



Agri-PDB
Platform

Working Group of Agricultural Public Development Bank *Financing the Transition to Agroecology*

07.12.2023



What do we mean by agroecology?

Agroecology, as defined by the FAO, is an integrated approach that combines ecological and social concepts and principles to design and manage food and agricultural systems. It aims to optimise interactions between plants, animals, humans and the environment, while taking into account the social aspects necessary for a sustainable and equitable food system.

The FAO stresses that agroecology is not a new concept, but has historical roots dating back to the 1920s¹. It has been practised by family farmers, grassroots social movements and incorporated into public policies in various countries. In recent years, agroecology has been recognised by major international institutions and the United Nations as an approach that meets the main challenges facing agriculture.

What distinguishes agroecology from other approaches to sustainable development is its bottom-up and territorial nature. It focuses on providing contextualised solutions to local problems through participatory processes. Agroecology seeks to transform food and farming systems rather than simply modifying unsustainable practices. It tackles the root causes of problems in an integrated way, taking account of the social and economic dimensions. It also emphasises the rights of women, young people and indigenous peoples.

For IFAD, agro-ecology is an integrated, comprehensive and promising approach to transforming food systems and systematically solving the problems associated with agricultural and food production and trading systems in an enabling policy environment.²

AFD defines agroecology as an agricultural production system that combines economic, social, environmental and health performances. It considers that the agro-ecological transition must converge with the economic interests of producers, recognise the risks associated with changing practices and be compatible with food and nutritional security objectives. These three conditions are deemed necessary to ensure the support of AFD's partners for this transition³.

AFD encourages a territorial approach to agro-ecology and promotes projects that integrate these principles in the agriculture, rural development and biodiversity sectors. The aim is to ensure that the agro-ecological transition is better integrated into the projects financed by the AFD Group, by focusing on the economic, social, environmental and health performances of agricultural production systems.



This suggests that agroecology emerged in part as a reaction to some of the perceived limitations and unintended consequences of the Green Revolution of the 1960s. The Green Revolution, which involved the introduction of high-yielding crop varieties and the use of synthetic fertilisers and pesticides, aimed to increase agricultural productivity and address food insecurity.

Agroecology is a concept that encompasses different agricultural production systems aimed at promoting a holistic and sustainable approach to agriculture. These production systems include practices such as agroforestry, resilient agriculture, organic agriculture, conservation agriculture and climate-smart agriculture. Agroecology emphasises the integration of ecological principles into farming systems, promoting crop diversity, sustainable water and soil management, the reduction of synthetic inputs, the integration of agriculture and livestock farming, and the preservation of biodiversity. It also encourages the use of local knowledge and traditional practices, while incorporating scientific and technological advances. Overall, agroecology aims to promote farming systems that are resilient, environmentally friendly and socially equitable, in harmony with natural ecosystems and in response to the challenges of climate change and food security.

Why are Agricultural Public Development Banks (APDB) affected?

The history of APDB is closely linked to the Green Revolution and the development of intensive monoculture farming. This production model required considerable expenditure on the part of farmers, who had to purchase the improved seeds, fertilisers, plant protection products and agricultural machinery needed to carry out their cultivation activities as part of a technological package.

In a context where commercial banks were mainly oriented towards other sectors, multilateral development organisations financed the creation of public banks specifically focused on the agricultural sector. These public agricultural banks were set up to meet the financing needs of farmers, giving them access to the credit they needed to invest in their businesses.

It should be noted that today's BPAs are very different from the public banks of the 60s and 70s, which were often transformed into "universal" banks. However, a significant proportion of their loan portfolios is still made up of seasonal loans for the purchase of fertilisers, plant protection products and agricultural machinery. This reflects the continuing importance of these inputs in modern farming practices, despite technological developments and the debates surrounding their use.

Intensive farming models, based on monoculture and the use of chemical inputs, represent a high level of risk for the Public Agricultural Banks (BPA). These intensive farming practices increase the vulnerability of farmers, particularly the smallest, due to several factors:

Firstly, climate change is putting increasing pressure on intensive agricultural crops. Unpredictable weather variations, such as droughts, floods and storms, have a devastating impact on crop yields. Similarly, frequent fluctuations in commodity prices represent an additional risk, especially as the range of crops available is limited. Farmers who rely heavily on these crops to generate income face significant financial losses. This situation increases the risks for BPAs, as they are faced with a greater number of credit requests to rebuild and resume farming activities.

In addition, intensive farming models require resources that are themselves limited, particularly water and soil. Water supplies are becoming increasingly precarious due to the scarcity of water resources and the over-exploitation of groundwater. As a result, farmers are finding it difficult to maintain high levels of production, which directly affects their ability to repay their loans from BPAs.

In addition, the availability of chemical inputs needed for intensive agriculture is gradually decreasing, while their costs are rising. Farmers face additional economic challenges in obtaining the fertilisers, pesticides and other chemicals on which they depend. This can lead to financial difficulties for farmers, who may find it difficult to repay their loans, thereby jeopardising the stability of APDB.

Overall, intensive monoculture farming models, based on the use of chemical inputs, present considerable risks for APDBs. Climate change, resource constraints, declining chemical inputs and their increasing cost are all factors that threaten the viability of farming activities and the financial stability of farmers and the APDBs that support them. Promoting more sustainable and resilient farming practices is crucial to mitigating these risks and ensuring long-term food security.

In this context, the agro-ecological transition is a major opportunity that does not represent a return to the practices of the past, but a major investment in human and financial capital to improve practices and restructure supply chains and the food system. The approach must be contextualised and adapted to each situation. For example, on degraded land, soil restoration will be a long-term investment that may require the use of fossil fertilisers to encourage the production needed to boost soil organic matter. Similarly, in a context of open markets and low remuneration through prices, appropriate mechanisation as a means of improving labour productivity (and reducing its arduousness) remains a major development element in this transition.

What form can APDB take in agroecology?

APDBs need to integrate the agro-ecological approach into their business strategies in a number of ways.

Offer adapted financial services: APDBs can develop specific financial products for farmers who adopt agro-ecological practices. This can include loans at preferential interest rates or the mobilisation of guarantee tools for the purchase of organic seeds, organic fertilisers, conservation farming equipment or water-efficient irrigation systems. APDBs can also offer flexible financing mechanisms to support the transition to agro-ecological practices, such as extended repayment periods or deferred repayment loans.

Providing advice and technical support: APDBs can strengthen their advisory services by integrating agro-ecology experts into their teams. These experts can help farmers understand the principles of agro-ecology and implement sustainable practices adapted to their local conditions. They can also provide advice on soil management, biodiversity, crop rotation and other key aspects of agro-ecology.

Promote training and education: APDBs can organise or mobilise qualified institutions to organise training and education programmes for farmers on agro-ecological practices. This can include workshops, awareness-raising sessions, field demonstrations and exchanges of best practice. By investing in training, APDBs can build farmers' capacity to adopt agro-ecological techniques and maximise their long-term productivity and sustainability.

Encouraging partnerships and networks: APDBs can establish partnerships with key players in the agro-ecological sector, such as organic producer organisations, agricultural research centres, line ministries and specialist NGOs. This can also take the form of alliances with key buyers (private or institutional) in certified supply chains.

These partnerships can facilitate farmers' access to the resources, knowledge and technologies needed to implement agro-ecological practices. APDBs can also encourage networks of farmers committed to agro-ecology, promoting exchanges of knowledge and experience between peers.

By integrating these approaches into their business strategies, APDBs can play a key role in promoting agro-ecology and supporting farmers in their transition to more sustainable farming practices. This contributes to environmental preservation, farm resilience and long-term food security.

Here are some examples of specific agro-ecological practices that promote the sustainable management of natural resources and can be financed by the BPA:

Soil conservation agriculture, no-till sowing:

This practice aims to reduce tillage by limiting ploughing and favouring permanent soil cover with crop residues or intermediate crops. No-till is often combined with cover crops and compulsory crop rotations. This preserves soil structure and fertility, reduces weed pressure and erosion and degradation, and promotes better water retention.

Agroforestry: Agroforestry involves combining the cultivation of trees or shrubs with perennial agricultural crops or livestock on the same plot of land. Trees provide numerous benefits, such as nitrogen fixation, protection against erosion, regulation of the local climate, wood and fruit production, and the creation of habitats for wildlife. This production system is widely used in tropical regions to grow coffee, cocoa and other fruit crops. Trees planted in meadows make up silvo-pastoralism, an agro-ecological livestock farming practice.

Water management: Agro-ecological practices such as the construction of small dams, any land development (keyline, cordons, terraces, etc.) that impedes the flow of water, water-saving irrigation systems such as drip irrigation or rainwater harvesting and conservation enable more efficient management of agricultural water. This helps to reduce water consumption, prevent water shortages and maintain an adequate water balance.

Crop rotation: Crop rotation involves alternating different types of crop on the same plot of land over the seasons or years. This diversifies the nutrient requirements of crops, reduces disease, weed and pest problems, improves soil structure and encourages more efficient use of resources.

Use of organic fertilisers: Agro-ecological practices favour the use of organic fertilisers such as compost, animal manure or green manure. These natural fertilisers improve soil fertility, increase organic matter content, promote soil microbial biodiversity and reduce dependence on chemical fertilisers.

Biological control and integrated pest management:

Rather than using chemical pesticides, agroecology encourages the use of biological control methods, such as introducing beneficial organisms to control pests, promoting functional biodiversity and implementing integrated pest management strategies. This preserves populations of beneficial insects, reduces the use of chemical products and maintains the ecological balance.

What are the main obstacles or challenges encountered or to be anticipated?

Integrating the agro-ecological approach into APDB strategies can face a number of challenges, including **resistance to change**: Agro-ecological practices often involve a break with conventional, intensive farming models. Some farmers and even some APDB employees may be reluctant to adopt new approaches, fearing economic risks or lacking knowledge about agro-ecological practices. **Awareness-raising, education and communication** are essential to overcome this resistance and promote a thorough understanding of the benefits and opportunities offered by agro-ecology. A committed agricultural policy supporting the approach will greatly facilitate the promotion of agroecology (incentives, regulation).

Access to resources and technologies:

Adopting agroecology may require investment in specific resources and technologies, such as adapted seeds, efficient irrigation systems, alternative pest management approaches, etc. However, many farmers, particularly those in rural and disadvantaged areas, may find it difficult to access these resources. APDBs will need to find ways to provide financial (government, international financial partners) and technical (agricultural research, agricultural education, public technical services, consultancies and NGOs, APDB support platforms) support to facilitate access to these necessary resources.

Accountability and traceability: While some investments are easy to identify (energy efficiency, renewable energies, localised irrigation), the vast majority of agro-ecological investments are often linked to agricultural and livestock practices, which require a more sophisticated information system (taxonomy, monitoring of practices, impact measurements). This reporting is essential to justify the use of subsidies or the issue of green bonds, for example.

Assessing risks and returns: APDBs need to assess the risks and returns associated with agro-ecological practices in order to make informed funding decisions. As agro-ecology is often based on diversified and long-term approaches, it can be more difficult to quantify potential returns and to take into account the risks associated with external factors such as climate change. APDBs need to develop appropriate evaluation tools to assess the economic viability of agro-ecological projects and adapt their risk assessment methods.

Inter-institutional collaboration and

partnerships: Integrating agro-ecology often requires close collaboration with other players in the agricultural sector, such as producer organisations, research institutes and government agencies. APDBs need to establish strong partnerships and coordinate their efforts with these actors to share knowledge, resources and best practices. This may require organisational adjustments and effective coordination mechanisms.

How can APDB take greater account of agro-ecology?

APDBs can strengthen their role in supporting farmers in their transition to agro-ecological practices. Identifying and proactively managing these challenges is essential to ensure the successful integration of agro-ecology into APDB business strategies and to promote sustainable and resilient agriculture. APDBs can implement different strategies to encourage farmers to adopt agro-ecological practices. The establishment of an internal "green and social" strategy, combined with roadmap planning and aligned with the bank's mandates, is often a prerequisite.

Awareness-raising and education: APDBs (in partnership with, for example, an agricultural college and/or agricultural research institute) can organise awareness-raising and education programmes to inform farmers about the benefits and principles of agroecology. This can include workshops, training sessions, field visits and practical demonstrations. By providing farmers with in-depth knowledge of agro-ecological practices, APDBs can help them understand the long-term benefits of these sustainable approaches.

Technical support: APDBs can offer technical support to farmers wishing to adopt agro-ecological practices. This can take the form of expert advice, regular field visits, specialist training and support with farm planning. Farmers need practical support to implement agro-ecological techniques, and BPAs can play an important role in providing this kind of support. A partnership between the BPA and public agricultural technical services could be envisaged.

Offer of adapted financial products: APDBs can develop specific financial products to support farmers in their transition to agro-ecological practices. This may include loans at preferential interest rates and/or the offer of partial guarantees for the purchase of organic seeds, sustainable farming equipment, water-efficient irrigation

systems, etc. APDBs can also offer flexible financing mechanisms, such as extended repayment periods, to take account of the specific features of agro-ecology.

Partnerships with key players: APDBs can establish partnerships with key players in the agro-ecological sector, such as organic producer organisations, agricultural research centres and multilateral projects. These partnerships can facilitate farmers' access to the resources, knowledge and technologies they need to adopt agro-ecological practices. They can also establish support networks and exchanges of experience between farmers committed to agro-ecology.

Recognition and valorisation: APDBs can put in place mechanisms for recognising and valuing farmers who adopt agro-ecological practices. This can include financial incentives, certification or eco-labelling, specific marketing programmes for agro-ecological products, etc. By valuing farmers committed to agro-ecology, APDBs encourage other farmers to follow their example.

By combining these approaches, APDBs can play a key role in encouraging farmers to adopt agro-ecological practices. By providing knowledge, technical and financial support, as well as establishing strategic partnerships, APDBs help to create a favourable environment for agro-ecology and the transition to sustainable agriculture.

Medium- and long-term economic, environmental and social benefits for EPS

Economic benefits

Increased farm resilience: Agroecology focuses on crop diversification, sustainable soil management, preserving biodiversity and reducing dependence on external inputs. By adopting these practices, farmers can strengthen the resilience of their farms in the face of fluctuations in input prices, climate change, crop disease and so on. This reduces economic risks and contributes to the long-term sustainability of farms.

Income diversification: Agroecology encourages the development of diversified farming systems, which can enable farmers to have several sources of income, reducing their dependence on a single agricultural product.

Resilience to market fluctuations: By using agro-ecological practices, farmers are often better prepared to deal with climatic hazards and variations in market prices, which strengthens their economic resilience.

Reduced production costs: Agroecology encourages the use of local resources and a reduction in the use of costly chemical inputs such as pesticides and synthetic fertilisers. By adopting agro-ecological practices, farmers can reduce their expenditure on inputs, resulting in significant savings in the long term. In addition, sustainable soil management and crop diversification help to reduce disease and pest problems, which in turn reduces the cost of chemical treatments.

Access to differentiated markets: More and more consumers are looking for healthy, environmentally-friendly food products produced to high sustainability standards. Agro-ecological products often enjoy growing demand on local and international markets. By encouraging farmers to adopt agro-ecological practices, APDB can help them access these markets and obtain higher prices for their products. This can also help to diversify farmers' incomes and reduce their dependence on specific crops.

Positive image and branding: APDBs that integrate the agro-ecological approach into their business strategies can benefit from a positive image as institutions committed to sustainable development and environmental preservation. This positive image can strengthen the confidence of customers and partners, attract new investors and improve the overall reputation of APDBs. It can also open up new opportunities for collaboration with other players in the agricultural sector and attract additional funding to support agro-ecological initiatives.

Environmental benefits

Agroecology contributes to the preservation of agricultural biodiversity in a number of ways:

Encouraging crop diversity: Agroecology encourages crop diversification, i.e. growing several different plant species on the same plot of land. This makes it possible to recreate ecosystems closer to those found in nature, encouraging the presence of a greater diversity of plant species.

Encouraging polyculture and agroforestry systems: Agroecology promotes the planting of different plant species together, whether in polyculture systems (growing several crops simultaneously) or agroforestry systems (combining trees and agricultural crops). This encourages the coexistence of plant species and creates habitats conducive to a greater diversity of animals and insects.

Preserving local and ancient varieties: Agroecology encourages the conservation and use of local and ancient varieties of cultivated plants. These varieties are often adapted to local conditions and possess significant genetic diversity. By preserving and cultivating them, agroecology helps to maintain the diversity of cultivated plants and prevent genetic erosion.

Encouraging the presence of natural habitats: Agro-ecological approaches encourage the preservation of natural elements such as hedges, grass strips, wetlands, isolated trees, etc. These elements provide habitats for numerous species of animals, insects and birds, thus helping to preserve biodiversity. These elements provide habitats for numerous species of animals, insects and birds, thereby helping to preserve biodiversity.

Reducing the use of chemical pesticides and fertilisers: Agroecology favours pest and disease control methods that reduce dependence on chemical pesticides. By limiting the use of these products, agroecology preserves auxiliary fauna and flora, which play an important role in maintaining ecological balance.

By combining these different approaches, agroecology aims to recreate agricultural systems that are more diversified and closer to natural ecosystems, thereby helping to preserve agricultural biodiversity. By preserving agricultural biodiversity, agroecology also contributes to reducing the greenhouse gas (GHG) emissions of agricultural activities. By reducing ploughing, chemical fertilisers (especially nitrogenous ones) and plant protection products, CH₄, CO₂ and NO_x emissions are greatly reduced.

Agro-ecological practices have a positive impact on water and soil protection, favouring the soil's "sponge" effect to conserve more water, recharge the water table and slow its descent towards the river system, thereby increasing resilience in the face of meteorological accidents.

By adopting these agro-ecological practices, farmers can reduce the environmental impact of their activities, better preserve natural resources such as soil, water and biodiversity, and promote sustainable management of agricultural systems while reducing GHG emissions.

Employee benefits

Adopting agroecology can create job opportunities in various sectors of agriculture and the local economy. Here are some concrete examples of job creation thanks to agroecology:

Jobs in agricultural production: Agroecology encourages crop diversification and the development of more sustainable farming systems. This may require more labour for crop management, management of agroforestry systems, animal husbandry, local seed production, collection of wild edible produce, etc.

Jobs in product processing and marketing: Agroecology often encourages more local and artisanal forms of processing and marketing. This can create jobs in activities such as food processing, the production of value-added products (e.g. jams, preserves, dairy products, etc.), direct sales to consumers (farmers' markets, organic baskets, etc.) and the creation of agricultural cooperatives.

Jobs in related services and infrastructure: The adoption of agroecology may require additional services and infrastructures, such as the setting up of short distribution networks, the creation of agroecology training centres, technical support for farmers, the setting up of certification and labelling systems, applied agroecology research, and so on. These activities create job opportunities in related fields.

Jobs in the environment and conservation sector: As agroecology focuses on sustainable agricultural practices, it can help to preserve the environment and conserve biodiversity. This can generate jobs in areas such as ecosystem restoration, natural resource management, biodiversity monitoring, environmental education, etc.

Jobs in innovation and research: Agroecology often requires innovation and research to develop new practices, techniques and technologies adapted to agroecological systems. This can lead to jobs in agronomic research, technological innovation, varietal selection adapted to agroecology, etc.

An example of BPA integrating the agro-ecological approach into its business strategy.

Banco Nacional de Desenvolvimento Econômico e Social (BNDES) (Brazil) : BNDES is Brazil's main economic and social development bank. They have set up specific lines of credit to support agro-ecological projects in the country. Their "BNDES Pro-Sustainable Agriculture" programme offers loans at preferential interest rates to farmers and agricultural businesses that adopt agroecological practices, such as agroforestry, sustainable irrigation and organic production. BNDES also works in partnership with research organisations and NGOs to promote agroecology in the country.

Bibliografía

- AFD, 2023, Pour une meilleure intégration de la transition agroécologique dans les projets financés par le groupe AFD, note de positionnement. <https://www.afd.fr/fr/ressources/meilleure-integration-transition-agroecologique-projets-finances-groupe-afd>
- Amede, T.; Konde, A.A.; Muhinda, J.J.; Bigirwa, G. Sustainable, 2023, Farming in Practice: Building Resilient and Profitable Smallholder Agricultural Systems in Sub-Saharan Africa. Sustainability 15, 5731. <https://doi.org/10.3390/su15075731>
- Deguine Jean-Philippe, Aubertot Jean-Noël, 2023, Agroecological crop protection for sustainable agriculture Advances in Agronomy, Volume 178, <https://doi.org/10.1016/bs.agron.2022.11.002>
- EDF & FBN, 2023, Regenerative agriculture financing program results of the 2022 pilot, https://www.edf.org/sites/default/files/2023-07/EDF_FBN_RAF_report.pdf
- FAO, 2018, The 10 elements of agroecology guiding the transition to sustainable food and agricultural systems <https://www.fao.org/3/i9037en/i9037en.pdf>
- FAO, 2019, TAPE: tool for agroecology performance evaluation process of development and guidelines for application. <https://www.fao.org/agroecology/tools-tape/en/>
- FAO, 2020, The potential of agroecology to build climate-resilient livelihoods and food systems, <https://www.fao.org/3/cb0438en/CB0438EN.pdf>
- HLPE. 2019. Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition. A report by the High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome. <https://www.fao.org/agroecology/database/detail/en/c/1242141/>
- HORUS, 2023, Etude sur les mécanismes de financement de la transition agroécologique dans la CEDEAO - Rapport d'études de cas. MécaFinTAE_Rapport d'EtudesdeCas_HORUS-Salvaterra_EN.docx
- IFAD, 2021, Stock-take report on agroecology in IFAD operations: An integrated approach to sustainable food systems <https://www.ifad.org/en/web/knowledge/-/stock-take-report-on-agroecology>
- IFAD, 2022, Agroecology: a holistic path towards sustainable food systems. <https://www.ifad.org/en/web/knowledge/-/agroecology-a-holistic-path-towards-sustainable-food-systems>
- INTER-RÉSEAUX, Comment accompagner les transitions agroécologiques aux Suds ? Bulletin De Veille Thématique, N°460 https://www.inter-reseaux.org/wp-content/uploads/BDV-460-Agroecologie_VF.pdf
- Mockshell J; Ogutu SO; Álvarez D; Ritter T; Steinke J; Remans R; Quintero M., 2023, Transitioning to agroecological food systems: A review of incentives for adoption of agroecological practices and outcomes. Working Paper N° 548 CIAT. <https://cgspace.cgiar.org/handle/10568/131010>
- Sachet E, Mertz O, Le Coq J-F, Cruz-Garcia GS, Francesconi W, Bonin M and Quintero M., 2021, Agroecological Transitions: A Systematic Review of Research Approaches and Prospects for Participatory Action Methods. Front. Sustain. Food Syst. 5:709401. <https://www.frontiersin.org/articles/10.3389/fsufs.2021.709401/full>