

On the Economic Potential of Agroecology

A comprehensive approach is needed

Scientific studies and reports (cf. IAASTD+10 – Herren et al. 2020¹; HLPE 2019²; STALLOR 2020³; IPCC 2019⁴; IPBES 2019⁵; WBGU 2021⁶) confirm that a holistic transformation of agriculture and food systems is necessary for sustainable development and to overcome current crises. This transformation should therefore:



Agroecology as a promising lever for a socio-ecological transformation

Agroecology is a dynamic, transdisciplinary, and intersectoral approach. It encompasses agricultural production as well as consumption and in consequence ecological, socio-cultural, technological, economic, and political dimensions. In 2019 the international High-Level Panel of Experts on Food Security and Nutrition (HLPE) described agroecology by defining 13 agroecological principles. These are in line with the 10 elements consolidated by the 197 member states of FAO in 2018 (see Figure 1→).

Agroecology promotes diverse production systems and cultivation with nature (see Figure 2→). In addition to conserving natural resources, it strengthens farms and regional economies to become more resilient to crop failures, climate change and less dependent on price fluctuations of imported

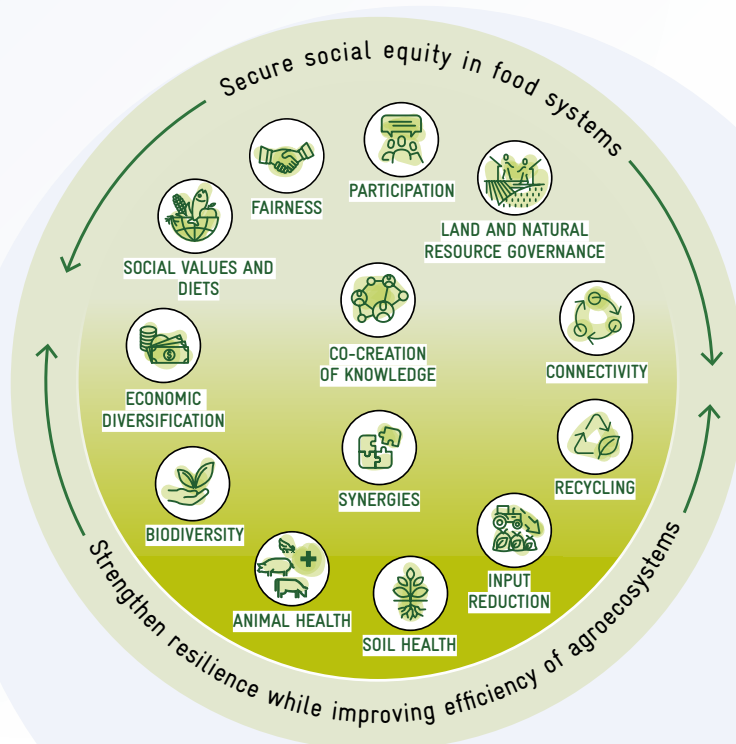


Figure 1 | Presentation of 13 principles according to HLPE, 2019.

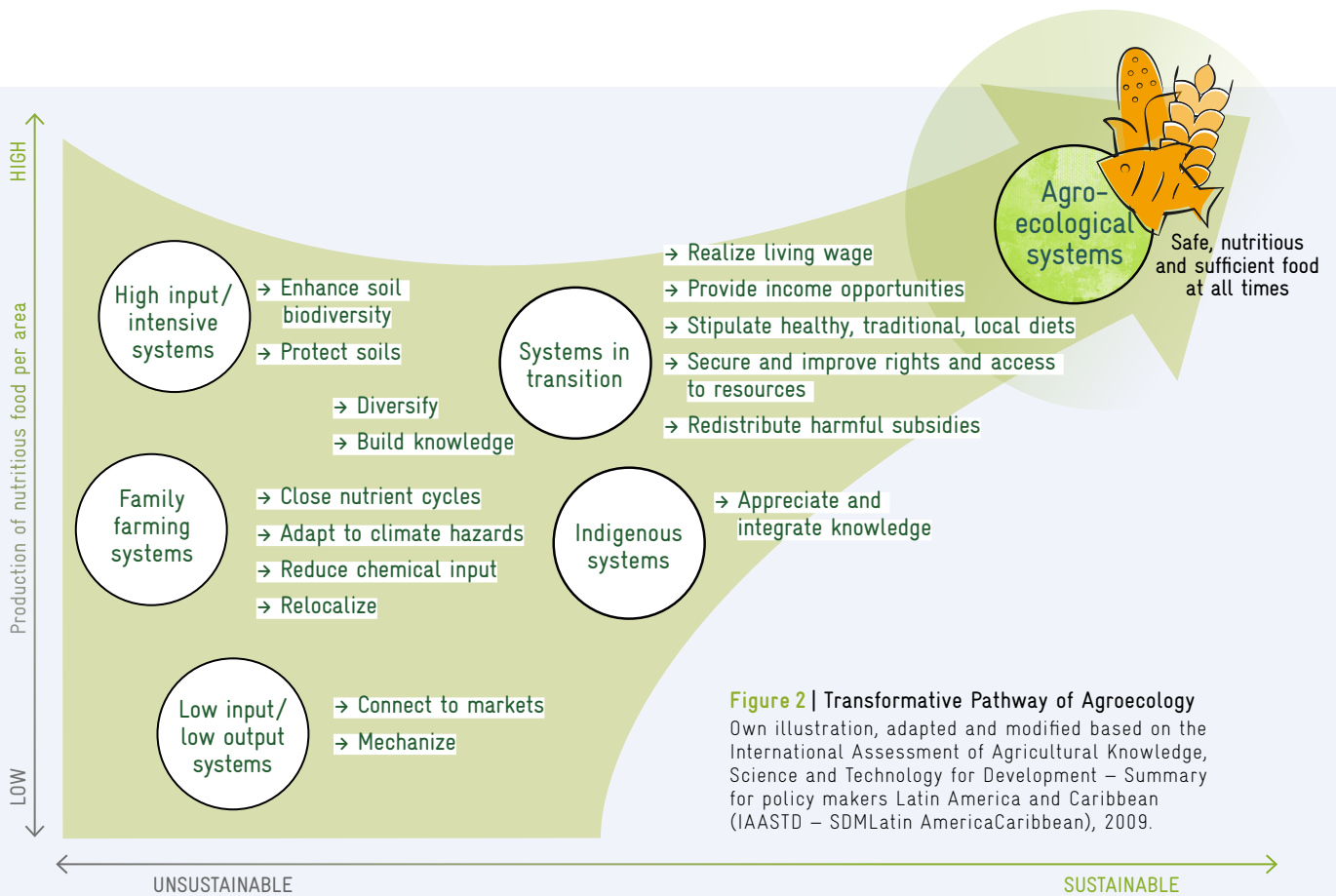


Figure 2 | Transformative Pathway of Agroecology
 Own illustration, adapted and modified based on the International Assessment of Agricultural Knowledge, Science and Technology for Development – Summary for policy makers Latin America and Caribbean (IAASTD – SDMLatin AmericaCaribbean), 2009.

goods such as pesticides or seeds. The promotion of local value addition, processing and local or direct distribution channels creates additional and secure income opportuni-

ties with fair wages, especially for women and young people, thus strengthening their economic status.

Agroecology has economic potential

Agroecological systems are economically viable and, depending on the context, can be more profitable than conventional systems.⁷ On average, agroecological farming systems see a significant increase in profit margins, although this varies according to the type of production.⁸ The diverse cultivation and local value creation offer versatile and additional income opportunities and spread the income over the entire year, which makes livelihoods more stable.⁹ The systemic approach of agroecology ensures and increases circularity and synergies within the agroecosystem and the surrounding ecosystems. The diverse agroecological farming systems together with advances of organic farming practices lead to an overall higher productivity compared to monocultures or cash-crop systems. Locally adapted best practices and varieties help to close the yield gap between organic and conven-

tional agriculture by reducing pest pressure and improving nutrient use efficiency. The integration of ecosystem services and system diversity additionally increase the resilience against shocks.¹⁰ Those benefits outweigh any lower yields of individual crops or increased costs for mechanical weed control.¹¹ According to a 2023 study, farmers in Andhra Pradesh, India, saw an average net increase in their income of 49% through agroecological approaches (also known as natural farming). This was mainly the result of a 44% reduction (on average) in input costs, especially for fertilisers and pesticides.¹² In addition, agroecology creates new jobs (on- and off-farm), promotes fair wages (living income), and contributes to higher incomes through local value creation.¹³ This creates perspectives for the future in rural areas – beyond the farm level.

The economics of agroecology are also evident when the focus is on profits rather than sales and when external costs (negative and positive) are priced in. Agroecology can lead to positive external costs (e.g. increased soil fertility, maintained ecosystem services) and thus create added value not only economically, but also socially. For

example, there are positive effects from higher soil fertility and increased biodiversity as well as lower pesticide residues.¹⁴ The example of India shows that farms using natural inputs achieve the same or higher yields compared to other systems, with an average yield increase of 11%, while at the same time obtaining greater plant diversity.¹⁵

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> → Increased resilience to climate shocks, pests and diseases → Strong human capital, knowledge and fair and safe working conditions → Reduce input costs and achieve higher value creation in the long run → New jobs (on- and off-farm jobs) and higher incomes or fair wages through local value creation 	<ul style="list-style-type: none"> ▪ Lack of start-up capital ▪ Uneven playing field because negative costs are not internalised or are only partially internalised ▪ Transition period until the benefits of agroecology are fully realized
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> → Increasing demand for sustainable and healthy products → Growing impact investments for solid and long-term financing → Growing global anchoring of agroecology in the 2030 Agenda, the Paris Climate Agreement, the Convention against Land Degradation (UNCCD) and the Convention on Biological Diversity (CBD) 	<ul style="list-style-type: none"> ▪ Lack of incentives necessary for transformation ▪ Limited access to investment and credit ▪ Unfavourable political environment ▪ Structural preference for business as usual

Table 1 | Summary of the findings in SWOT analysis (own elaboration).

Insights from the ground

The global programme “Soil Protection and Rehabilitation for Food Security” (ProSoil), commissioned by Germany’s Federal Ministry for Economic Cooperation and Development and co-funded by the European Union and the Bill & Melinda Gates Foundations, supports and advises

smallholder farmers in Benin, Burkina Faso, Ethiopia, India, Kenya, Madagascar and Tunisia on agroecological practices and transformation processes. To answer the prevailing question about the economic viability of agroecological practices and their wider societal impacts, reports

and studies conducted between 2014 and 2023 within the framework of ProSoil were analysed. According to the findings, implementing agroecological practices can lead to economic benefits, while the degree of profit increase may differ depending on the local circumstances. The detailed analysis and its findings have been recently published¹⁶.

Figure 3 | Test field with Mucuna (velvetbean) as green manure in Kenya.



For example, integrated soil and water conservation for farmers in Ethiopia, India and Tunisia led to increased production and higher profits. In all regions, integrated soil fertility management (ISFM) increased crop yields and profit margins through composting, liming and fertiliser use. Organic farming in Benin and Kenya was profitable, reducing costs and achieving higher market prices. Socio-economic and societal benefits included improved food security through higher production volumes and diversified cultivation, which in turn contributed to household nutrition. The reduction or non-existent use of pesticides thanks to organic farming lowers costs, enhances soil health and mitigates harmful health effects caused by air pollution. Agroecological practices are also more resilient to climate change because they are effective at counteracting drought and heat while promoting carbon sequestration. Some practices, such as agroforestry, have proven to be a versatile tool for improving systems and resilience to climate change, with success dependent on long-term investment. The introduction of agroecological practices has increased farmers' incomes and promotes knowledge sharing and community cohesion.

Despite many already proven and profitable agroecological business models, small rural farms are seldom market-oriented or hardly integrated into monetary economy. They often lack access to adequate financial services, such as loans which are needed to access certain value chains. To provide agricultural and processing businesses with access to appropriate financial services, the **global project „Promotion of agricultural finance for agri-based enterprises in rural areas“** (GP AgFin) works together with both local financial institutions and agricultural and agri-based enterprises. Incentives for agroecological business models

are one pathway of supporting a socio-ecological transformation of food and agriculture systems. The price increase of conventional fertilizers and fossil fuels (especially since the Russian war of aggression against Ukraine) has resulted in a growing interest of private sector in agroecological business models (e.g., organic fertilizers or crop protection products) as well as in renewable energies. GP AgFin facilitates access to adapted financial products for sustainable business models that contribute to the agroecological transformation.

In cooperation with financial institutions, demand-orientated and market-based financial services are developed on the basis of profitable business models. These adapted financial services promote the use of renewable energies, such as solar-powered irrigation systems in pineapple and cashew production in Togo, as well as the reduction of mineral fertilisers and the efficient use of water and land resources. In Mali, for example, adapted loans are increasingly being used to apply the System of Rice Intensification (SRI) method using the organic fertiliser FERTINOVA in rice cultivation.

In Zambia, GP AgFin is cooperating with ABBank and the social enterprise COMACO. ABBank was supported by the GP AgFin country package Zambia in developing and piloting the „climate smart loan“ digital financial service. COMACO's small agricultural enterprises that apply agroecological farming methods and agroforestry receive favourable credit conditions.

The adapted financial services thus contribute to improving the climate and food resilience of smallholder farms and agri-based businesses in rural areas.

Figure 4 | GP AgFin facilitates access to microfinance for sustainable business models for women and youth in Mali und Togo.



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