives – food security, employment, health, biodiversity and ecosystem conservation, and protection of the climate – while also creating synergies between ecological, social and economic objectives.

#### **5. We recommend expanding the participatory funding of research and innovation in the field of agroecology.**

Agroecological approaches and practices are knowledge-intensive, and to date agricultural research and advisory work in this area has not received adequate support. Furthermore, the classic top-down approach of transferring knowledge from the research level to advisory teams and then on to practitioners should give way to the principles of participation and knowledge co-creation in order to ensure that knowledge is generated in a realistic and timely manner. Research of this kind, based on the identified needs of end users, leads to greater acceptance of innovative methods and a higher adoption rate among producers, therefore accelerating the implementation of essential changes in practice. Comprehensive reform is also needed in GIZ's partner countries with regard to the work and role perceptions of agricultural extension services and advisors who do not yet systematically apply integrated, (agricultural) landscape-based and participatory approaches. GIZ should actively pursue a shift in the focus of applied agricultural research towards agroecological transformations and support efforts to translate scientific recommendations into practical and evidence-based policy alternatives. More efficient and better mechanisms for transferring practical agroecological knowledge to organisations that provide advisory services can significantly strengthen the transformative potential of that knowledge.

## **Innovations**

### **Programme and project portfolio stocktaking tool**

GIZ supports the development and use of tools that facilitate the analysis, evaluation and comparison of agricultural programmes, projects and policies from an agroecological perspective. The Agroecology Criteria Tool ([ACT](#)) developed by Biovision and the [Agroecology Finance Assessment Tool](#) developed by the UNFSS Agroecology Coalition are particularly suitable for analysing clusters and country portfolios.

### **Methodological guidance on measuring the socio-economic and environmental impacts of agroecology**

The [guidance](#) developed jointly by HFFA Research GmbH and the ProSoil global programme team is aimed at project executing agencies and researchers who want to carry out context-based socio-economic analyses and assessments of ecosystem services in connection with agroecology projects. It provides an overview of possible methods, explains each one and outlines the individual context. The guidance can therefore be used to inform the selection of a suitable analytical design that will generate evidence for the positive economic benefits and ecological impacts of agroecology.

### **Capacity-building in the field of agroecology**

GIZ and its partners have developed various training modules ( Training Towards Sustainable Food Systems – Introducing Agroecology, [Leadership Training in Agroecology & Organic Agriculture](#) and [Agroecology Food Policy Forum for Change](#) ) in order to strengthen the capacity of employees and partners, promote peer-to-peer learning and improve efficiency at its partner organisations.

## **Cooperation partners**

GIZ cooperates with a number of partners on programmes designed to strengthen agroecological approaches. These include the EU, the United Nations Food and Agriculture Organization ([FAO](#)), the African Union's Ecological Organic Agriculture Initiative ([AU-EOAI](#)), the International Fund for Agricultural Development ([IFAD](#)), the International Federation of Organic Agriculture Movements ([IFOAM](#)), the French Agricultural Research Centre for International Development ([CIRAD](#)) and technical partners such as [Biovision](#). GIZ is an active member of international and regional multi-stakeholder platforms, in particular the Transformative Partnership Platform on Agroecology ([TPP](#)), the FAO's [Scaling up Agroecology Initiative](#), the UNFSS' [Agroecology Coalition](#), the CGIAR's [Agroecology Initiative](#), and the Alliance for Food Security in Africa ([AFSA](#)).

The list of areas in which these platforms are involved includes the scaling up and mainstreaming of agroecological approaches, the initial and ongoing development of human and organisational capacity, (economic) impact analyses and the preparation of policy recommendations. GIZ also maintains a regular dialogue with universities and research institutions on technical issues. Cooperation with national and local actors in GIZ's partner countries is an important building block for the continued expansion and long-term mainstreaming of agroecological approaches.

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