POLICY GUIDELINES ON AGROECOLOGY TRANSITIONS IN ASEAN

LICA
LAO FACILITATED INITIATIVE ON AGROECOLOGY FOR ASEAN

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For more information on the guidelines and the associated digital knowledge hub, visit https://www.aseanaetguidelines.org

Agroecology and Safe Food System Transitions

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About the guidelines

Agroecology provides pathways for food systems development, based on diversifying crops, farms, farming landscapes and knowledge systems to build long-term fertility, resilient and healthy agroecosystems, secure livelihoods, ultimately contributing to sustainable and equitable food systems transformations.

The rationale for agroecology transition in ASEAN is well established. While conventional intensification has boosted productivity, it has also harmed the environment, climate resilience, livelihoods, and the socio-cultural fabric of agrifood systems. The ASEAN Regional Guidelines for Sustainable Agriculture identify five principles to guide transition "to an agriculture that is highly productive, economically viable, environmentally sound and which is based on the principles of equity and social justice" – including (1) improving efficiency in the use of our resource; (2) conserving, protecting, enhancing natural ecosystems, promoting and enhancing nature resources and communities; (3) protecting and improving rural livelihoods and social well-being; (4) Enhancing the resilience of people, communities and ecosystems; and (5) Promoting good governance of both natural and human systems. The sustainable agriculture guidelines point to agroecology as a "viable transformative approach in the context of a paradigm shift".

Agroecology transitions can accelerate and deepen the realization of the regional agreed visions and plans, including the Vision and Strategic Plan of ASEAN Cooperation in Food, Agriculture and Forestry 2016–2025, the ASEAN Economic Community Blueprint 2025, the ASEAN Socio-Cultural Community Blueprint 2025, and the ASEAN Master Plan on Rural Development 2022 to 2026, among others.

Agroecology transitions can also accelerate delivery on the 17 Sustainable Development Goals, the Rio Conventions on Climate, Biodiversity and Land Degradation, the Paris Agreement on Climate Change, and the Kunming-Montreal Global Biodiversity Framework among other international commitments.

There are multiple examples of agroecology practices in ASEAN countries, but challenges to scaling up and scaling out agroecology approaches persist. Stakeholders point to several issues, including strongly held beliefs that conventional agricultural intensification is the only way to ensure food security, weak market demand for sustainably produced products, institutional silos, sociotechnical lock-in, and inadequate support to farmers and farmers' organizations. Decision-makers' need to reliably meet production, and export targets can outweigh needs relating to nutrition, farmers' livelihoods or sustainability outcomes. In addition, indicators of progress on sustainable agriculture are not well defined.

These guidelines aim to provide support for voluntary action by ASEAN member states (AMS) and ASEAN bodies, in particular the ASEAN Sectoral Working Group on Crops (ASWGC) and the Lao facilitated Initiative on Agroecology for ASEAN (LICA) established to support agroecology transitions in ASEAN, to scale up and scale out agroecology transitions. It highlights seven key agroecology transition leverage points including (1) planning; (2) working with farmers; (3) value chain interventions; (4) multi-stakeholder engagement; (5) facilitating knowledge exchange; (6) a research agenda for change; and (7) financing. Each leverage point outlines possible voluntary interventions which may be considered and adapted by each country to suit national circumstances and priorities, if deemed to be applicable.

The guidelines also support the strengthening of cross-sectoral exchanges within relevant ASEAN structures and point to key resources that can be used by policymakers to operationalize agroecology transitions.

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Acronyms

ASEAN	Association of Southeast Asian Nations
ASWGC	ASEAN Sectoral Working Group on Crops
AMAF	ASEAN Ministers for Agriculture and Forestry
AMS	ASEAN Member States
CFS	Committee on World Food Security
CSA	Community Supported Agriculture
CSO	Civil Society Organization
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organization of the United Nations
FFS	Farmer Field School
GAP	Good Agricultural Practices
GHG	Greenhouse Gas
HLPE	High Level Panel of Experts
ICT	Information and Communication Technology
IPM	Integrated Pest Management
LICA	Lao Facilitated Initiative on Agroecology for ASEAN
M&E	Monitoring and Evaluation
MSME	Medium, Small and Micro Enterprise
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organization
PGS	Participatory Guarantee System
SDG	Sustainable Development Goal
SME	Small and Medium Enterprises
SOM-AMAF	Senior Official Meetings of the ASEAN Ministers for Agriculture and Forestry
SWG	Sectoral Working Group
ToC	Theory of Change
VGGT	Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests

Agroecology: definitions and scope

Agroecology elements and principles

Agroecology supports the transformation of food systems with a goal of achieving ecological, economic and social sustainability. Agroecology stresses:

- ✓ **Optimizing interactions:** optimizing the interactions between plants, animals, humans and the environment in agricultural planning and farming practices, and knowledge systems;
- ✓ **Social equity:** promoting social equity from the perspective of producers and consumers, and other actors along the value chain; and
- ✓ **Holistic approach:** the implementation from field and farm, to landscapes, to farming communities; linking rural and urban communities and sectors, taking a holistic approach to the ecological, sociocultural, technological, economic and political dimensions of food systems (Tittonell, 2023).

In 2019, the 197 members of the Food and Agriculture Organization of the United Nations (FAO) endorsed the 10 elements of agroecology as a guide to agroecology vision. These consist of Diversity, Synergies, Efficiency, Resilience, Recycling, Co-creation and Sharing of Knowledge, Human and Social Values, Culture and Food traditions, Responsible Governance, Circular and Solidarity economy.

These 10 elements are complemented by a set of 13 Principles of Agroecology, including Recycling; Input Reduction; Soil Health; Animal Health; Biodiversity; Synergy; Economic Diversification; Co-Creation of Knowledge; Social Values and Diets; Fairness; Connectivity; Land and Natural Resource Governance; and Participation. These 13 Principles were proposed by the High-Level Panel of Experts of the Committee of World Food Security (CFS-HLPE), giving greater emphasis to soil and animal health and fairness in food systems, particularly for small-scale food producers (HLPE, 2019).

Agroecology transitions

Agroecology transitions are grounded in the greater application and integration of the 10 elements and 13 principles of agroecology, fostered by connected knowledge, technology, market, policy and institutional innovations, to drive food systems transformation.

Progress on agroecology transitions can be assessed by increasingly deep or widespread applications of these principles and elements along food value-chains, resulting in sustained and increased production of food that:

- promotes farmer prosperity
- is safe, diverse, nutritious, and affordable
- is in demand by consumers
- is good for agroecosystems and the climate.

Agroecology transitions can be promoted from varying starting points. Different farming systems and social-cultural contexts require different transition pathways and tools. Agroecology transitions from subsistence agriculture emphasize connections to market, harnessing and building farmer knowledge, organization and capacity, and sustainable mechanization, for example. Agroecology transition pathways from industrial agriculture would require reducing chemical inputs, crop diversification and “re-localization” of farming systems.

The CFS-HLPE proposed a series of policy recommendations of agroecological and other innovative approaches for sustainable agriculture and food systems, providing a valuable framework for policy development (HLPE, 2019).

In the ASEAN context, Table 1 below details how agroecology transitions can contribute to the Vision and Strategic Plan of ASEAN Cooperation in Food, Agriculture and Forestry (2016-2025). While guidelines and roadmaps exist to steer progress towards the achievement of each of the goals identified, greater application of the elements and principles of agroecology can provide additional support in all of these areas and, crucially, create synergies between them.

Table 1. Contribution of agroecology to the Vision and Strategic Plan of ASEAN Cooperation in Food, Agriculture and Forestry (2016-2025)

Vision and Strategic Plan of ASEAN Cooperation in Food, Agriculture and Forestry, 2016–2025		
Vision: A competitive, inclusive, resilient and sustainable food, agriculture, and forestry sector integrated with the global economy, based on a single market and production base contributing to food and nutrition security and prosperity in the ASEAN community.		
Goals	**Contribution of agroecology**	**Guidance documents**
Ensuring equitable, sustainable and inclusive growth	Promoting the interests of small producers, especially the role of women in food systems; supporting the development of value chains for safe and healthy products	ASEAN Framework to Support Food, Agriculture and Forestry Small Producers, Coops and MSMEs to improve product quality (2021)
Alleviating poverty and eradicating hunger	Reducing input costs; preventing losses due to pests and diseases; improving stability of incomes for producers and food supplies for consumers	ASEAN Integrated Food Security Framework (2020)
Ensuring food security, food safety and better nutrition	Minimizing the use of toxic chemicals; promoting dietary diversity; protecting traditional varieties; supporting the development of organic markets; integrating agriculture and nutrition training	ASEAN Regional Guidelines for Sustainable Agriculture (2022); ASEAN Organic Standards (2014); ASEAN GAP modules (2006 onward)
Deepening regional integration	Sharing scientific knowledge and practical experience through regional working groups, and networks of research, education and producer organizations	Action Plans for ASEAN Working Groups including the ASEAN SWG on Crops (ASWGC), ASEAN Technical Working Group on Agricultural Research and Development (ATWGARD), ASEAN SWG on Agricultural Training and Extension (AWGATE), ASEAN SWG on Agricultural Cooperatives (ASWGAC), ASEAN Working Group on Social Forestry (AWG SF) and ASEAN SWG on Livestock (ASWGL)
Enhancing access to global markets and finance	Supporting the application of global certification and verification schemes that provide premium prices or other financial incentives for quality production and responsible agribusiness.	ASEAN Guidelines on Promoting Responsible Investment in Food, Agriculture and Forestry (2018)
Increasing resilience to, and contributing to mitigation and adaptation of climate change, natural disasters and other shocks	Protecting soil, water and biodiversity essential for resilient production systems; keeping carbon in the soil and reducing methane emissions; supporting diversity in farming systems to reduce impacts of disasters	ASEAN Regional Guidelines for Promoting Climate Smart Agriculture Practices, Vols I, II, III (2015, 2017, 2023)
Achieving Sustainable Forest Management	Promoting agroforestry as a win-win for people and planet; implementing integrated landscape management	ASEAN Guidelines for Agroforestry Development (2018)

Agroecology transition guidelines

The guidelines identify seven leverage points to scale up and scale out agroecology transitions. These actions depend on the transition's starting point and the national context and should be voluntarily adapted to each specific situation.

The Annexes at the end of the guidelines provide key resources to support their implementation:

- Annex A. Theory of change
- Annex B. Monitoring & Evaluation (M&E) for agroecology transitions
- Annex C. Institutional resources for agroecology transitions
- Annex D. Agroecology Q&A
- Annex E. Contribution of agroecology to the SDGs
- Annex F. Agroecology examples and evidence from ASEAN countries
- Annex G. The role of LICA in agroecology transitions
- Annex H. Multilevel governance and policy coherence for agroecology transitions
- Annex I. Participatory land use planning
- Annex J. Some areas for prioritizing agroecology transitions
- Annex K. Farmers rights as stated in the International Treaty on Plant Genetic Resources
- Annex L. Community-supported agriculture (CSA)
- Annex M. Participatory Guarantee Systems (PGS)
- Annex N. Farmer Field Schools (FFS)
- Annex O. Sustainability finance models with the potential to support agroecological transitions

1. Planning for agroecology transitions

2. Working with farmers

3. Promoting transitions across the agrifood value chains

4. Capacity building and knowledge sharing

5. Multistakeholder engagement

6. Developing a research agenda

7. Financing agroecology transitions

1. Planning for agroecology transitions

"Agroecology transition policy is about policy for scaling up. A policy is successfu if upscaling is possible - not one copy to be used everywhere, but with successfu adaptation."

"The best source of information for you to develop a relevant and good policy is from the stakeholders who will be affected by the policy. There has to be an assessment of their needs."

– *Quotes extracted from interviews with policymakers*

Agroecology transitions require support from agricultural planning, food systems transformation pathways and other planning instruments that influence food systems.

Planning for agroecology transitions involves setting the right targets, promoting agroecology transitions in specific landscapes, formulating coherent policies and strategies, and ensuring that environmental, social, and economic outcomes are well integrated. The planning process must involve relevant sectors and stakeholders to create synergies and co-benefits across farming and agrifood systems while anticipating and mitigating trade-offs. Agroecology transitions are best planned at the landscape or territorial scale.

Four **guidelines** are outlined to support planning for agroecology transitions:

- Guideline 1.1 Formulate coherent policy and better targets for agricultural planning through agroecology
- Guideline 1.2 Engage stakeholders in planning processes
- Guideline 1.3 Apply a landscape or territorial approach
- Guideline 1.4 Engage the private sector and strengthen planning rules for agribusinesses

Guideline 1.1 Formulate coherent policy and better targets for agricultural planning through agroecology

- ✓ Ensure that national policy instruments on agrifood systems integrate targets that support agroecology transitions.
- ✓ Accelerate agroecology transitions by promoting sustainable farming and food systems along the agroecological principles *within* the existing planning framework, supplemented by additional plans that might be needed.
- ✓ Strengthen intersectoral and cross-scale collaboration to govern agroecology transitions.

To achieve this, AMS may consider:

- Setting targets for sustainable markets, agribusiness and rural transformations towards:
  - Restoring agroecosystem health, soil health and land resources.
  - Better production – diversification, quality, safety of products for both export and domestic markets.
  - Empowering farmers – diversification of farmer incomes, increased farmer incomes, access to resources, uptake of agroecology practices and technologies, incentivizing young farmers.
  - Healthy consumers – diversity of diets, nutrition awareness, affordability of healthy produce.
- Supporting each target by specific policies to promote technological and interconnected innovations, and peer learning.
- Strengthening horizontal policy coherence across sectors, vertical policy coherence among different levels of governance (see Annex H), as well as temporal policy coherence addressing resource allocation and implementation over time, including through multistakeholder platforms.

Guideline 1.2 Engage stakeholders in planning processes

- ✓ Build stakeholder ownership for transition and mobilize resources, defining realistic but ambitious targets with them. This entails using the right methods for engaging stakeholders: choosing from surveys, focus group discussions, advisory panels, workshops or consultations, among other methods.
- ✓ Foster collaborations and exchanges, and long-term partnerships and coalitions with a focus on agroecology (e.g. regional initiatives like LICA are instrumental in fostering and facilitating cross-country sharing of experiences and knowledge).

To achieve this, AMS may consider:

- Mapping the stakeholders who are most aligned with key targets.
- Starting with a thorough assessment of the current situation, including strengths, weaknesses, opportunities, and threats (SWOT analysis) in the target areas (e.g. human health, soil health, environmental impacts, resilience) at landscape/subnational, national, and even regional levels.

Guideline 1.3 Apply a landscape or territorial approach

- ✓ Foster planning processes that ensure coherent intervention at different landscape levels, recognizing that this is an instrumental scale at which to achieve agroecological benefits.
- ✓ Ensure landscape diversity, which is essential to the maintenance of naturally occurring ecosystem services – such as pollination, erosion control, and nutrient recycling – thereby contributing to both productivity and sustainability.
- ✓ Harness the potential of landscape management approaches for balancing competing demands and integrating policies for multiple land uses, thereby supporting inclusive multistakeholder engagement (see guideline 5).

To achieve this, AMS may consider:

- Mapping the variety of landscape management and territorial approaches in support of agroecology transitions, and engaging stakeholders to develop these. Examples include participatory land-use planning (see Annex I), jurisdictional approaches, integrated landscape approach, watershed management planning, forest restoration planning, multisectoral territorial planning, and even urban food system planning.
- Defining the boundaries of the landscape or territory based on natural features, administrative boundaries, or specific ecological or sociopolitical criteria.
- Performing, where applicable, integrated landscape assessment, understanding the key features of the area (including land uses, biodiversity, ecosystems, and human communities), and identifying the main challenges (such as habitat fragmentation, biodiversity loss, water depletion, land degradation or socioeconomic inequalities); including zoning of production types (e.g. organic, sustainable commodity sourcing, perennial, grazing), forest and biodiversity hotspots (see landscape approaches developed among others by ADB, FAO or GIZ), .
- Supporting participatory approaches to identify technical and organizational levers and pathways, and to prioritize interventions, including measures that help protect or regenerate vulnerable and degraded areas (see Annex J for areas to prioritize agroecology investments).

► To go further:

- Landscapes Futures – What are landscape approaches
- FAO. 2017. Landscapes for Life: approaches to landscape management for sustainable food and agriculture
- ADB. 2017. Sustainable Land Management in Asia: Introducing the Landscape Approach
- GIZ. 2023. Agroecology: Making Ecosystem-based Adaptation Work in Agricultural Landscapes
- FAO, Agroecology Coalition. 2023. The interface between agroecology and territorial approaches for food systems transformation (Agroecology Dialogue Series, Brief No.1)

Guideline 1.4 Engage private sector and strengthen planning rules for agribusiness

- ✓ Strengthen the coordination with large-scale agribusiness using public private partnerships and multistakeholder platforms to orientate private sector commitments and investments towards sustainable agriculture and food systems.
- ✓ Align corporate sustainability programmes, and responsible sourcing investments and instruments with agroecological pathways based on country's and communities' needs. This may be carried out within national platforms and at subnational levels within landscape approaches.

To achieve this, AMS may consider:

- Combining public and private efforts to strengthen farmer skills and risk management capacity to drive agroecology transitions (e.g. through adapted environmental and social agrifood product standards; see guideline 3), revisited extension services (see guideline 4), tailored financial incentives for farmers (see guideline 7).
- Strengthening planning regulations governing land concessions and agrifood investments (e.g. investments in processing factories that may precipitate forest encroachment, soil erosion or water contamination).
- Co-investing in infrastructure that supports sustainable agriculture, including water management systems, renewable energy sources, and sustainable transport and logistics (see guideline 2 on connectivity needs).

Photo: Selecting high quality coffee adapted to agroforestry and local conditions, ASSET project, 2021

2. Working with farmers

"We cannot expect farmers to switch entirely to organic farming and abandon conventional methods immediately. There will be a cycle of adjustments... We should be willing to pay the 'tuition fee'... for farmers to transition."

– *Quote extracted from interview with policymaker*

In any agroecology transition, farmers are innovators, knowledge holders and change agents, and hence, risk takers. This section provides guidance on empowering farmers (and their organizations) and creating the conditions under which they can embark on agroecology transitions and be the central actors as stewards and managers of agroecosystems.

Four **guidelines** are outlined to support working with farmers:

- Guideline 2.1 Strengthen farmers', women's and youth organizations and their active engagement in agroecology policy processes
- Guideline 2.2 Create enabling conditions to support farmers in transition
- Guideline 2.3 Adopt a rights-based approach to establish a safe legal and institutional environment that supports farmers in transitioning
- Guideline 2.4 Harness the potential of digital technologies and data/ knowledge management systems to support farmers in agroecology transition

Guideline 2.1 Strengthen farmer's, women's and youth organizations and their active engagement in agroecology policy processes

- ✓ Support the representation and active participation of farmers' organizations in policy processes (development, implementation and monitoring) and multistakeholder platforms (see guideline 1 and guideline 5.4).
- ✓ Support women's and youth organizations and effective participation of women and youth in farmers' organizations.

To achieve this, AMS may consider:

- Strengthening national and regional farmer networks such as the **Asian Farmers Association for Sustainable Rural Development (AFA)** and its member organizations at the national level.
- Identifying farmer, women and youth champions and improving their capacities for collective action (see Global Action Plan of the UN Decade of Family Farming).

►To go further:

- FAO and IFAD. 2019. United Nations Decade of Family Farming 2019-2028. Global Action Plan. Rome.

Guideline 2.2 Create enabling conditions to support farmers in transition

- ✓ Better recognize and harness the potential of intercropping and farm diversification as well as diversified rural livelihoods and economies (see guideline 3 on local value adding)
- ✓ Contribute to an enabling market environment for farmers:
  - enhance the accessibility of small farmers, including women and youth, to market information systems, and complement it with strategic information about subsidies and existing legislation.
  - directly support market demand for local sustainable agricultural products via revisiting or reforming public procurements (see guideline 3).
- ✓ Provide tailored safety nets in welfare schemes and insurance schemes for farmers piloting the transition.

To achieve this, AMS may consider:

- In partnership with private companies, leveraging the potential of low-cost and low-tech approaches with a high level of penetration (e.g. SMS text) to send customized alerts on weather, crop diseases and infection risk, and agricultural rules and regulations.
- Supporting affordable mechanisms for small farmers' access to timely and transparent market and price information through ICT, and small farmers-adapted market information systems, to enable informed decision making on what, when and where to produce and sell.
- Reviewing insurance schemes and social risk mitigating measures against the assessment of actual farmers' risk situation when transitioning.

Guideline 2.3 Promote a safe legal and institutional environment

- ✓ Provide measures to respect the provisions of the **United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP)**, where appropriate.
- ✓ Provide public policy and legal regulations to support farmers to conserve, sustainably use, exchange and dynamically manage agrobiodiversity.
- ✓ Promote and consider the Office of the United Nations High Commissioner on Human Rights guide **A Human Rights-Based Approach to Data**, in respect of farmers data management, where applicable

To achieve this, AMS may consider:

- Supporting awareness raising to public authorities and rights-holders on the principles and application of the **UNDROP** so that rights to natural resources and means of production are recognized and respected.
- Recognizing the roles and rights of farmers in the conservation and development of plant genetic resources (native seeds, landraces, neglected and underutilized species).
- Strengthening regulations on farmers' control over their data, including how it is used, processed, and secured through levers such as education and regulation, as necessary. Ensure accountability for data privacy with appropriate penalties.
- Referencing to the **Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT)**.

►To go further:

- United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas: resolution/ 2018
- Farmers' Rights under the International Treaty on Plant Genetic Resources for Food and Agriculture
- FAO. 2022. Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security

Guideline 2.4 Harness the potential of digital technologies and data/knowledge management systems

- ✓ Leverage the potential of digital technologies to reduce the information gap on market and price, help reconnect farmers and consumers, inform on innovative practices from varieties of farmers and stakeholders on the ground, foster horizontal knowledge sharing and hybridization.
- ✓ Strengthen innovation platforms and promote digital technologies and applications that facilitate wider networking among farmers and wider participation in multistakeholder dynamics.

To achieve this, AMS may consider:

- Strengthening digitalization and open-source online platforms to support documenting, aggregating and sharing practices, innovation and local knowledge.
- Leveraging digital technologies to collect, store and share traditional and ancestral knowledge among farmer communities (hybridization of local and Indigenous knowledge with digital technologies fitting tech-savvy younger generations).
- Supporting cooperative data platforms that abide to farmers' rights on data and facilitating collaborative farm data management by technology providers, researchers and other stakeholders together with farmers (see guideline 4).

►To go further:

- Grow Asia Digital Directory: Digital Solutions for Smallholder value Chains in ASEAN

3. Promoting transitions across agrifood value chains

"Empowerment of farmers means that they are empowered in the marketplace."

"We should be able to create a movement not only building on solidarity, but also understanding the needs of the consumer groups, including those from marginalized rural areas."

– *Quotes extracted from interviews with policymakers*

Supporting domestic market development and short value chains for agroecological products and inputs, creating an enabling environment for inclusive markets, and adapting public regulations on food safety and quality standards are critical to differentiate agroecological products and empower economically consumers and farmers. This section also provides complementary guidance on consumer-oriented policies and trade-related instruments.

Six **guidelines** are outlined to support transitions across agrifood value chains:

- Guideline 3.1 Support domestic market development and short value chains for agroecological products
- Guideline 3.2 Create an enabling environment for domestic inclusive value chain transformations
- Guideline 3.3 Adapt public regulations on food safety, quality standards and certification to support agroecology product differentiation and consumer conscious choices
- Guideline 3.4 Support local value chain development for inputs (seeds, organic nutrients) and equipment and machinery
- Guideline 3.5 Consumer-oriented policies: health, nutrition sensitive measures
- Guideline 3.6 Reform trade-related instruments, price support and sourcing policies

Guideline 3.1 Support domestic market development and short value chains for agroecological products

- ✓ Support diversified market developments to enhance both agroecology farmers' access to varied outlets and consumers' access to diverse food options.
- ✓ Support local public procurement schemes from agroecological farms.
- ✓ Support local consumer-led marketing schemes such as **Community Supported Agriculture (CSA)** (see Annex L).

To achieve this, AMS may consider:

- Providing public facilities to host farmers' markets, fairs and festivals for diversified sustainable local farmers.
- Incentivizing public administration (e.g. healthcare system, schools) to buy locally agroecologically produced food (see FAO publications and work on **public food procurement** for sustainable food systems and healthy diets)
- Based on concrete experiences, adapting public procurement provisions and regulations to further encourage their spreading.
- Creating differentiated space for agroecological products in public traditional markets.

►To go further:

- Constructing markets for agroecology – An analysis of diverse options for marketing products from agroecology
- Public food procurement for sustainable food systems and healthy diets – Vol. 1
- Public food procurement for sustainable food systems and healthy diets – Vol. 2
- The CSA Farmer to Farmer Booklet (Urgenci)

Guideline 3.2 Create an enabling environment for domestic inclusive value-chain transformations

- ✓ Invest in digital technology and support diverse e-commerce business models for marketing agroecology products domestically.
- ✓ Invest in transport (road, rail, air, sea) to improve smallholder agroecology farmers' connectivity (see guideline 1).
- ✓ Empower small farmers and their organizations in the value chains (see also guideline 4).
- ✓ Strengthen support to marketing cooperatives via capacity development, investment in shared equipment, and support farmers' organizations that can enhance farmers' bargaining powers at food markets.
- ✓ Incentivize large retailers to procure locally diversified food products from agroecology farmers.
- ✓ Assist small to medium enterprises in processing, and tourism operators in adding value to agroecology products and promoting agrotourism and local gastronomy.

To achieve this, AMS may consider:

- Using ICT and social media to empower SMEs, small farmers and their organizations to act as connectors and information brokers in developing local markets for agroecological products.
- Supporting applications and platforms for direct product sale and developing more efficient community-supported agriculture (see for example Open Food Network).
- Supporting wholesaling enterprises and platforms consolidating agroecology farmers' production for urban markets with added-value activities and marketing strategies.

►To go further:

- Innovator's Handbook: Enabling Sustainable Food Systems
- Open Food Network

Guideline 3.3 Adapt public regulations on food safety, quality standards and certification to support agroecology product differentiation and consumers' conscious choices

- ✓ Make food safety and trade regulation more adapted to the conditions and outputs of agroecology operators, including farmers.
- ✓ Establish quality standards, and certification schemes guaranteeing them, adapted to agroecology farming systems and value chains.
- ✓ Adapt quality assurance instruments (standard, certification, internal control, traceability) and labels to the markets targeted (domestic versus export) and actors' needs and capacity.
- ✓ Promote transparency mechanisms and traceability systems throughout value chains.

To achieve this, AMS may consider:

- Revising or establishing quality standards, labeling, and legislation for food (see guideline 6) through participatory, inclusive, and scientifically rigorous processes, focusing on content, sourcing, and agricultural practices, ensuring alignment with environmental, nutritional, health, and social equity criteria across the value chain.
- Liaising of agroecological farmers with trade and food-safety authorities that accommodate their size, production capacity and specificities.
- Recognizing and supporting **Participatory Guarantee Systems** as a valid means to certify organic and other agroecology products for local and domestic markets (see Annex M)
- Harmonizing the testing of standards across countries such as regional testing as opposed to national body testing, to assure safety and fast distribution of new technologies.

Guideline 3.4 Consumer oriented policies: health, nutrition sensitive measures

- ✓ Combine direct individual consumer incentives to support healthy consumer behaviors and diversified diets with orientating supply-based value chain transformations (see guideline 3.1 and guideline 3.2) to create a food environment that modifies collective norms regarding food consumption.
- ✓ Support consumers' access to timely, clear and reliable information about the nutritional and disease risks associated with their food choices (see also guideline 3.3).
- ✓ Strengthen consumers' organizations and consumer advocacy.

To achieve this, AMS may consider:

- Promoting Food Labelling and Advertising Laws that inform consumers on the nutritional content of food products
- Fostering consumer awareness-raising campaigns (see guideline 4.4).
- Embracing traditional and new communication tools to enhance food safety through better transparency, effective dialogue and cooperation.
- Building on scientific knowledge and evidence (including on emphasizing the link between local diversified products, agrobiodiversity and diversified healthy diets).
- Including nutrition-sensitive programming interventions (e.g. training on achieving balanced diets) in social protection programmes.

Guideline 3.5 Support local value chain development for inputs (seeds, organic fertilizers, bio-insecticides, feeds), equipment and machinery

- ✓ Facilitate access to local agroecological inputs for small farmers, including reforming support policies on inputs (see guideline 3.6)
- ✓ Support creating or strengthening local organic input value chains (organic fertilizers, bio-insecticides, feeds) that valorize farm by-products, thereby reducing food waste and improving resource use efficiency, including support to crop livestock integration at territorial level.
- ✓ Support local seeds production, conservation and recognition to strengthen locally adapted seeds provision and markets (see guideline 2.2).
- ✓ Promote mechanisms to enhance farmers' access to appropriate, cost-effective and environmentally safe agricultural machinery and equipment.

To achieve this, AMS may consider:

- Improving the capacity to collect, process, transport farm by-products, thereby fostering systems such as crop livestock integration and supporting local organic input provision (e.g. manure, compost, silage, feed) (see guideline 6).
- Supporting local access to production technologies and inputs (forage seeds, effective micro-organisms) and small-scale equipment (bags, choppers, pellets) that improves conservation and transport capacities, and quality for animal feeds and organic fertilizers; and fostering large-scale adoption of crop-livestock integration.
- Subsidizing organic input provisions to help support local and domestic value chain development.
- Ensuring fair price of water and energy to all stakeholders in the value chain including smallholder farmers.
- Supporting farmers' organizations in leveraging the inputs needed to agroecology transitions including alternative inputs, such as cover crop seed.

Guideline 3.6 Reform trade-related instruments, price support and sourcing policies

- ✓ Use approaches such as true cost accounting (see guideline 6.1) to better assess the negative and positive externalities of different farming systems and value chains (including agroecology-based ones) and differentiate agrifood outputs and inputs based on these assessments.
- ✓ Reform import and export tax schemes, non-tariffs barriers and price policies to better reflect true costs and values into trade and domestic markets for inputs and outputs and enhance the competitiveness of sustainable agriculture and value chains.
- ✓ Foster collaboration between ASEAN countries to align reforms of trade policies based on true cost assessment towards strengthening the ASEAN common market.
- ✓ Draw on and help orientate corporate sustainability commitments of global commodity actors to strengthen sustainability-based trade conditionalities.
- ✓ Adapt contract farming and sustainable sourcing regulations to foster value chain recognition of the variety of farmer sustainability practices.

To achieve this, AMS may consider

- Reducing tariffs for inputs and food products that the country wishes to encourage farmers and citizens to use (e.g. nutritious foods, inputs safer for human consumption, etc.).
- Reducing or eliminating price support to highly intensive agriculture with no proven environmental or social benefits or proven to be degrading practices; conversely, pushing for lower customs duties and premium pricing for agrifood products following sustainable standards (see also guideline 3.4).

4. Capacity building and knowledge sharing

"When everyone has awareness, the adaptation process can be scaled up."

"Agroecology should be included in the curriculum. It is important to have basic knowledge of how to take care of our lands"

– *Quotes extracted from interviews with policymakers*

Agroecology transitions require renewing and strengthening agroecology literacy (essential values, knowledge and skills) among the different actors in agriculture and other relevant sectors. The shift requires interdisciplinary knowledge and cross-sectoral collaboration drawing from technical, social and sustainability knowledge systems. It covers the different dimensions of food systems and consists of collective action, territorial autonomy, circular economy, environmental stewardship, food sovereignty, food mileage, climate justice and other themes.

Agroecological systems and practices are site-specific and knowledge and labor intensive. Adaptation of these systems and practices requires access to critical skills and information, incremental learning and knowledge sharing, and necessitate orientating the competencies of agriculture service providers towards generation of context-specific and locally relevant solutions. The process calls for improvement in the managerial and technical skills of farmers through collaborative, inclusive and experiential learning processes. It entails new forms of interactions, organization, and agreement between a range of actors, building on the co-creation of knowledge that blends local indigenous knowledge with institutional knowledge among stakeholders.

Four **guidelines** are outlined to support capacity building and knowledge sharing:

Guideline 4.1. Build farmers and rural communities' capacity, and facilitate farmers-to-farmers learning and exchange for agroecology transition

- ✓ Empower farmers in sharing experiences and learnings with peers and other stakeholders, including via tailored capacity development and exchange visits
- ✓ Foster **Farmer Field Schools (FFS)** (see Annex N) and farmer learning centers.

To achieve this, AMS may consider:

- Adding the FFS approach to national extension systems and alignment with long-term community development initiatives.
- Encouraging intergenerational networks of agroecological producers bridging experienced farmers with new entrants.
- Supporting capacity building of farmers with leadership capabilities and/or pedagogical skills, and supporting farmers and Indigenous communities to document and share their traditional knowledge.
- Facilitating study tours and exchange visits.
- Utilizing varied media (print, social media, TV, radio, mobile phones and apps) to improve farmers' access to information, services and markets.

►To go further:

- Farmers taking the lead - Thirty years of farmer field schools
- TOOLKIT: Peasant Agroecology Schools and the Peasant-to -Peasant Method of Horizontal Learning
- Platform: Global Farmer Field School Platform

Guideline 4.2 Reshape extension and advisory services

- ✓ Implement community-based approaches that improve access to extension services for small farmers, in particular women, youth, Indigenous Peoples, and other vulnerable people.
- ✓ Foster extension processes that build on community planning, action research (see guideline 6.2) and organizational development, such as informal networks of farmers' groups, to scale up innovations (ex. green extension).
- ✓ Prioritize public goods associated with agriculture, including advice to producers on climate resilience, soil and water management, farmland biodiversity, and food security.

To achieve this, AMS may consider:

- Making use of a landscape approach in the planning and implementation of extension services, thereby promoting diversity and synergies within farming and food systems (see guideline 1).
- Providing incentives and training for village volunteers who may be more effective in reaching women, youth and ethnic minorities than government extension workers.
- Developing national and regional Centers of Excellence on specific aspects of agroecology and food systems transformations that will act as knowledge hubs, linking extension, research, farmers' organizations and the private sector (see guideline 6)
- Strengthening the role of the ASEAN Sectoral Working Group on Agricultural Training and Extension to include cross-sectoral meetings and exchanges with other working groups on agroecology service provision.
- Utilizing case studies and training materials compiled by the Global Forum for Rural Advisory Services and subordinate networks, including the Asia-Pacific Islands Rural Advisory Services (APIRAS) Network (see below).

►To go further:

- Learning kit: New Extensionist Learning Kit
- Good practice note: Promoting sustainable agriculture through green extension in Lao People's Democratic Republic
- Brochure: Enabling extension and advisory services to promote agroecology
- APIRAS Repository of Agroecology Course Curricula

Guideline 4.3 Mainstream agroecology in vocational training, higher education and academic curricula

- ✓ Build collaborations between higher education and research agencies to help mainstream scientific knowledge on agroecology in vocational and academic training curricula.
- ✓ Build partnerships between farmers' organizations and universities to co-develop research and higher education agendas adapted to agroecology transition needs.

To achieve this, AMS may consider:

- Supporting short courses and non-degree programmes on agroecology targeting rural youth who could emerge as agroecology champions and entrepreneurs (see guideline 2).
- Prioritizing agricultural curricula and training programmes for educators and scientists that combine technical and social sciences.
- Building on agroecology-related regional and global research-based networks and platforms to support national, regional and international faculty exchanges and academic conferences on agroecology (see guideline 6).
- Fostering the inclusion of agroecological performance measurement tools that approach the diversity of agricultural and food systems in agricultural curricula (see guideline 6 and Annex B).
- Incentivizing higher education institutions to contribute to collaborative efforts of knowledge management platforms to identify, pool, and increase accessibility to documentary resources and multi-media packages of successful applications of agroecology.

►To go further:

- Policy brief: Mainstreaming agroecology in agricultural education
- Policy brief: Being "agricool": Supporting ASEAN youth and tertiary student futures for sustainable agrifood system learning and livelihoods to meet the Sustainable Development Goals (2021)

Guideline 4.4 Enhance public awareness on Agroecology

- ✓ Promote agroecology education for children and youth
- ✓ Optimize the use of social media in creating awareness of the environmental, economic, health and nutrition benefits of agroecology transitions.
- ✓ Facilitate government support to public awareness campaigns through policy interventions, financial support and public-private partnerships.
- ✓ Facilitate collaboration among different stakeholders to increase visibility and accessibility of agroecology transition initiatives.

To achieve this, AMS may consider:

- Conducting regional and national awareness campaigns in collaboration with government agencies, industry associations, non-profit organizations and consumer advocacy groups.
- Integrating agroecology education and farm-to-school programmes into school curricula to promote awareness and appreciation for agroecology transitions.
- Raising public awareness – both in rural and urban areas – on agroecological farmers' contributions to public health, preservation of land, biodiversity conservation and management, and genetic diversity traditions.

Photo: ASSET project, 2023

5. Multistakeholder engagement

"Agroecology is the entry point … we are coming together and thinking in a more systematic way with an agroecology approach."

"At the national level, we need to create these platforms, these mechanisms, not just for solidarity and exchange of inputs, but to really get our feet on the ground to have the scale, and from the experiences of all, create a bigger voice."

– *Quotes extracted from interviews with policymakers*

Agroecology transitions are supported by promoting new connections and relationships between actors in farming systems and creating conditions for shifting entrenched ways of doing things. Mobilizing the knowledge, resources and energies of stakeholders to improve agroecosystem and consumer health and farmer prosperity requires engagement of stakeholders that is purposeful, inclusive, proactive and transformative.

Four **guidelines** are outlined to support multistakeholder engagement:

- Guideline 5.1 Identify and co-develop clear objectives for engaging stakeholders
- Guideline 5.2 Conduct stakeholder mapping and develop understanding of their perspectives and interests
- Guideline 5.3 Institutionalize engagement
- Guideline 5.4 Move beyond consultation to support self-organization

Guideline 5.1 Identify and co-develop clear objectives for engaging stakeholders

- ✓ Ensure that engagement of stakeholders is purposeful and efficient.
- ✓ Co-develop objectives with stakeholders.
- ✓ Align engagement objectives with national targets and with the need to strengthen innovation.

To achieve this, AMS may consider:

- Better understanding the barriers and opportunities for agroecology transitions.
- Mobilizing stakeholders to support the delivery of targets for agroecology transitions as defined in national plans.
- Establishing shared action programmes to deliver on national plans for agroecology transitions, if applicable. Areas of focus can include each innovation arena – knowledge, technology and market and value chain innovations, or each or any of the transition leverage points.
- Defining feasible indicators to help monitor progress against targets (see Annex B).

Guideline 5.2 Conduct stakeholder mapping, and develop understanding of their perspectives and interests

- ✓ Ensure that all stakeholders are given adequate consideration.
- ✓ Develop a sound basis for stakeholder engagement that reflects the characteristics of each stakeholder group, in line with the objectives identified.

To achieve this, AMS may consider:

- Identifying and listing stakeholders at local, subnational, national, and regional levels, including specific multistakeholder fora and initiatives that could either support or hinder change.
- Identifying marginalized or vulnerable stakeholders, as well as emerging sustainability actors such as alliances --e.g. ISEAL, IDH Sustainable Trade Initiative (IDH), Common Code for the Coffee Community (4C), UTZ/Rainforest Alliance, Grow Asia, or International Federation of Organic Agriculture Movements (IFOAM) -- and agribusiness entities. Gaining insights into stakeholders' engagement history and their trust levels toward the government and other stakeholders.
- Identifying barriers to engagement that may impede marginalized groups' participation (e.g. language, perceptions of safety, gender, technology, sociocultural factors).
- Understanding the positions of different stakeholders regarding transitions to agroecology (supportive, resistant, or neutral). Also, pinpointing key advocates with moral authority to convene stakeholders and garner widespread support for the transitions. Developing tailored strategies for engaging and collaborating with particularly influential stakeholders, including local governments, producers' organizations, farmers' groups, and agribusinesses to mobilize resources, ideas, and human capital.

Guideline 5.3 Institutionalize engagement

- ✓ Arrange appropriate resources, time, and capacities to ensure proactive and sustained stakeholder engagement, effectively managing power imbalances.
- ✓ Ensure full support and recognition of engagement efforts by both leadership and frontline bureaucrats.
- ✓ Empower engagement champions with the necessary authority, resources, and support.

To achieve this, AMS may consider:

- Establishing formal multistakeholder platforms with socially inclusive representation, regular communication, and safe spaces for discussion, negotiation, and knowledge sharing. These platforms should support policy integration.
- Formalizing relationships with key stakeholder organizations, especially farmers' groups, ensuring clear contacts and opportunities for information exchange.
- Defining clear responsibilities and mandates within lead government agencies, providing necessary support and resources.
- Creating policies for stakeholder engagement, detailing responsibilities, decision making processes, principles, and including grievance mechanisms and feedback provisions.
- Developing empowering policies and regulations, ensuring legal recognition of key groups, such us women self-help group and removing barriers for engagement.
- Ensuring transparency and accountability in multistakeholder engagement, including using measures to balance power and align interests.

Guideline 5.4 Aim for transformative engagement beyond consultation

- ✓ Empower stakeholders, especially farmers, women, and youth, across four dimensions: voice and participation, capacity and resources, rights and access to justice, and strengthen social recognition and support through legal frameworks (see guideline 2).
- ✓ Set collaborative agendas for change by creating a shared vision for agroecology transitions to support national sustainable agriculture targets. Use "backcasting" and ToC exercises to make this vision a reality and mobilize stakeholders.

To achieve this, AMS may consider:

- Creating social infrastructure for change by supporting productive and non-traditional partnerships among stakeholders, including farmers' organizations, startups, youth and women's groups, research institutions, consumer protection groups, academic institutions, standards bodies (such as ISO), community groups, and NGOs.
- Fostering exchanges and joint programming among government departments and their partners, empowering agencies responsible for agriculture to collaborate with those handling trade, investment, health, youth employment, innovation, environment, biodiversity, tourism, rural development, education and communication.
- Building capacity to address sensitive topics and facilitating dialogue on conflicting positions to open opportunities for change.
- Mitigating power imbalances that hinder progress and empowering marginalized groups.
- Building trust through transparency, respectful communication, regular contact, and meaningful stakeholders' influence in decision making processes. Trust among stakeholders facilitates change and helps overcome entrenched positions.

►To go further:

- Rethinking Our Food Systems: A Guide for Multi-Stakeholder Collaboration

6. Developing a research agenda for agroecology transitions

"Technical support is easy; mass training is possible – but how to adapt agroecology to each context is what is missing. Research is needed with farmers to find the agroecology solutions that work."

"There needs to be evidence from the field that, with agroecology transitions, it will be possible to 1) scale up, 2) produce enough, and 3) export as needed."

– *Quotes extracted from interviews with policymakers*

Agroecology integrates modern science with traditional knowledge. Research plays a vital role in strengthening the credibility of practices developed by local communities and Indigenous Peoples. Research also helps actors develop a systemic and forward-looking vision at farm, landscape, and food system levels, and builds innovative pathways for transitions.

In turn, to transform research findings into widespread innovations and changes, renewed collaboration models between research systems and stakeholders – especially farmers and extension services – are essential. The private sector also plays a key, and often overlooked, role in research.

Five **guidelines** are outlined to support the development of a research agenda for agroecology transitions:

Guideline 6.1 Reshape research orientations to support agroecology transitions

- ✓ Strengthen public research systems at farm, landscape and food system levels.
- ✓ Prioritize research programmes that allow to assess and compare the economic performance of different farming and food systems and evaluate their broader environmental and social effects (including trade-offs). This entails better integrating systems research and sustainability sciences.
- ✓ Foster research on marginal lands and other agricultural systems identified as a priority for agroecology transitions.
- ✓ Support research programmes on innovation design and processes of adoption and scaling.
- ✓ Encourage research that recognizes and learns from farmers' and Indigenous knowledge systems and explores their hybridization with science-based approaches.

To achieve this, AMS may consider:

- Prioritizing research programmes on farm, livelihoods and land use diversification to foster economic, social and ecological resilience and long-term productivity at the landscape level.
- Supporting trajectories to maintain and enhance the integrity of agroecosystems, including the move from annual to perennial crops in areas with steep slopes, crop livestock integration, reduction in the use of and dependence on external inputs (see guideline 6.3).
- Investing in multidisciplinary research teams, building as needed on local and international experiences, to provide comprehensive assessment frameworks of farming and food systems (i.e. against yields, income generation, livelihoods betterment, food security, including nutrition and health dietary improvements, resource use efficiency and ecological soundness, equity, women empowerment, cultural appropriateness and resilience).

- Learning and adapting methodologies and tools to analyse agroecology performance (see Annex B and true cost accounting methods).
- Support, and better integrate in policy planning, research programmes that actually assess the performances and impacts of varied farming systems, land use/ landscape systems, and rural/ urban food systems against comprehensive assessment frameworks.

To go further:

► True cost accounting

Guideline 6.2 Foster innovative approaches of doing research and co-producing knowledge with a variety of actors

✓ Strengthen the continuum between research, knowledge sharing and capacity building (see also guideline 4).

✓ Coordinate efforts at national and ASEAN levels to identify and invest in Centers of excellence combining long-term experimental and practical training facilities and services.

✓ Prioritize participatory action research approaches and tools in national agricultural research systems to: 1) ensure farmers' and other stakeholders' participation in research design and implementation, and hence, enhance the capacity to develop locally relevant paths and solutions at farm, community, and food system levels; and 2) support and integrate knowledge production from farmer organizations, NGOs, and others.

✓ Strengthen science policy partnerships on agroecology and sustainable food systems at the local, national and ASEAN levels, in line with the food system transformations agenda.

To achieve this, AMS may consider:

- Fostering collaboration between national agricultural research systems and global and regional research-based partnerships and networks focused on agroecology and sustainable food systems.
- Investing in developing research capacity that combines technical expertise and scientific evidence with facilitation tools and brokering skills (including Futures studies and participatory Theory of Change). This will strengthen inclusive policy planning and monitoring through multistakeholder processes at national and landscape levels (linking with guideline 1, guideline 5 and Annex B).
- Supporting and better integrating research programmes into policy planning that assess the performance and impact of diverse farming systems, land use/ landscape systems, and rural/ urban food systems using comprehensive assessment frameworks.

To go further:

▪ Participatory theory of change and the agroecological transition

Guideline 6.3 Address farm scale agroecology research agenda

✓ Prioritize participatory action research with family farmers, rural communities, Indigenous Peoples, farmers' organizations, women's groups, youth or students, and local authorities and services.

✓ Co-design sociotechnical solutions at farm level with local stakeholders, building on agroecological principles.

To achieve this, AMS may consider:

- Co-designing long term on-farm trials with farmers in varied contexts, notably including diversification paths to provide grounded evidence on the relative technical and socioeconomic merits of different agroecological systems and practices, and helping co-design diversified cropping and livestock systems.
- Developing breeding programmes by scientists and variety selection programmes with farmers looking for crop characteristics (e.g. deep root systems, drought tolerance) that ensure their performances (yield, quality, resilience to climate) under specific growing conditions and agroecological practices (e.g. farm diversification, reduced chemical inputs).
- Supporting participatory action research on crop livestock integration, combining animal and crop science and building on re-use and circular economy principles.

- Pursuing participatory and systemic research on agroecological crop protection, targeting beneficial organisms to control pests, thereby prioritizing preventative measures instead of curative approaches.
- Supporting research on multi-functional service crops capable of regenerating degraded agroecosystems, reducing external inputs and contributing to productivity.
- Supporting research on low cost and low-tech mechanization to decrease drudgery (see also guideline 3).
- Co-designing, with farmer communities, agricultural machines, equipment, spatial tools and digital technologies (robotics, automatic sensors, farm Apps) for monitoring and adapting agroecological systems at farm and landscape levels (see also guideline 2.4).

Guideline 6.4 Address landscape-scale agroecology research agenda

✓ Prioritize research that addresses spatial and temporal dimensions at the landscape level: 1) to comprehend the relationships and implications of diversification patterns and crop and livestock management practices; and 2) to characterize ecosystem functioning and services and rural and urban livelihoods and communities' organizations.

To achieve this, AMS may consider:

- Prioritizing participatory action research in support of landscape approaches such as inclusive participatory land-use planning (see guideline 1.3) through:
  - Spatial tools such as medias to inform multistakeholder governance of landscape management (zoning) and integrate different perspectives, including landscape agroecology.
  - Participatory planning and monitoring tools to foster inclusiveness and local ownership, and integrate social and political perspectives.

Guideline 6.5 Address food system-scale agroecology research agenda at various levels

✓ Foster cross-sectoral food systems research in national research systems, including agricultural, health, environmental and social sciences, to fuel the science policy interface on food system transformations.

✓ Support collaborative research programmes that integrate agroecology into food system approaches to support food system policy planning and innovations design.

✓ Foster partnerships with research agencies and networks to support effective design and implementation of national action plans on food system transformations at national and subnational levels, and strengthen their coherence with the global agenda at ASEAN.

To achieve this, AMS may consider:

- Prioritizing collaborative programmes on adapting food system assessment methods to national and subnational policy needs (see guideline 1, guideline 5 and Annex B).
- Fostering research collaborations and local capacity development on data management systems and tools. This entails ensuring the collection, interoperability and use of coherent sets of data that enable comprehensive food system level assessment of the transitions.
- Supporting research that can accompany innovative local sustainable food system developments and strengthened short food value chains, such as territorial branding (through which local regions with specific resources and practices brand a set of products and services - including tourism activities - building on and sustaining a reputed place-name) and tailored quality standards and certification.
- Fostering research-based platforms on agroecology and food systems, and supporting the engagement of national research agencies in broader multistakeholder agroecology- and food systems-related networks.

►To go further:

- Guidance on strengthening national science-policy interfaces for agrifood systems
- CIRAD, FAO, EU. 2023. Transforming food systems: from assessment to policy

7. Financing agroecology transitions

"Financial institutions are encouraged to develop innovative financial mechanisms and insurance tools in support of investment in agriculture, especially appropriate solutions for smallholders, including those that are family farmers, that consider a long-term development perspective."

– *ASEAN Guidelines on Promoting Responsible Investment in Food, Agriculture and Forestry (RAI)*

Securing access to finance is essential for farmers to invest in agroecological transitions. In addition to direct financing and support, policymakers must adjust financial and investment regulations and instruments at both national and local levels within ASEAN.

The ASEAN RAI provides critical guidance to ensure that private sector investments do not exacerbate inequality, harm smallholders' livelihoods, or deplete natural resources. These guidelines offer key principles for financing institutions and funding entities when formulating their loan and grant policies, country's investment portfolios, and co-financing with others.

Green and responsible finance are rapidly growing, with diverse funding sources and instruments. Policymakers play a crucial role in guiding and piloting innovative approaches to harness the potential of sustainability finance. This supports the transitions on the ground, improves farmers' and rural livelihoods, and addresses needs and commitments related to climate action, health and nutrition, land restoration, biodiversity and ecosystem conservation.

Three **guidelines** are outlined to finance agroecology transitions:

- Guideline 7.1 Create an enabling framework to repurpose public and private fundings towards the transition
- Guideline 7.2 Build a coherent national agroecology strategy and accountable framework to direct international funding into the transition
- Guideline 7.3 Develop innovative financial models that address the needs of smallholder farmers for transitioning in various contexts, while leveraging global sustainability finance

Guideline 7.1 Create an enabling framework to repurpose public and private fundings towards the transitions

- ✓ Foster public private partnerships and multistakeholder engagement to strengthen commitments and joint actions towards financing the transitions (see guideline 1.5 and guideline 5).
- ✓ Reform national agricultural and food subsidies together with import/ export schemes and price policies to better reflect the full costs and benefits of agrifood inputs and outputs. This entails comprehensive cost assessment of different farming systems and value chains, including agroecological ones (see guideline 3.6 and guideline 6.1).
- ✓ Support the domestic banking sector in its capacity to develop sustainable finance standards and instruments adapted to the transitions and to access green and responsible finance.
- ✓ Engage the local banking sector and microfinance actors into financing the transitions (e.g. to help decrease the minimum size of funds and ease the access of local organizations and communities to finance).

To achieve this, AMS may consider:

- Promoting performance-based instruments in legislative reforms and modifications of banking sector legislations (e.g. using ASEAN Green Financial Instruments Guide).
- Fostering partnerships between the domestic financial sector and development finance institutions operating in the agricultural sector to help establish good practices and standards and build in-country capacity on conditional finance (promote Transformative Land Investment).
- Supporting local banks to function as aggregators of agroecology-based green projects and develop green securitizations, to help provide indirect capital market access for SMEs.
- Strengthening environmental offsetting regulations and channel compensations from large investing agrifood companies to finance agroecology transitions programmes.
- Building on enhanced landscape-level policy planning to support the decentralization of agricultural financing to subregions (see guideline 1.3).

Guideline 7.2 Build a coherent national agroecology strategy and accountable framework to direct international funding into the transitions

- ✓ Create a coherent strategic national roadmap and associated accountable framework for agroecology transitions – aligned with government priorities set in the Nationally Determined Contributions (NDCs) and national biodiversity strategies and action plans – thereby improving the capacity to attract and orientate sustainable finance and impact investment (see Annex O) - from the many varied public and private sector entities - into supporting local agroecology investments and agroecology promotors and innovators.
- ✓ Identify, or create, a high-level multistakeholder taskforce (e.g. ministry officials, United Nations agencies, NGOs, donors) in charge of establishing a financing strategy to respond to the agroecology strategic roadmap and identify appropriate financial instruments.
- ✓ Negotiate funding for local paths to agroecology transitions with sustainability funds and investors, such as through leveraging climate finance - covering mitigation and adaptation goals as well as biodiversity credits.

To achieve this, AMS may consider:

- Setting clear targets and indicators for agroecology transitions through inclusive policy planning and M&E (see guideline 1 and Annex B) to establish the coherent strategic agroecology roadmap and accountable framework – including considering the target 10 of the Kunming-Montreal Global Biodiversity Framework and quantifiable outcomes both for mitigation and adaptation activities-.
- Incorporating agroecology targets into the country's plans e.g. National Determined Contributions, and National Biodiversity Strategies and Action Plans, adding health, social, and other environmental targets and indicators, including those related to food systems; and ensure consistency with national agricultural development planning and zoning tools.
- Presenting agroecology targets (and associated funding needs) as a strategic demand that is high on the agenda of negotiation on a bilateral level (e.g. Free Trade Agreement, commercial agreements, negotiation of public aid programmes) and international (e.g. Conference of the Parties), where applicable.
- Fostering the use of environmental and social impact assessment procedures to decide on large public and private agrifood investments and incorporate agroecology criteria/ indicators into them.

►To go further:

- The ASEAN Guidelines on Promoting Responsible Investment in Food, Agriculture and Forest
- ASEAN Green Financial Instruments Guide
- Transformative Land Investment
- Agroecology fund

Guideline 7.3 Develop innovative financial models that address the needs of smallholder farmers for transitioning (in various contexts), while leveraging global sustainability finance

- ✓ Uncover the diversity of financial sources and models and assess their capacity to provide adaptive financial solutions to different stakes and local needs.
- ✓ Foster experimentations of transition finance models and instruments fitting global finance models into locally tailored support to the transitions, adopting a holistic approach that answers the needs of farmers and local stakeholders to transition while responding to impact monitoring, certification needs and national and global sustainability target achievements.
- ✓ Task and capacitate a government body to steer and oversee the piloting of innovative transition financial instruments (as described above), ensuring alignment with national targets and the fueling into an agroecology-based financing strategy (see guideline 7.2)

To achieve this, AMS may consider:

- Orchestrating efforts and expertise from different stakeholders, including development institutions, research, and NGOs to design, test and progressively adapt transition financial instruments. This should be done by combining: 1) tailored support adapted to smallholder transitioning in different local contexts; 2) reliable monitoring and quantifiable environmental and social outcome measurement; and 3) institutional arrangements answering the needs of different financial models; and 4) providing adapted reward systems to different transitioning farmers, including innovative risk mitigation strategies (see for example the Dei Meas pioneering sustainability finance initiative in Cambodia).
- Designing and piloting financial tools based primarily on appropriate support, answering the varied needs of farmers and local stakeholders to transition.
- Supporting long-term projects and programs led by local communities, who are closest to the daily lives of smallholders, ensuring the initiatives directly address local needs. Leveraging research expertise and innovative technologies to build suitable metrics able to quantitatively measure the environmental and social outcomes of different agroecological transition paths (see guideline 6.1), thereby fueling the design of innovative measurement, reporting and verification systems. This serves to not only answer growing demands from sustainability finance for impact monitoring and reporting, but to also adapt these to effectively finance local transition paths.

►To go further:

- Transition financing (Dei Meas)

Implementation: strengthening ASEAN and national policy processes

The ASEAN Sectoral Working Group on Crops (ASWGC) and the Lao-facilitated Initiative on Agroecology (LICA) as a reference group for ASEAN will take the lead to promote the uptake and implementation of the Policy Guidelines:

- National focal points for ASWGC, other sectoral bodies under AMAF, LICA and others have important roles in agroecology transitions at both regional and national levels.

- The implementation actions and timeframes outlined below aim to strengthen regional policy processes and national follow-up on a voluntary basis.

- Stronger engagement across sectors and policy processes are an important approach to implementation.

- Periodic review and revision of the guidelines will be led by LICA with the support of the ASEAN Secretariat. This review and revision will help socialize the guidelines and ensure their continuing relevance and effectiveness.

Table 2. Implementation actions at regional and national levels and time frame

Level of action and responsible actors	Time frame Short-term	Medium- and Long-term
Regional level implementation: ASEAN Sectoral bodies under AMAF, LICA	• Socialize the guidelines and other relevant guidance on sustainable agriculture as a "package". • Mobilize resources for LICA's enhanced dialogue and action with development partners' support. • Socialize the guidelines with other ASEAN Sectoral bodies through workshops. • Develop recommendations for follow-up actions by relevant ASEAN Sectoral bodies. • Develop and disseminate appropriate advocacy materials and technical resources	• To be determined after further consultation.
Voluntary national level implementation National LICA and focal points for ASWGC, other sectoral bodies under AMAF	• Review and socialize the guidelines at the national level. • Designate national focal institutions for technical support, where needed.	• To be determined after further consultation.

Annexes: Key resources

Annex A. Theory of change

The following theory of change was produced with support from the Agroecology and Safe Food System Transitions in Southeast Asia (ASSET) project together with key stakeholders -- including LICA, the Agroecology Learning alliance in South East Asia (ALiSEA), the Conservation Agriculture and Sustainable Intensification Consortium (CASIC) and the Asian Partnership for the Development of Human Resources in Rural Areas (AsiaDHRRA) – based on a series of multistakeholder consultations and workshops, and interviews with policy actors, using the participatory theory of change and human-centered design thinking approaches. It characterizes the present situation, transition pathways, outputs, and impacts envisioned by stakeholders for agroecology transitions in the ASEAN region.

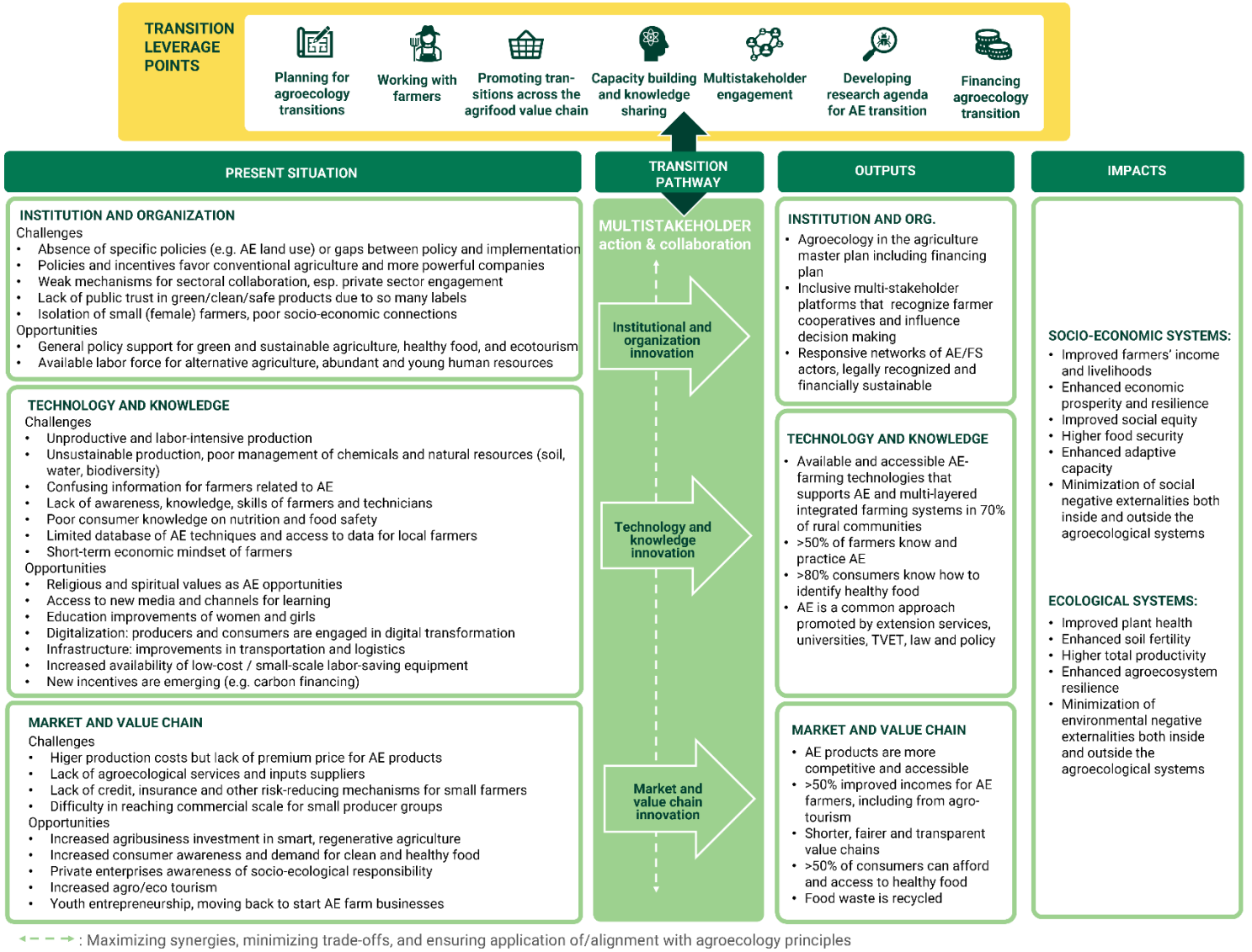


Figure A1. Agroecology transitions in ASEAN – Theory of change

Annex B. Monitoring & Evaluation (M&E) for agroecology transitions

Adequate performance metrics and agreed monitoring frameworks are essential for monitoring progress of agroecology transitions, evaluate the cost-effectiveness of policy instruments chosen, ensure learning from experiences, and eventually make adjustments to policies. In addition, there is a need to identify appropriate institutional responsibility, authority and resources for leading M&E on agroecology transitions at the national level. Ideally, M&E systems and frameworks provide direct input to policy processes and agenda setting, long-term research agendas, and transparent and inclusive follow-up and review, as relevant and appropriate for each country's context.

Monitoring transition at different levels

Current frameworks for measuring agricultural development tend to focus on yields, volumes and incomes, and do not value the multi-functionality of agriculture (Caron *et al*., 2008). Monitoring agroecology transition requires an assessment of a wide range of criteria at three different levels as shown in the table below.

System level	Example indicators
Macro social and economic	Food safety and security, agroecology investments, trade and employment, research and extension capacity
Landscapes and territories	Biodiversity, land tenure, circularity of resource use, regulatory compliance, dietary diversity
Fields and farms	Productivity, soil fertility, pesticide exposure, water use efficiency, GHG emissions

Localizing M&E processes

Regional agreement on core indicators may support national voluntary M&E systems. However, each should be adaptable to national situations. The focus should be on practical, easily understood indicators that can be collected, stored, and communicated to stakeholders over time. Indicator choices, responsibilities, processes and tools should consider expected outputs in terms of content, format, timing and accessibility by key stakeholders.

Engaging stakeholders

Co-creation and participatory approaches support all stages of M&E. Family farmers, agrifood companies, government agencies, NGOs and donors, are among the stakeholders who can be engaged in identifying indicators, collection of data and analysis and can also benefit from the knowledge generated through the M&E system. Each group is more likely to use M&E results to improve their performance against the agroecology indicators if they have been involved throughout the M&E process. Changing patterns of land use, trends in production practices, levels of emissions and residues, regulatory compliance and market behavior are among indicators that can be tracked via digital technologies including hand-held sensors, smartphone applications, remote sensing, drones, robotics and blockchain technology, among others.

The following tools have already been tested in several countries, involving a wide range of stakeholders. Each is designed to assess different aspects of the agroecology transition.

M&E tool	Primary users	Online resources
Tool for Agroecology Performance Evaluation	Producers (farmers, agriculture departments, technical advisers), policy makers and development stakeholders	►Online resource ►Guidelines
Working Group on Agroecological Transitions Method	Development stakeholders	►Handbook
Business Agroecology Criteria Tool	Private sector: investors, entrepreneurs and companies	►Online resource ►Toolkit
Agroecology Financing Analysis Toolkit:	Public sector: government planning ministries and development agencies	►Online resource ►Toolkit

Annex C. Institutional resources for agroecology transitions

The table below provides details of selected international institutions supporting agroecology in Southeast Asia. This includes organizations based in the region, or with active partners in more than one ASEAN member state. National organizations and development projects are not included.

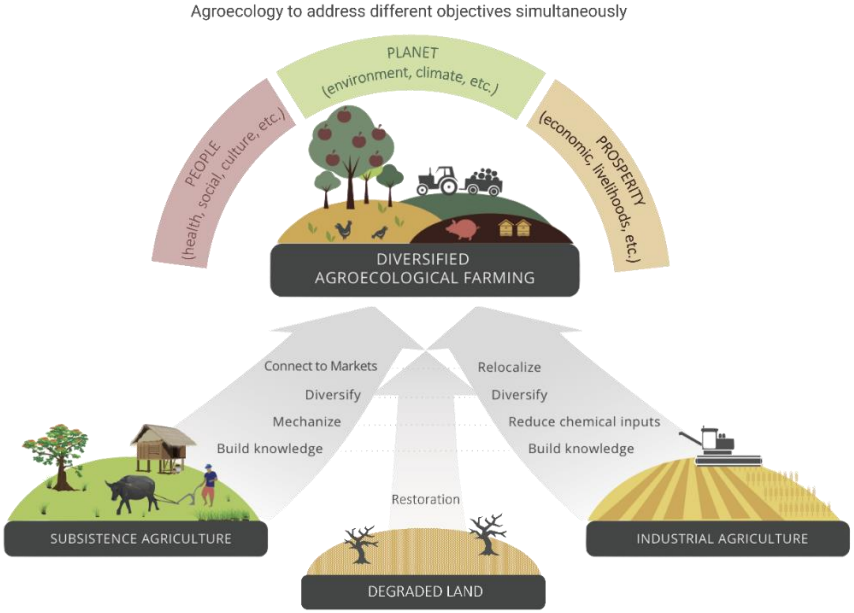
Name	Website	Focal area
Agroecology Coalition	Agroecology Coalition	A global coalition for the transformation of food systems through agroecology
Agroecology Learning Alliance in South-East Asia	ALiSEA	Knowledge-sharing among agroecology practitioners, especially NGOS and CSOs
Agroecology in South-East Asia	ASEA	Research and training partnership among 13 research and educational institutions
Agroecology Transformative Partnership Platform	Agroecology TPP	A community of practice for building resilience of livelihoods and landscapes
ASEAN Climate Resilience Network	ASEAN-CRN	Promoting climate smart agriculture among ASEAN member states
Asia and Pacific Islands Rural Advisory Services Network	APIRAS	Networking for better extension services across the region, incl. sub-networks for Southeast Asia
Asian Farmers Association for Sustainable Rural Development	AFA	An alliance of national farmers organizations composed of small-scale family farmers
Asian Partnership for the Development of Human Resources in Rural Areas	AsiaDHRAA	Regional partnership of social development networks and organizations
Centre for Agric and BioSciences International – South East Asia	CABI-SEA	Scientific services for sustainable agriculture, including biocontrol and sanitary and phyto sanitary standards
FAO Agroecology Knowledge Hub (AKH)	AKH	A repository of well-documented evidence, policies, practices, and cutting-edge scientific advancements in the field of agroecology
Grow Asia	Grow Asia	Promoting public-private partnerships for resilient and sustainable food systems
Higher Education for Sustainable Agriculture (HESA) in Southeast Asia	HESA	Exchanging knowledge for HESA, and exploring interdisciplinary curriculum reform
Markets and Agriculture Linkages for Sustainable Food systems in Asia	Malica	Partnerships on research on food market analysis and urban/rural linkages in Viet Nam and Lao People's Democratic Republic
Mekong Youth Farm Network	Y-Farm	Partnering with young farmers and youth groups in five lower Mekong Countries
Pesticide Action Network, Asia-Pacific	PAN-AP	Advocating replacement of chemical-intensive agriculture with agroecology
SEARCA Knowledge Center on Climate Change Adaptation in Agriculture and NRM	SEARCA KC3	A one-stop-shop of information on climate change adaptation and mitigation in Southeast Asia
Sustainable Rice Platform	SRP	Multi-stakeholder alliance reducing the social and environmental footprint of rice production

Annex D. Agroecology Q&A

Q1: Is agroecology mainly for small farms?

A: Both a smallholder traditional system and a large-scale industrial agroecosystem could be the starting points of agroecology transitions (Figure A1). While most successful current examples of agroecology mainstreaming take place in smallholder and family farms, there are increasing calls for larger farms to be engaged in agroecology transitions. These farms may capitalize on new technological opportunities (such as digitalization and breeding) to mainstream agroecology and play a key role in contributing to an enabling environment for agroecology transitions. (Ewert *et al*., 2023)

Figure D1. Agroecology transitions



Source: Author, adapted from Agroecology coalition, 2019

Q2: Does agroecology imply lower farm productivity?

A: Several studies have challenged the notion that agroecological systems are less productive than more "conventional" or "industrial" agricultural models, which are intensive and specialized. Research over the past two decades (e.g. Pretty *et al*., 2003; De Shutter, 2010, 2012; Ponisio *et al*. 2015; Reginold and Wachterm, 2016) has highlighted numerous examples, primarily from tropical and subtropical regions, demonstrating notable yield increases with agroecological or organic farming. Pretty *et al*. (2003) reported weighted average increases of 37 percent per farm and 48 percent per hectare. Additionally, d'Annolfo *et al*. (2017) conducted a meta-analysis revealing that yields rose in 61 percent of the cases following the adoption of agroecological practices, while they decreased in 20 percent, and farm profitability improved in 66 percent of cases. However, due to the underinvestment in agroecological research, the representativeness of the documented cases and the specific aspects of agroecological approaches that led to yield and profit improvements remain unclear (CFS-HLPE, 2019).

Q3: Can agroecology feed the world?

A: Some estimates suggest that current food production could potentially feed 9 billion people. The debate about whether agroecology can feed the world may be based on a false premise because food insecurity and malnutrition persist despite high levels of production, even in food-exporting countries like Brazil and South Africa. Thus, merely increasing production might not be sufficient to achieve food security and nutrition in its six dimensions: availability, access, utilization, stability, agency, and sustainability. There is growing recognition that hunger and malnutrition may stem more from unequal entitlements and access to food, natural resources (land, water, genetic resources), inputs, markets, and services. Consequently, agroecological approaches are seen as promising for achieving food security and nutrition because they address not only productivity but also social inequalities and power imbalances, including gender and ethnic minority inequalities (CFS-HLPE, 2019).

Q4: How do I know what agroecology is and what is not?

A: There are no clear boundaries nor a set of practices that define agroecology. As explained in section B1, international consultations have led to agreement on 10 elements and 13 principles (Figure A2) that make up agroecology. Certain practices are more agroecological if they: 1) rely on ecological processes as opposed to purchased inputs; 2) are equitable, environmentally friendly, locally adapted and controlled; and 3) adopt a systems approach embracing management of interactions among components, rather than focusing only on specific technologies (CFS-HLPE, 2019).

Different sustainable agricultural practices (such as climate-smart agriculture, conservation agriculture, organic agriculture, regenerative agriculture, or agroforestry) are related to agroecology to varying degrees based on their application and/or emphasis of the agroecology principles. Consequently, agroecology, being principle-based, is often seen as an umbrella term, bringing together stakeholders from diverse agricultural practices and systems.

Figure D2. 13 principles of agroecology

Source: Biovision based on HLPE, 2019

Annex E. Contribution of agroecology to the SDGs

Agroecology supports the 17 Sustainable Development Goals (SDGs), with contribution to selected SDGs shown in the below table.

	SDG 1: End poverty in all forms everywhere Family farming, herding and artisanal fisheries and aquaculture provide livelihoods for many of the world's rural poor. Agroecological approaches support food producers in reducing production costs, translating into greater income, economic stability and resilience.
	SDG 2: End hunger, achieve food security and improve nutrition and promote sustainable agriculture. Agroecological systems optimize the use of local and renewable resources and knowledge. This enables agricultural production systems to harness ecosystem benefits such as pest control, pollination, soil health and erosion control while ensuring productivity.
	SDG 3: Ensure healthy lives and promote well-being for all at all ages. By minimizing the use of potentially harmful agrochemical inputs, agroecology reduces agriculture's negative effects on both human and environmental health. By re-localizing diets, agroecology can help to inform sustainable and healthy diets.
	SDG 5: Achieve gender equality and empower all women and girls. Women have a central role in agroecology. They are often custodians of healthy and traditional diets and are key players in sustainable food systems, from the home to the field, to the market and beyond. Agroecology has the potential to advance women's rights, self-determination and autonomy.
	SDG 10: Reduce inequality within and among countries. Agroecology gives priority to the most marginalized and vulnerable sectors of society: rural women, youth, family farmers and indigenous peoples. Agroecology has the potential to address the inequality of the food system by providing locally based solutions to specific contexts and territories.
	SDG 12: Ensure sustainable consumption and production patterns. Agroecology enhances diversification to achieve sustainable and healthy diets and food and nutrition security. Agroecological food systems have proven, in many local contexts, to be exemplary providers of high-quality nutritious, healthy and adequate diets, preserving and promoting local food traditions and traditional knowledge.
	SDG 13: Take urgent action to combat climate change and its impacts. Agroecology helps mitigate climate change and its impacts. It reduces the emission of greenhouse gases by promoting integrated production systems that are less dependent on energy from fossil fuels and that store and fix carbon. By promoting diversified and integrated production systems, agroecology facilitates resilience and adaptation to a changing climate.
	SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. Agroecology works with local communities, food producers, and other actors to prevent land degradation and restore degraded areas. Agroecology helps to conserve and sustainably use and value the biodiversity and ecosystem services that underpin food production.

► A comprehensive list of agroecology contribution to all SDGs is available on the FAO Agroecology Knowledge Hub

Annex F. Agroecology examples and evidence from ASEAN countries

ASEAN countries have wide-ranging experiences in the application of agroecological principles at all levels of the food system based on local conditions, providing a strong foundation for a broader transformation of food systems. What do these experiences tell us?

Improve on-farm efficiency

The ASEAN experience with agroecology has demonstrated the potential for farmers to increase and sustain production levels while reducing the cost of inputs, particularly pesticides and fertilizers. In some cases, agroecological practices such as organic farming require more labor, but the gross margins are the same when savings on agrochemicals are taken into account, and even higher if farmers receive premium prices for producing food that is safer and healthier for consumers.

Cambodia

The practice of conservation agriculture has taken off in Cambodia since it was first introduced a decade ago[1]. Thousands of farmers are seeing production increases, savings on fertilizer costs, and fewer pest problems because of improvements in soil health[2]. There is strong support from the Ministry of Agriculture, universities and the private sector, all of whom are providing services to producers in support of conservation agriculture[3]. The Cambodia Conservation Agriculture Sustainable Intensification Consortium (CASIC) is now a regional leader in this field, hosting conferences attended by government representatives, development agencies, researchers and companies from across ASEAN and farther afield.[4]

Enhance climate resilience and empower producers

Resilience is a core element of agroecology. FAO has stated unequivocally that "solid evidence demonstrates that agroecology increases climate resilience"[5]. It further noted that the contribution to resilience is greatest when agroecological practices are combined with the empowerment of vulnerable producers who increase their adaptive capacity. The IPCC has also reported that "adoption of agroecology principles and practices will be highly beneficial to maintaining healthy, productive food systems under climate change".[6]

The Philippines

The ASEAN State of Climate Change Report (2021) notes that the region is highly vulnerable to climate impacts and the Philippines ranks first in terms of populations affected by natural hazards.[7] The agriculture sector in the Philippines is especially vulnerable[8] but as reported in the national press "'Agroecology' helps farmers cushion climate impact".[9] Across the country, hundreds of farmer organizations have supported their members in applying resilient practices – both traditional and modern – such as seed saving, crop rotations, production of animal feeds, social entrepreneurship, and collaboration with Local Government Units.[10] As home to the Asian Farmers Association, a network of farmer organizations in 17 countries, the Philippines is playing a key role in sharing agroecological approaches to climate resilient farming.[11]

Improve food security and nutrition

The 2023 ASEAN Leaders Declaration on Strengthening Food Security and Nutrition recognized the need "to accelerate the transformation toward more resilient, inclusive and sustainable agri-food systems"[12]. As a means to this end, the Declaration mentions the importance of sustainable agriculture, local food sources, and diversified food production, which are consistent with the elements and principles of agroecology.

Indonesia

In 2021, agroecology was given an important role in the Indonesian National Pathway for Food Systems Transformation, complementing other objectives established by the Government, notably the promotion of dietary diversity and maintenance of local knowledge about food resources.[13] The role of agroecology in improving nutrition through greater dietary diversity is well-established.[14] Research in Indonesia has highlighted the key role played by women in this area[15], who can now combine traditional knowledge with new technology such as e-commerce to sustain local food systems.

Foster win-wins for the environment and the economy

Agroecology is associated with a number of financial and economic benefits along agricultural value chains, including: efficiency gains and savings on inputs such as agrochemicals and water; reduced losses caused by pests, diseases and adverse weather; access to certification schemes and export markets that provide premium prices.

Lao People's Democratic Republic

For centuries, the people of Laos have supplemented their diet with a wide range of products gathered from forests. In recent decades, there have been several success stories in the commercialization of naturally occurring forest products such as bamboo[16] and wild tea.[17] Coffee is not indigenous to Laos, but when planted in natural forest it has produced high quality ('specialty') beans that are now winning prizes and being exported to Europe, the USA, Japan and China.[18] The potential for agroforestry coffee was highlighted in State and Outlook of Agroforestry in ASEAN (2021).[19]

Has the potential to be applied by large-scale agribusiness

While small farmers have been a major beneficiary of agroecological approaches and practices, commercial farms and plantation crops have also demonstrated the benefits of agroecology.

Malaysia

Palm oil and rubber plantations are major contributors to the Malaysian economy, but as monocultures they are vulnerable to pests and diseases[20]. Agroecological practices such as integrated pest management (IPM) have shown great promise in reducing pest problems and provide crucial criteria for sustainability certification schemes that contribute to export revenue.[21] Malaysian scientists are also working on ways to restore biodiversity in plantations[22] which is expected to have positive impacts on nutrient, water and carbon cycles, as well as boost microorganisms and pollinators, all of which will contribute to sustainability. [23]

Provide benefits for both producers and consumers

Consumers are important beneficiaries of agroecology. Whether they buy traditional foods sold in local markets, or commercially produced organic products from supermarkets, consumers across Southeast Asia have access to safe and nutritious food produced using the principles of agroecology.

Myanmar

The production and sale of organic produce has continued in Myanmar, despite the departure of many international donors and NGOs in recent years, demonstrating local and national commitment to the provision of healthy food. Different value chains are in operation including commercial enterprises[24], farmer markets[25] and agrotourism[26]. Since 2009, a leading role has been played by the Myanmar Organic Growers and Producers Association that currently supports certification through the Participatory Guarantee System (PGS)[27], an approach that has been adopted across the region, including Cambodia, Laos, Philippines Thailand and Vietnam.

Bring together traditional and modern farming practices

Some agroecological practices have their roots in natural systems and traditional farming practices, but scientific agroecology is also suited to modern farming systems. New applications are being continually developed in Southeast Asia, including the use of digital technology.

Singapore

Singapore is a hub for agritech, with the Government investing more than $300 million for R&D in the agri-food industry and United Nations Development Programme (UNDP) Global Centre for Technology, Innovation and Sustainable Development running a program called Cultiv@te that supports innovation in the agri-food sector. These initiatives show that digital technology, including environmental sensors, tracking devices, data management and online marketing tools, can be used in support of agroecological principles such as crop health, recycling and connectivity, thereby boosting production and profits while making agriculture cleaner and safer.

Support for agroecology has expanded from the public to the private sector

The development and initial promotion of agroecological practices in ASEAN member states has usually been led by Government agencies, often with the support of international development agencies and NGOs. Once these practices have been validated, technically and economically, the private sector has an important role to play in scaling up application.

Thailand

As early as 1995, the Thai Government established a network of Pest Management Centers that produced biocontrol agents, offered to farmers as a safe alternative to chemical pesticides.[28] These naturally occurring products were subsequently commercialized, and a number of local companies have been supplying biocontrol agents to small farmers, commercial greenhouses and large plantations for more than 25 years[29]. In 2014, ASEAN issued regulations on the use and trade of biocontrol agents, noting that over 400 products were commercially available in member countries.[30]

Expertise is already available to support the scaling up of agroecology

Agroecology is backed up by extensive research and decades of practices across the ASEAN region. Southeast Asia is home to hundreds of research organizations, universities, and agricultural departments with expertise in this field, while thousands of producer organizations and millions of farmers have experience of putting the principles of agroecology to the test.

Viet Nam

The Vietnamese Government has been promoting agroecological practices since the 1990's when a program of Farmer Field Schools (FFS) was launched, attended by approximately one million farmers by 2005.[31] In the decades that followed, research has been carried out in the application of agroecological principles in a number of areas including rice farming[32], agroforestry, organic production and soil conservation.[33]

Every ASEAN member state can benefit from - and contribute to - agroecological transitions

The experience of implementing agroecology varies greatly among ASEAN member countries. This variation represents an excellent opportunity for collaboration. Agroecological knowledge is already being shared through regional networks of producers and researchers. More and more bilateral exchanges are also taking place.

Brunei

At present, Brunei is highly dependent on food imports but aims to produce a greater portion of its own food.[34] Considerable progress has been made to promoting sustainable agriculture within the framework of the SDGs[35] and in cooperation with fellow members of ASEAN.[36] The ASEAN Framework to Support Food, Agriculture and Forestry Small Producers, Cooperatives and MSMEs was adopted by SOM AMAF in 2021 during the Brunei Chairmanship.[37]

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Annex G. The role of LICA in agroecology transitions

The Lao facilitated Initiative on Agroecology (LICA) was established to support agroecology transitions in ASEAN. It responds to requests made to the Lao People's Democratic Republic during SOM-AMAF Meetings: first in 2012, for a regional initiative on conservation agriculture to promote as an "eco-friendly and climate-resilient agriculture intensification in the ASEAN region", and then in 2017 with the objective of "sharing, comparing and, as much as possible, homogenizing national regulations on agroecology, in order to progressively develop a Common Position of ASEAN."

Member countries were requested to nominate LICA focal points as agreed at the 41st SOM-AMAF meeting in 2019. As a result of discussions among the LICA focal points, three objectives were established for LICA, including the design of this document of ASEAN guidelines for supporting agroecological transitions, as detailed below:

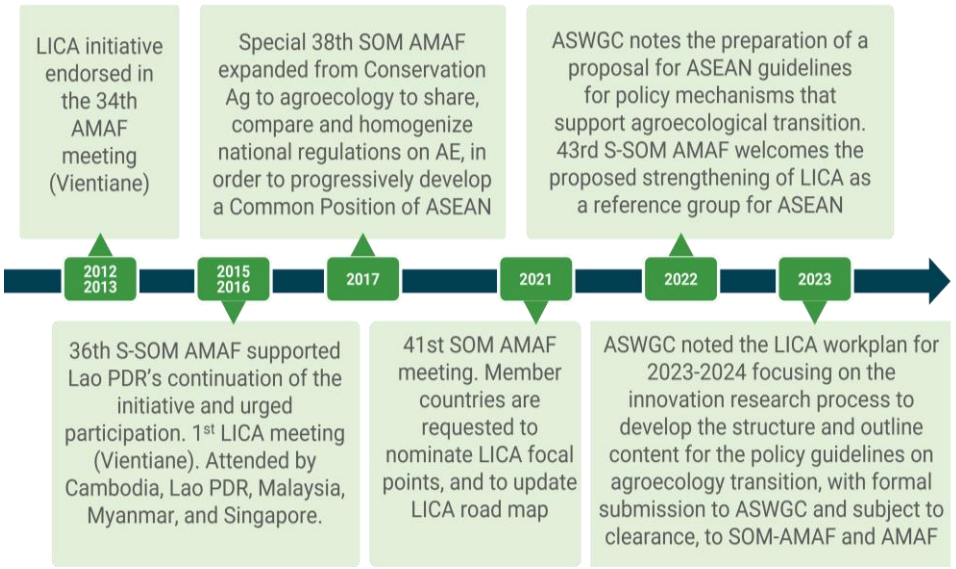
- Sharing *success and learning experiences* of ASEAN countries on policies and institutional mechanisms that efficiently support agroecological transition.
- Facilitating an inter-countries analysis of these experiences, *through partnerships with ASEAN Sub-Working Group on Crops (ASWGC) SPA 2021-2025.*
- Facilitating the design of ASEAN guidelines for *policies supporting agroecological transition.*

The 42nd SOM-AMAF meeting requested the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) to work with the ASEAN Secretariat, LICA and relevant sectoral working groups, on implementing various proposals, including establishing LICA as a reference group on agroecology for ASEAN.

As a reference group on agroecology, LICA will have the following additional roles within ASEAN:

- Link the discussions in ASEAN on agroecology with global discussions, in particular with the Agroecology Coalition.
- Increase the coherence of policy and activity on sustainable agriculture, beyond the ASWGC.
- Increase communication and sharing on agroecology advances in ASEAN member states.

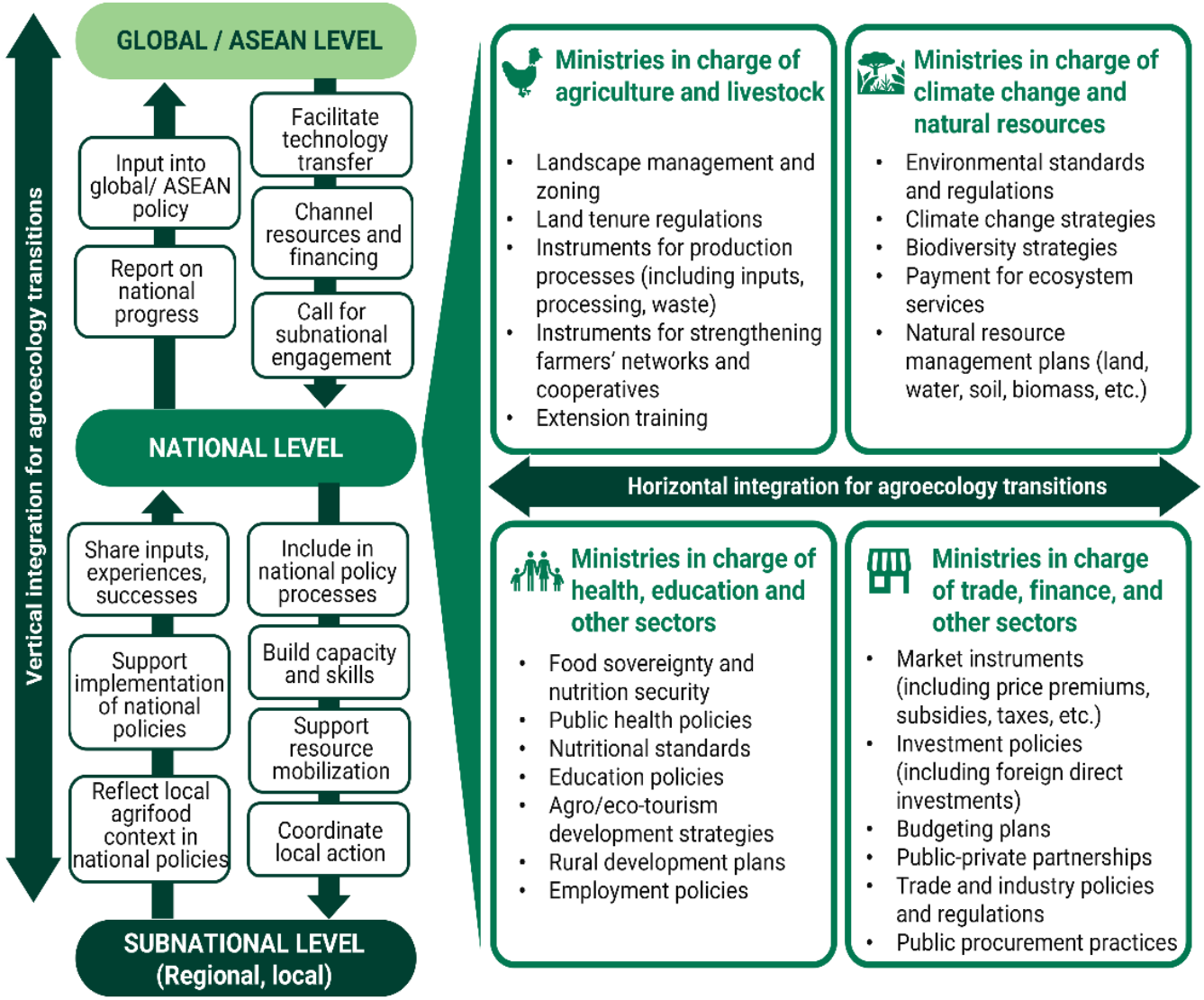
Timeline of the Lao facilitated Initiative on Agroecology (LICA)



► For more information on LICA, visit: www.aseanaetguidelines.org

Annex H. Multilevel governance and policy coherence for agroecology transitions

Effective agroecology transitions require vertical integration to ensure that policies and actions at local, national, and global/regional levels are aligned and mutually reinforcing; as well as horizontal integration or a cross-sectoral approach to address the complex, interrelated challenges of transitions. See conceptual diagram in this page that illustrates multi-level governance.



Source: Author, adapted from the Urban-Led project

Annex I. Participatory land use planning

Participatory Land Use Planning (PLUP) is a village-level process that actively involves villagers in various stages, including socioeconomic data collection, boundary delineation, land-use zoning, land management planning, land registration, village networking, and monitoring and evaluation. Interrelatedly, participatory agricultural land management (PALM) provides specific plans for agricultural land, adding detail to the PLUP.

The initial participatory diagnostic typically includes inventorying and prioritizing village problems, describing village history and demography, identifying farming practices and constraints, and pinpointing technical and organizational improvements. PLUP fosters increased community participation and ownership in innovations and planning processes for sustainable agricultural and food systems. Success factors of PLUP/PALM for realizing positive impacts include:

> Building capacity among government authorities: Ensure authorities have sufficient financial resources, equipment, and training in participatory procedures and modern technology (e.g., GIS tools, UAV drones).

> Integrating competent authorities: Involve various sectors in the planning process, provide spatial data for socioeconomic development, and ensure provincial authorities support districts with technical assistance and continuous monitoring of land use plans.

> Ensuring community participation: Engage villagers in the planning process, inform them of their land rights, and involve them in decision-making, with special consideration for women and vulnerable groups. Strengthen local ownership for ongoing management and compliance with land use plans.

> Linking plans to follow-up actions: Connect land-use plans to subsequent measures such as land registration, forest conservation, agricultural extension, and investment allocation to ensure sustainable impacts on income generation and environmental protection at the local level.

►Resources:

- GIZ. 2023. Participatory Land Use Planning in Lao PDR. How it contributes to Sustainable Rural Development
- EFICAS. 2020. Community-based agricultural development planning: Engaging farming communities into participatory land use planning.

Annex J. Some areas for prioritizing agroecology transitions

Here are some strategic areas that may be considered when prioritizing agroecology investments to lead to more sustainable and resilient agroecology systems and livelihoods:

Biodiversity hotspots	•Support conservation efforts and sustainable practices that protect ecosystems. •Promote agroforestry systems that integrate trees and crops to enhance biodiversity at forest margins.
Ecological fragile or sensitive areas	•Mountain areas, watershed management areas, or areas vulnerable to climate impacts.
Smallholder, subsistence farming communities	•Strengthen local food systems and improve farmer livelihoods.
Marginalized and Indigenous communities	•Empower the community and incorporate traditional knowledge and practices that align with agroecological principles.
Regions with potential for value-added products	•Enhance product quality of high-value cash crop •Support agroecological products' entry into markets, fair trade, and certification schemes.
Degraded lands	•Restore soil health through agroecology.
Regions with strong civil society networks and/or supportive agroecology policies.	•Collaborate with NGOs, cooperatives, and research institutions for greater impact. •Leverage existing frameworks to scale up sustainable practices.
Educational and research Hubs	•Collaborate with universities and research centers to invest in agroecological research, knowledge dissemination, and farmer training programmes.
Urban and Peri-urban Areas	•Promote local food production, reduce food miles, and enhance urban resilience. •Integrate waste management with agricultural production for circular economy benefits.

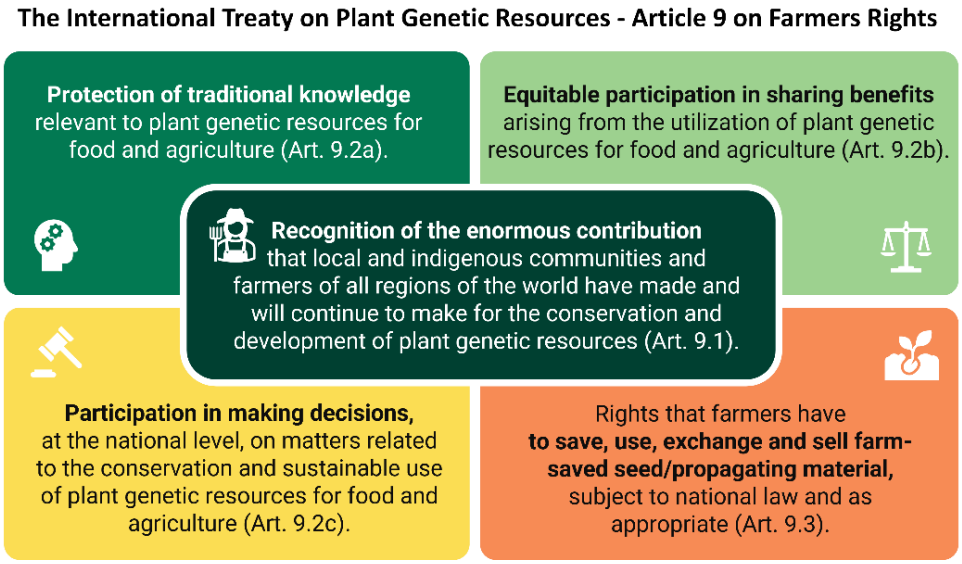
Annex K. Farmers' rights as stated in the International Treaty on Plant Genetic Resources

The International Treaty on Plant Genetic Resources for Food and Agriculture, aligned with the Convention on Biological Diversity, aims to ensure food security by conserving, exchanging, and sustainably using plant genetic resources for food and agriculture, ensuring fair benefit sharing, and recognizing farmers' rights that align with agroecology. Adopted by FAO in November 2001, it came into force in June 2004 and had 150 Contracting Parties (149 Member States and the European Union) by February 2024.

Article 9 emphasizes farmers' rights. While the 2019 United Nations Declaration on the Rights of Peasants reaffirms these rights, it is not legally binding like the Treaty.

Realizing farmers' rights is crucial because:

1) Farmers contribute to on-farm and in situ plant genetic resources for food and agriculture conservation.
2) Local crop diversity is maintained in farmers' fields.
3) On-farm management supports continuous local adaptation of varieties.
4) On-farm plant genetic resources for food and agriculture serve as a live repository and backup for ex-site collections.
5) It promotes and sustains farmers as biodiversity custodians.
6) It supports food sovereignty and cultural diversity.



Annex L. Community-supported agriculture (CSA)

Community-supported agriculture refers to a partnership based on human relationships between consumers and one or several producers, with three guiding principles:

1) Community building through direct and long-term relationships with shared responsibility, risks and rewards;
2) Active participation based on trust, understanding, respect, transparency and cooperation; and
3) Mutual support and solidarity beyond borders.

It involves consumers who support farmers financially by buying share of a farm's harvest in advance.

►Resource: https://urgenci.net/

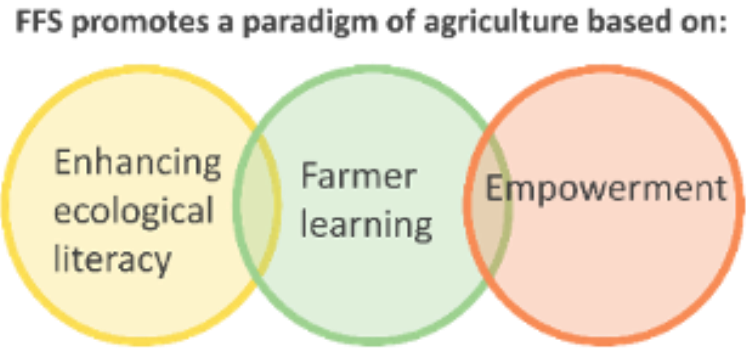
Annex M. Participatory Guarantee Systems (PGS)

Participatory guarantee systems are localized quality assurance mechanisms certifying producers through stakeholder engagement, trust, and knowledge exchange (IFOAM, 2013). Unlike third-party certification, which relies on external assessments, PGS foster farmer–stakeholder interactions to establish credibility. This collaborative approach involves producers, processors, retailers, and consumers sharing responsibility for product quality. Benefits of PGS include support for local marketing and improved market access, enhanced peer to peer practice and knowledge sharing, heightened consumer awareness, and empowerment of farmers and consumers through ownership of the assessment process. PGS not only empower farmers but also promote solidarity and transparency in governance.

Annex N. Farmer Field Schools (FFS)

Launched in the late 1980s by the Government of Indonesia, with support from FAO, the Farmer Field Schools were originally developed as a practical approach for farmers to learn about ecology and IPM, building on local knowledge systems, learning in groups, and using field-based, hands-on learning to empower farmers. By the end of the 1990s, over 1 million farmers had been trained in Indonesia through FFS.

This successful model was shared across Asia, leading to the initiation of FFS programmes in other countries in South Asia and Southeast Asia.



►Resources:

- Farmers taking the lead - Thirty years of farmer field schools
- Global Farmer Field School Platform

Annex O. Sustainability finance models with the potential to support agroecological transitions

Finance models and funding sources	Targets of financial support and mechanisms on the ground (Financial support that could push for agroecology transition)
Payment for ecosystem services	in general, practice-based subsidies to landowners or farmers as reward for ecological benefits, such as carbon sequestration, water purification, or biodiversity protection. A large diversity of arrangements is available.
Voluntary carbon biodiversity markets, climate credits	Voluntary carbon markets: allow individuals, organizations, or governments to purchase carbon credits or offsets from projects that reduce greenhouse gas emissions (GHG). The same emerges for biodiversity. Results-based climate credit: carbon or GHG. Based on carbon removal from atmosphere (soil organic carbon sequestration, agroforestry) or on avoidance: preventing or reducing GHG emission or carbon footprint at source, compared to baseline scenario.
Insetting	Investments in emission reductions within a company's own value chain, originating from sources outside the direct control of the investing company.
Green, blue and social impact bonds	Results-based financial tools, linking environmental and socially conscious investors (outcome funders) with enterprises delivering social programmes or services (e.g. ADB Green and Blue Bonds).
Blended finance	Structuring approach through which organizations with different objectives invest alongside each other while achieving their own objectives (whether financial return, social or environmental impact, or a blend of both), using development finance (e.g. Indonesia's Tropical Landscapes Finance Facility).
Microfinance institutes and banks	Flexible microloans empower individuals across value chains to invest in climate-resilient livelihoods and environmentally conscious activities (e.g. Chamroeun Microfinance in Cambodia: customized financial products coupled with microinsurance).
Financing of the transitions as a whole	Practice-based reward system combined with measurable outcome verification and certification (e.g. Dei Meas pilot).

Source: Author and SwissContact Dei Meas, Ecosystem Marketplace website, 2023

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