



Agroforestry interspersed with corn and fruit trees

A farmer shows his typical agroforestry farm in Peñablanca, Cagayan, Philippines: planted with corn interspersed with mango and banana.

Photo: World Agroforestry/Regine Evangelista

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CHAPTER EIGHTEEN

Policy guidelines for agroforestry development adopted by ASEAN^a

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Highlights

- All ten member-countries of the Association of Southeast Asian Nations (ASEAN) agreed that agroforestry development can increase their prosperity, connectivity, resilience and security
- The guidelines support focused policies and programs for agroforestry in Member States as part of the Vision and Strategic Plan for ASEAN Cooperation in Food, Agriculture and Forestry 2016–2025
- The guidelines support collaboration between Member States in sharing technical and policy developments, promoting increased trans-border trade in agroforestry products and bolstering the enhancement of ecosystem services, in keeping with the vision of the ASEAN Economic Community
- The guidelines include 3 institutional, 2 economic, 2 environmental, 3 socio-cultural, 2 technical design and 2 communication and scaling principles
- The guidelines, adopted by ASEAN Ministers of Agriculture and Forestry, were developed in a collaborative process with a wide range of partners from national government agencies, international, regional and national research and academic institutions, non-governmental organizations, and civil society groups

18.1 Introduction: the process

Getting agroforestry on negotiation tables where global, regional, national and local policy responses to current ‘issues’ are discussed takes patience and time. Yet, without such investment, flexibility in the language to be used, and persistence and consensus on the core

^a Adopted from: ASEAN Guidelines for Agroforestry Development. Jakarta, ASEAN Secretariat, December 2018

aspects, agroforestry practitioners will continue to face hurdles because policy documents don't refer to it as a potential contribution.

Considerable progress was made in recent years in the Southeast Asian context where ASEAN (the Association of Southeast Asian Nations) with its ten Member States engaged in a process of consultations that led to a set of principles and associated implementation guidelines were endorsed at Ministerial level. The document itself has no legal power (there are sanctions or dispute settlement rules), but serves as an expression of commitment and intent, and provides a framework for cooperation amongst Member States. It can help in dealing with cross-border issues as they exist on both the agricultural and forestry side of agroforestry. The principles and guidelines will offer little, if any, surprise for readers of the preceding chapters of this book, and indeed much of the research results reviewed here was summarized at the start of the policy process in a 'white paper'¹. Much of these guidelines can apply in other regions of the world, but as in any science-policy interface, the 'boundary work' of consultations and a participative process is as important for the legitimacy dimension of the resulting 'boundary object', as the credibility of the underlying evidence and the relevance (salience) of the recommended courses for action.

The main part of this chapter is the list of principles and guidelines formulated, but we will first describe the process followed to ensure ownership by the relevant authorities. For the readership of this book, the list of suggested references of the ASEAN document has here been used in the sections where they are most relevant.

18.2 Background and scope of the guidelines

The Vision and Strategic Plan for ASEAN Cooperation in Food, Agriculture and Forestry 2016–2025, as endorsed by the 38th ASEAN Ministers of Agriculture and Forestry meeting in 2016, aims to ensure that, 'forest resources are sustainably managed at the landscape level to meet societal needs, both socio- economically and culturally, of the present and future generations, and to contribute positively to sustainable development'.

Recognizing the contribution of agroforestry in achieving food security, enhancing climate-change adaptation and mitigation, and reducing land degradation; to many of the Sustainable Development Goals; and to strengthen links between forestry and food production through an integrated approach to landscape management as well as enhancing sustainable forest management, the 20th ASEAN Senior Off of Forestry meeting agreed to develop ASEAN guidelines on agroforestry. The 39th ASEAN Ministers of Agriculture and Forestry meeting adopted the recommendation to develop the guidelines as one of the key deliverables of ASEAN cooperation in forestry in 2018.

The World Agroforestry Centre was requested through the ASEAN Working Group on Social Forestry to prepare — together with the Food and Agriculture Organization of the United Nations (FAO) and the partners of the ASEAN-Swiss Partnership for Social Forestry and Climate Change project — a set of guiding principles in support of agroforestry development in ASEAN Member States. The guidelines are deemed necessary to achieve the ASEAN Food, Agriculture and Forestry Sector's Vision and Strategic Plan, particularly Strategic Thrust 4, 'Increasing resilience to climate change, natural disasters, and other shocks', and Action

Programme 5, pertaining to the ‘expansion of resilient agroforestry systems where they are ecologically and economically appropriate’.

Consultations with many stakeholders, including researchers, academics, practitioners, technical experts, forestry- agriculture- environment sector representatives from national governments, and farmers’ associations, were facilitated since June of 2017. The authors and contributors would like to emphasise that the Guidelines are designed to ensure that agroforestry development is based on the unique contexts of ASEAN Member States. Individual Member States’ socio- economic, policy and environmental conditions will need be to given equal consideration in the design of any agroforestry intervention.

The Guidelines are intended to be applicable to all types of land or ecosystems targeted for agroforestry interventions within ASEAN Member States, whether forests, farms, watersheds, uplands, lowlands, coasts, wetlands or peat. It is not a technical guideline for establishing agroforestry but, rather, a framework for facilitating dialogue in the design of agroforestry policies, programs, projects and investments between, and within, ASEAN Member States. Implementation of the Guidelines is voluntary and neither add to, nor replace existing formal regional agreements or treaties, national laws and policies, but align with the ASEAN Multi-Sectoral Framework on Climate Change: Agriculture and Forestry towards Food Security, and all other ASEAN sectoral guidelines relevant to agroforestry.

The principles and guidelines described in this document, although intended for ASEAN Member States, represent a broad philosophy that can be adopted by States outside ASEAN.

Box 18.1 Objectives of the guidelines

1. Promote the role of agroforestry in simultaneously achieving economic, environmental and social outcomes at farm, household and landscape levels.
2. Guide the formulation of agroforestry policies, strategies and programs of ASEAN Member States and private- sector investments, as well as higher education agroforestry curriculum and programs.
3. Help ASEAN Member States achieve their targets related to food security, ‘green’ or sustainable growth, reduction of greenhouse-gas emissions, land restoration, watershed protection, gender equality, social/community forestry, climate-change adaptation and mitigation and, more generally, the Sustainable Development Goals.
4. Strengthen partnerships among ASEAN Member States through joint action on agroforestry development.

The intended primary users of the Guidelines are ASEAN Member States’ policy makers and, secondarily, program and/or project planners at national and sub-national levels, domestic and foreign investors, institutions for higher learning, and local and international non-governmental organizations involved with agroforestry and development. The Guidelines can be also used by civil society groups for advocacy purposes.

Box 18.2 International context of the guidelines

The guidelines adhere to all legally- and non-legally-binding international conventions, agreements and treaties as well as global programs and frameworks that ASEAN Member States have committed to. These include, but are not limited to, the following.

- The 17 Sustainable Development Goals were adopted by world leaders in September 2015. Built on the success of the Millennium Development Goals, the Goals are mobilizing efforts to end all forms of poverty and inequalities, and tackle climate change while ensuring that 'no one is left behind'.
- United Nations Framework Convention on Climate Change (UNFCCC) aims to stabilize greenhouse-gas concentrations in the atmosphere to prevent dangerous interference to the climate system, without any binding greenhouse-gas limits or enforcement mechanisms for countries. The framework outlines how specific international treaties (called protocols or agreements) may be negotiated to specify further action towards the objective of the UNFCCC.
- The Paris Agreement came out of UNFCCC negotiations, and aims to bolster global efforts to lower the projected temperature increase to 1.5°C above pre-industrial levels, increase the ability to adapt, foster climate resilience and low- emissions development without threatening food production, and create financial flows that support these aims. Through Intended Nationally Determined Contributions, countries create actions consistent with their own national circumstances, capabilities and priorities.
- Convention on Biological Diversity (CBD) outlines the principles governing the conservation of biological diversity, sustainable use of components and fair and equitable sharing of benefit arising from the use of genetic resources.
- United Nations Convention to Combat Desertification (UNCCD) is a 10-year strategy (2008–2018) with the goal of forging a global partnership to reverse, and prevent, desertification and land degradation and to mitigate the effects of drought to support poverty reduction and environmental sustainability. The UNCCD collaborates closely with the CBD and the UNFCCC to meet the complex challenges, with an integrated approach and the 'best possible use' of natural resources.
- The Bonn Challenge is a global effort to restore 150 million hectares of the world's deforested and degraded land by 2020 and 350 million hectares by 2030 to realize existing international commitments, including the CBD Aichi Target 15, UNFCCC REDD+, and the Rio+20 land degradation neutrality goal.
- Ramsar Convention on Wetlands is an intergovernmental treaty providing a framework for national action and cooperation in the conservation and utilization of wetlands and their resources.
- Rio Declaration on Environment and Development details principles that guide countries in balancing environmental and developmental considerations in policies and actions.
- Code of Conduct of Germplasm Collection and Transfer is a global voluntary framework that provides for the rational collection and sustainable use of genetic resources.
- International Panel on Forests proposes actions for sustainable forest management.
- Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources is a voluntary global framework that provides for the conservation and sustainable use of plant genetic resources for food and agriculture.
- Millennium Declaration and Millennium Development Goals aimed to uphold human dignity and equity, eradicate poverty, protect the common environment, support human rights and democracy, promote gender equality and good governance and form a global partnership for development³.

- Sendai Framework for Disaster Risk Reduction (2015–2030) aims to achieve substantial reduction of disaster risks and loss of lives, livelihoods and health. The Framework was adopted at the Third United Nations World Conference on Disaster Risk Reduction in Sendai, Japan on 18 March 2015.
- United Nation strategic plan for forests (2017-2030) (UNSPF) serves as a reference for the forest- related work of the UN system and for fostering enhanced coherence, collaboration and synergies among UN bodies and partners towards the following vision and mission, as well as a framework to enhance the coherence of and guide and focus the work of the International Arrangement on Forests (IAF) and its components.

18.3 Guiding principles

The guiding principles are interlinked, representing a broad philosophy that guides the development of agroforestry interventions (for example, policies, programs, projects and business investments) throughout ASEAN Member States, in all circumstances, irrespective of changes in their goals and strategies.

18.3.1 Institutional principles (1-3)

Principle 1: Create an enabling environment

Considering the lack of clear institutional home for agroforestry in many countries in Southeast Asia, it is important to provide an enabling institutional and policy environment within which the development of agroforestry policies, programs and investments can be facilitated^{2,3}. In all accountability, inclusiveness must be adhered to, at all levels of planning, decision-making and implementation of agroforestry interventions. The guidelines include, but are not limited to, the following.

Guideline 1.1. Abide with existing international and regional treaties, frameworks, agreements, strategies and programs when developing agroforestry programs, projects or policies.

Guideline 1.2. Examine national laws, regulations, strategies and programs with respect to agroforestry and formulate new, or amend existing, policies to ensure the development of agroforestry has clear policy and legal support.

Guideline 1.3. Establish an institutional 'home' for agroforestry. Assess existing circumstances, principles of good governance adopted by different sectors including FAO's responsible governance of tenure of land, fisheries and forests (transparency, equity, institutional structures and assign a suitable, or create a new, institution with relevant ministries in ASEAN Member States in charge of agroforestry development with duties, roles and responsibilities clearly defined

Guideline 1.4. Develop national agroforestry programs, strategies or road maps and support development at sub-national and local levels.

Guideline 1.5. Provide enabling conditions and procedures that encourage and reward adoption of agroforestry, such as security of land tenure, enhanced market access and improved infrastructure.

Guideline 1.6. Explore different means to provide appropriate, and continuing funding to support agroforestry development.

Principle 2: Ensure effective organizational capacity

With reference to Principle 1, capacity development of the designated or newly created institution, agency or department with relevant ministries and their key partners is necessary to effectively share knowledge, transfer technologies, conduct research, provide support services and facilitate planning. Guidelines include, but are not limited to, the following.

Guideline 2.1. Strengthen the capacity of the institution in charge of agroforestry and its partners at national and sub-national levels to effectively deliver knowledge and skills, provide technical guidance, facilitate participatory planning and decision-making at various levels, and monitor results and impacts.

Guideline 2.2. Identify and mobilize individual and institutional experts to enhance technical capacity for agroforestry development at various levels.

Guideline 2.3. Enhance national research capacity to conduct participatory agroforestry research and link knowledge to policy through direct engagement in policy and planning processes.

Guideline 2.4. Enhance national extension capacities to facilitate knowledge and skills' transfer between, and amongst stakeholders, support dialogue, plan agroforestry programs and projects, and design agroforestry options for different contexts.

Guideline 2.5. Strengthen collaboration for research and outreach between national research and extension systems and international research and development organizations, including academe.

Guideline 2.6. Encourage agroforestry education by providing support to colleges and universities in developing agroforestry curricula through existing networks of higher education in the region.

Guideline 2.7. Identify specific needs of different stakeholders and provide tailored support services for the various needs of large landholders (concessionaires, corporate farms) and smallholders.

Principle 3: Support effective cooperation and participatory decision-making

Taking into consideration the multifaceted nature of agroforestry, its evolving concepts and interfaces with agriculture, forestry and other land uses; its landscape-level interactions and links to other sectors (for example, livestock, energy, aquaculture, water, climate change, and rural livelihoods), a landscape approach to planning agroforestry interventions and inter-sectoral cooperation and integrated decision-making, as outlined in the ASEAN Multi-Sectoral Framework on Climate Change: Agriculture and Forestry towards Food Security, are needed for effective development of agroforestry. Guidelines include, but are not limited to, the following.

Guideline 3.1. Promote participatory approaches and participation of all stakeholders at appropriate levels of planning and decision- making for joint planning, targeting and implementation of agroforestry interventions, particularly, at smallholder level. Stakeholders could include policy-makers and planners from relevant sectors: private industry, investors, and concessionaires; researchers; non-government organizations; international donors and partners; farmers' organizations and cooperatives; indigenous

peoples' or ethnic minority groups; and women's and producer groups (linked to Principle 8).

Guideline 3.2. Ensure that agroforestry interventions, and their products and services, are better understood and included in sectoral strategies.

Guideline 3.3. Design agroforestry interventions in the context of a whole landscape and in relation to future changes in climatic regimes as well as economic and policy shift to ensure that on- and off-site, short- and longer- term impacts are considered, managed and monitored in accordance with social, economic and environmental standards adopted by ASEAN Member States (linked to Principle 11).

Guideline 3.4. Include and reconcile often divergent goals, interests and accountabilities of diverse stakeholders in landscapes targeted for agroforestry, including smallholders, small- and large-scale producer groups, community-based forestry groups, large-scale concessions, and state entities (linked to principles 8, 9, 11)^{4,5,6}.

Guideline 3.5. Use spatially-explicit tools to determine areas best suited for agroforestry in a landscape, according to environmental, social and economic suitability to ensure large-scale, benefits and impact (linked to Principle 11).

Guideline 3.6. Respect, utilize and/or combine traditional knowledge systems in scientific research, planning and decision-making (linked to Principle 8).

Guideline 3.7. Ensure the contribution of agroforestry to local goals and alignment with national goals, ASEAN frameworks, strategies and action programs, as well as international conventions, treaties, agreements, goals and strategies.

18.3.2 Economic principles (4, 5)

Principle 4: Recognise the value of goods and ecosystem services

Agroforestry provides many benefits in the form of goods and ecosystem services for markets, households and the environment. Agroforestry is often a traditional practice in which farmers act as custodians of the land, for which they should be recognized, rewarded or compensated for their long-term investments, such as through direct income from agroforestry products and/or through rewards for ecosystem services' schemes. Guidelines include, but are not limited to, the following.

Guideline 4.1. Promote all types of agroforestry goods (for example, raw commodities and products for consumption and sale) with, for example, unique branding and/or certification, such as Fair Trade or 'green' commodities, and strengthen support for smallholders to aggregate and thereby achieve economy of scale to benefit more from agroforestry value-chains.

Guideline 4.2. Respect local knowledge in the use of agroforestry products for various purposes, including for food and nutrition security, bio-prospecting and commercialization, and ensure equitable sharing of benefit between stakeholders (linked to principles 8, 9).

Guideline 4.3. Provide longer-term incentives⁷, payments⁸ or rewards for the range of ecosystem services^{9,10} provided by agroforestry¹¹ that are essential to watershed functions, land restoration, carbon sequestration and biodiversity enhancement, most of which are public goods (linked to Principle 6).

Guideline 4.5. Integrate agroforestry data into global, regional and national databases, for example, trees on farms, agroforestry typologies and carbon, disaster risk reduction potential, geographic distribution, productivity, profitability and adoption profiles.



Farmers in Tỏa Tình Commune, Tuần Giáo District, Điện Biên Province, Viet Nam taking seedlings to their farms for planting in their agroforestry systems. Photo: World Agroforestry/Nguyen Van Thach

Principle 5: Enable environments for agroforestry investments and markets

Creation by ASEAN Member States of enabling environments with direct and indirect incentives encourages corporate and smallholding investors to make longer-term investments in agroforestry. Such investments can be oriented toward markets except in the case of subsistence production in areas in which access to markets and other factors, provide high barriers. New market mechanisms may be needed but can have contradictory social and economic effects, hence, the development of enabling environments for agroforestry investments must be consistent with the ASEAN Guidelines on Responsible Investment. Guidelines include, but are not limited to, the following.

Guideline 5.1. Identify and develop financial schemes, including pro-poor credit schemes (for example, with longer payback periods and lower interest rates) to support agroforestry business models for smallholders and small- and medium-sized enterprises.

Guideline 5.2. Provide policies that support longer-term but flexible investments and land- use planning at national and sub-national levels to provide confidence to financiers to invest in agroforestry.

Guideline 5.3. Provide technical and trade promotion support to develop agroforestry value chains and create market links (linked to Principle 4)¹².

Guideline 5.4. Provide transparent and simple procedures for processing and marketing agroforestry products to stimulate small- and large-scale investments.

Guideline 5.5. Remove economic distortions emanating from other sectors that reduce the value of agroforestry products, or which limit opportunities for agroforestry investors, especially, smallholders.

Guideline 5.6. Provide a range of direct and indirect incentives for agroforestry interventions that benefit society (linked to Principle 4).

18.3.3 Environmental principles (6, 7)

Principle 6: Maintain and enhance ecosystem services at farm and landscape scales

Agroforestry farms are often located in landscapes that serve multiple purposes at the same time. In many cases, they are in critical upland and watershed areas. Thus, agroforestry practices will, in addition to producing goods, have an impact on the provision of multiple ecosystem services. Because of this, agroforestry development should ensure that ecosystem services emanating from these landscapes are conserved, restored or improved¹³. Careful planning and proper management of agroforestry should be promoted to achieve targeted ecological benefits without undermining economic and other benefits. Guidelines include, but are not limited to, the following.

Guideline 6.1. Ensure that agroforestry interventions are planned with the purpose of achieving multiple benefits simultaneously — economic, social and environmental — at various scales from farm through to landscape levels (linked to principles 3, 11)^{14, 15}.

Guideline 6.2. Recognise and assess positive impacts of agroforestry in the maintenance and enhancement of ecosystem services, including in the restoration of forest and landscape functions, rehabilitation of degraded land, abatement of soil erosion, mitigation of climate change, and combating of desertification (linked to principles 4, 11).

Guideline 6.3. Conduct environmental impact assessments before implementing large-scale agroforestry interventions, including establishing baselines by which to monitor effects on ecosystem services.

Guideline 6.4. Facilitate a comparable biodiversity gain to compensate for any losses or unavoidable damage caused by the development of agroforestry after having applied mitigation measures.

Guideline 6.5. Develop and implement standard operational practices in the establishment and management of agroforestry interventions to ensure their contribution to ecosystem services (linked to principles 11, 12).

Principle 7: Understand and manage trade-offs

A trade-off is a balancing of benefits that are not attainable at the same time¹⁶. Understanding and managing trade-off is of importance when introducing agroforestry where trees, crops, fish and livestock are integrated on the same land unit. Trade-off arise both spatially regarding the arrangement of different components in agroforestry, and temporally, for example, the integration of trees as part of a farming system may result in a longer period between investment and return. To better understand and manage trade-off guidelines include, but are not limited to, the following.

Guideline 7.1. Use participatory methods to understand smallholders', medium- and large-scale and corporate farmers' decision-making both for short- and sustainable long-term production, with consideration of the needs of different household members (especially, women and youth), industry and markets (linked to principles 3, 11, 12).

Guideline 7.2. Project the magnitude of potential trade-off and support decision-making by quantifying the economic and environmental costs and benefits of agroforestry interventions. Costs are inputs such as land, labour and financial investments whilst benefits are outputs such as trees, crops, fish and livestock products and/or ecosystem services (linked to principles 4, 6).

Guideline 7.3. Consider foregone income of farmers and investors, especially during initial years of agroforestry establishment, and seek ways and means of reducing and managing trade-off for example, through longer-term credit, lower interest rates, tax holidays, insurance premiums, and incentives for the provision of ecosystem services (linked to principles 4, 5, 6).

18.3.4 Socio-cultural principles (8-10)

Principle 8: Recognise and respect local knowledge, traditions and choices

Social norms, cultural value systems, and local/traditional knowledge systems should be taken into consideration in planning and implementing agroforestry interventions. Guidelines include, but are not limited to, the following.

Guideline 8.1. Recognise and respect local, traditional or customary value systems, including indigenous knowledge and practices, of communities targeted for agroforestry interventions (linked to principles 4, 10).

Guideline 8.2. Secure local stakeholders' buy-in to major agroforestry investments through a process of free, prior and informed consent (linked to Principle 10)¹⁷.

Guideline 8.3. Ensure that local knowledge and choices regarding agroforestry options (for example, tree and crop species, livestock breeds and types), purpose and practices are taken into consideration when conducting research, and during planning and decision-making (linked to principles 3, 4, 10, 11, 12).

Guideline 8.4. Recognise and address local people's unique needs for training, technology, land and resource rights, physical infrastructure, and market information, especially for indigenous peoples and ethnic minorities (linked to Principle 3).

Guideline 8.5. Establish socio-economic-cultural baselines for monitoring progress and evaluating impact as well as for compliance with social-welfare laws and investment guidelines adopted by ASEAN Member States and applicable international laws.

Guideline 8.6. Prevent displacement or alienation of local communities by major agroforestry investments (linked to principles 3, 8, 9).

Principle 9: Support gender equity and social inclusion

Social inclusion and gender equity should be considered when craft policies and when planning and implementing agroforestry interventions. These must be accessible to all types of social groups, including marginalized groups, such as indigenous peoples and ethnic minorities, as well as youth. Gender differences should be considered, and gender synergies promoted in agroforestry. Implementation of the guidelines to this principle should align with the ASEAN Guidelines on Gender. Guidelines include, but are not limited to, the following.

Guideline 9.1. Acknowledge the importance of gender equity and social inclusion in decision-making, design and implementation of agroforestry interventions.

Guideline 9.2. Ensure beneficial participation in agroforestry interventions by smallholders and socially-marginalized groups, such as indigenous peoples/ customary people/ethnic groups, displaced residents.

Guideline 9.3. Ensure that socially- marginalized groups benefit from, or are not adversely affected by, large-scale or corporate agroforestry investments (linked to principles 8, 10).

Guideline 9.4. Ensure that agroforestry interventions reinforce gender equity by understanding differences in gender roles, decision-making, constraints and opportunities, and seeking to improve women's access to agroforestry opportunities (including information, technologies, fi) and associated benefits

Guideline 9.5. Ensure that introduced agroforestry options or technologies are gender sensitive especially when it comes to the labour required from women.

Guideline 9.6. Strengthen the capacity of national research and extension systems and non-governmental organizations to undertake socially- and gender¹⁸-inclusive agroforestry interventions (linked to Principle 2).



In this photo, women in East Sumba District, Nusa Tenggara Timur Province, Indonesia are playing a game devised by ICRAF staff to help them identify which species are best for domestic and commercial purposes. Photo: World Agroforestry/Iskak Nugky Ismawan

Principle 10: Ensure safeguards and tenure rights

Agroforestry interventions will most likely create tensions amongst stakeholders in areas where rights to land and natural resources are unclear. Safeguarding tenure rights is, thus, important to ensure that agroforestry interventions do not jeopardize community rights or adversely impact the social fabric and livelihoods of local communities. Guidelines include, but are not limited to, the following.

Guideline 10.1. Understand tenure rights of stakeholders in areas targeted for major agroforestry interventions, especially those by corporate investments¹⁹.

Guideline 10.2. Engage stakeholders in dialogues when planning major agroforestry interventions, respect their aspirations and rights and ensure farmers engaged in agroforestry, are not threatened or involuntarily displaced by large-scale agroforestry investments (linked to principles 3, 7, 8, 9).

Guideline 10.3. Ensure security of land-tenure rights of stakeholders involved in, and/or impacted by, agroforestry interventions to avoid social conflicts and secure returns on investments.

Guideline 10.4. Ensure free, prior and informed consent of rights holders who could be adversely or otherwise affected by major agroforestry interventions, and just compensation for any unavoidable damage inflicted (linked to principles 7, 8).

18.3.5 Technical design principles (11-12)

Principle 11: Design agroforestry options based on context

A variety of agroforestry systems and options exist, with their success being dependent on effective designs based on local contexts linked to sub-national, national and global conditions. Achieving economic, socio-cultural and environmental benefits simultaneously is the main goal of agroforestry. Trade-off often exist but well-designed agroforestry can simultaneously provide multiple benefit and satisfy the needs of different stakeholders. To achieve optimal benefits in agroforestry, guidelines include, but are not limited to, the following.

Guideline 11.1. Provide user- friendly, decision-support tools ²⁰for stakeholders to collectively assess information, identify opportunities and constraints, and make informed choices about agroforestry options. Decision support includes information and datasets of biophysical parameters — such as topography, land use, soil, temperature and rainfall — and socio-economic statistics including gender, market information, infrastructure issues and related policies.

Guideline 11.2. Ensure that agroforestry options are selected based on the specific needs, interests or purposes of individual (smallholders, large- holders, corporations) and public (government, non-governmental organizations) stakeholders, considering possible changes in future climatic regimes, economic conditions and policies (linked to principles 3, 7, 8, 9).

Guideline 11.3. Design agroforestry options based on local contexts in relation to biophysical, socio- economic (including labour availability and affordability), cultural, infrastructural, market and policy conditions (linked to guideline 12.2 and principles 3, 5, 9, 10), and considering temporal (for example, rotation of trees, crops, livestock, fi and spatial (for example, spatial arrangement of the components in the system) dimensions of agroforestry.

Guidelines 11.4. Aim for optimal benefits by ensuring agroforestry options are designed to provide economic benefits simultaneously with socio- cultural and environmental benefits, taking into consideration local contexts, including socio-cultural conditions (linked to principles 2, 9) and the land-tenure status of direct stakeholders (linked to Principle 10).

Guideline 11.5. Ensure that selected agroforestry options are implemented in combination with applicable conservation and climate-smart agricultural technologies²¹, such as contour ploughing (especially on steeply sloping land), cover-cropping, mulching, ridge or zero tillage, drought-resistant varieties, and water-saving technologies.

Guideline 11.6. Provide technical guidance to ensure proper management of selected agroforestry options through training and extension material to support continuous education and lifelong learning (linked to principles 2, 6).

Principle 12: Select agroforestry components in a participatory manner

Selecting and deciding on tree, crop, livestock and fi aquatic components with respect to the spatial and temporal dimensions of agroforestry is crucial to success. Depending on the goals (short to medium or long term) of small-, large-holding and corporate farmers, their productive resources (land size, labour, capital) and other considerations, such as tenure and markets, the careful selection of components in agroforestry should be based on the concept: 'The right species of trees, crops, livestock and/ or fi in the right place for the right purpose'²². Guidelines include, but are not limited to, the following.

Guideline 12.1. Identify plant, livestock and/or aquatic species and varieties that match the biophysical conditions (temperature, rainfall, elevation and soils) of areas targeted for agroforestry by noting their existence in the areas and at similar sites (linked to principle 11)^{23, 24 25}. Consider future changes in climatic regimes when selecting species, varieties and breeds included in agroforestry systems. It is best to accompany this process with a market survey of the species and varieties to identify their markets and better design strategies for marketing the agroforestry products (linked to principle 11).

Guideline 12.2. Conduct a survey or workshop with local stakeholders to identify their preferential uses (goods and services) of trees²⁶, crops, livestock, fish and the species they want to cultivate, ensuring that the process is inclusive and equitable. When necessary, organize separate survey groups for men, women, youth and marginalised groups to ensure all can provide input (linked to principles 8, 9, 10, 11).

Guideline 12.3. Examine and apply existing technical guidelines adopted by ASEAN Member States concerning germplasm selection, quality, sourcing, distribution and management as well as those concerning selection of livestock and aquatic species and breeds. Ensure native plant, livestock and aquatic species and/or breeds are not adversely affected by introduced exotic species and/or breeds in the agroforestry systems.

Guideline 12.4. Ensure active participation of key stakeholders, particularly farmers, investors, extension workers and government agencies in decision-making regarding the components in agroforestry systems.

18.3.6 Communication and scaling principles (13,14)

Principle 13: Effectively communicate agroforestry knowledge

Taking into consideration a general lack of detailed knowledge about the development and management of agroforestry among ASEAN Member States and the varied and complex nature of agroforestry practices, managing knowledge and communicating it is critically important for policy makers, farmers, investors and market actors, to encourage widespread adoption, and continuous development, of agroforestry. Guidelines include, but are not limited to, the following.

Guideline 13.1. Identify knowledge and communication needs and gaps of all stakeholders — including farmers, extension and advisory agencies, local and national governments,

market actors, investors — through participatory methods to provide tailored support as required.

Guideline 13.2 Communicate clearly between all stakeholders in a landscape and/or value chain in preferred languages and formats — including, but not limited to, written and audio-visual material, large and small meetings, skills' workshops, field training and demonstration plots — to better understand the issues facing adoption of agroforestry.

Guideline 13.3. Strengthen the knowledge management and communication capacity of institutions in charge of, and those already involved in, agroforestry, including their partners at national and sub-national levels, so as to more effectively create and share knowledge and skills, provide technical guidance, facilitate planning and decision-making at different levels, monitor results and impact, promote methods, results and achievements specifically and widely, and support financial mobilization for research and development of agroforestry.

Guideline 13.4. Adequately provide resource knowledge management and communication to ensure all stakeholders are informed, can engage in discussion, are able to increase their knowledge and skills and can continuously adapt and improve.

Principle 14: Plan for effective scaling up and sustainability

In consideration of the context-specificity of agroforestry interventions, scaling-up agroforestry must be carefully planned and take into account universal and contextual perspectives. The requirements for scaling-up agroforestry to achieve lasting impact must be thoroughly determined. Guidelines include, but are not limited to, the following.

Guideline 14.1. Engage stakeholders and sectors in planning for scaling agroforestry interventions (linked to principle 3).

Guideline 14.2. Understand the highest potential for, and limits to, scaling agroforestry by examining internal and external opportunities, including biophysical, social, cultural, labour and market conditions, as well as the strategies and plans of related sectors that may have an impact on the proposed scaling up.

Guideline 14.3. Ensure that the requirements for scaling are understood by stakeholders and are wholly or partially addressed at targeted sites.

Guideline 14.4. Understand the focus of scaling, which could be either the technical or institutional aspects of agroforestry or both. Technical aspects include selection of trees, crops, livestock and/or aquatic species' system components, design and management practices, and expected farm- and landscape- scale impact. Institutional aspects include organizing smallholders, building partnerships, training approaches and funding mechanisms.

Guideline 14.5. Agree on appropriate modalities for scaling contexts, including the key actors to be involved, for example, local governments, private companies, producer groups, extension agencies.

Guideline 14.6. Review scaling approaches, processes and achievements periodically to address gaps, issues and opportunities or devise recourse measures.

Box 18.3 Current understanding of agroforestry

Agroforestry is the interaction of agriculture and trees (forestry), including the agricultural use of trees. This includes trees on farms and in agricultural landscapes, farming in forests and at forest margins, and tree-crop production. Interactions between trees and other components of agriculture such as livestock, fish and aquatic species is important at a range of scales: in fields (where trees and crops are grown together), on farms (where trees may provide fodder for livestock, fuel, food, shelter or income from products, including timber)²⁷ and landscapes (where agricultural and forest land-uses combine in determining the provision of ecosystem services)²⁸. At national and global scales, forestry and agriculture interact ecologically and through policies relating to land use and trade and are important with respect to climate change and other environmental concerns²⁹. Agroforestry embraces an agro-ecological approach emphasising multi- functionality and the management of complex systems and polycultures rather than focusing exclusively on monoculture³⁰. The word 'tree' is used inclusively to refer to trees and shrubs, all woody perennials, palms and bamboos. Similarly, the word 'agriculture' is used inclusively to refer to a human activity carried out primarily to produce food, fibre and fuel by the deliberate and controlled use of plants, animals and aquatic species. Agroforestry has proven benefits in areas of food security and family nutrition, energy supply from fuel wood, climate-change adaptation and mitigation, watershed regulation, land restoration, and agri-biodiversity improvement, among others. Agroforestry also helps farmers spread economic and environmental risks, providing important income sources for rural households, especially in the face of climate change. Farmers in Southeast Asia have for a long-time practised agroforestry and the types of agroforestry can be distinguished by their origin in the region.

The importance of forests for the health of the planet is well acknowledged but trees outside forests also have a vital role to play in landscape restoration and in achieving ambitious international and national targets in areas dominated by agriculture. There are many ways to rehabilitate degraded landscapes, but few can restore biodiversity and ecosystems while also delivering food and nutrition security, income and other ecosystem services through engaging and empowering local communities in the way that agroforestry does. When used as a tool for forest and landscape restoration, agroforestry can enhance physical, chemical and biological soil characteristics thereby increasing soil organic matter and fertility, enhancing nutrient cycling, controlling soil erosion and regulating water. The restoration of degraded landscapes with agroforestry can increase the resilience of communities to shocks, including drought and food shortages, and help adapt and mitigate climate change³¹.

Today, agroforestry is increasingly recognized to achieve many international conventions, frameworks and targets that ASEAN Member States are all committed to. Among others, the Paris Agreement that came into force on 4 November 2016 provides a global framework for advancing agroforestry because trees in forests and on farms are central to climate-change mitigation and adaptation. Because of trees' capacity to sequester carbon, agroforestry can contribute to achieving ASEAN Member States' Nationally Determined Contributions. Agroforestry can also be instrumental in reaching the Sustainable Development Goals, helping to eradicate hunger, reduce poverty, support gender equity and social inclusion, provide affordable and cleaner energy, protect life on land, reverse land degradation and combat climate change.

18.4 Implementation considerations

These principles and guidelines form a framework that can facilitate discussions about the formulation of agroforestry policies, strategies, programs and projects by ASEAN Member States. They also provide guidance for agroforestry investments by the private sector. For implementation purposes, technical guidelines relevant to agroforestry that are tailored to specific ecological and socio-cultural zones in ASEAN Member States should be followed. Some considerations for implementation are discussed below.

18.4.1. Institutional roles and arrangements

Governments and agencies at different levels of ASEAN Member States, non- governmental organizations, farmers' associations and cooperatives, community-based organizations, the private sector (small- or large holders, small- and medium-sized enterprises, corporations) and others all have different roles to play. Concerted effort is needed in creating an enabling environment, enhancing organizational capacities and participatory inter-sectoral collaboration and decision-making (principles 1, 2, 3). Identifying key stakeholders and understanding their roles, needs and aspirations is a necessary first step toward an enabling environment for agroforestry.

Successful agroforestry interventions require government support through policies and funded programs, given competing interests from commercial monoculture agricultural production. As elaborated in Principle 1, ASEAN Member States should identify a dedicated institution responsible for agroforestry development in their respective countries. Social Forestry is amongst many national programs and mechanisms in which agroforestry can be implemented with policy backing and funding support. Many ASEAN Member States have social forestry programs with plans and targets to improve forest peoples' livelihoods while protecting and sustainably managing forest; agroforestry plays a critical role in achieving these goals.

Private-sector investors play crucial roles in agroforestry development, particularly, agri-industrial companies with an interest in sustainable production that are aiming for certification that will enable them to brand their products as 'environmentally friendly'.

National research and academic institutions need to be engaged in agroforestry research, training and education to 1) continuously generate agroforestry knowledge and evidence needed for adjusting and/or refining technical and policy recommendations; 2) develop tools and methods for knowledge generation, monitoring and impact evaluation; and 3) support continuous learning, education and knowledge dissemination. Basic and applied research in agroforestry should be carried out in a participatory manner (principles 3, 8, 9).

The forestry and agricultural extension or rural advisory services in ASEAN Member States also play crucial roles in sharing knowledge and experience, training and building cadres of extension workers with the right skills to facilitate agroforestry planning, implementation, monitoring and evaluation.

Farmers' associations and cooperatives and community- based organizations are also vitally important in the co-production of agroforestry knowledge, farmer-to- farmer sharing of

knowledge and experience, adoption of agroforestry options best suited to their own contexts in relation to biophysical, socio-economic, cultural, market and policy conditions, consolidation of the aspirations, concerns and products of the farmers, and fostering dialogue amongst stakeholders, including policy makers and investors.

Members of the CGIAR, a global partnership for a food-secure future, also play a role by aligning their research programs with ASEAN Member States' agroforestry agendas and/or directly conducting research together with regional and national partners.

Finally, United Nations' organizations, particularly FAO, play crucial roles in providing technical assistance, policy advice and, where possible, funding toward the implementation of these guidelines.

18.4.2 Planning and financing

Since agroforestry is not explicitly in the hands of either agriculture or forestry, ASEAN Member States aspiring to develop a national agroforestry program should, first, consider the institutional infrastructure required to make a national program successful (principle 1). Headed by designated institutions within relevant ministries, a special multi-sectoral committee or taskforce could be created to facilitate planning. This approach aligns with the ASEAN Multi-Sectoral Framework on Climate Change: Agriculture, Fisheries and Forestry towards Food Security, which provides a mechanism for coordinated actions.

Planning for an agroforestry vision and road map by ASEAN Member States is desirable to show the way forward. There are many ways to drive agroforestry development in the region, including creating a favourable investment environment with supportive policies that stimulate market openings for agroforestry products and mainstreaming agroforestry in existing strategies, plans and targets, for example, sustainable or low-emissions development plans, national REDD+ action plans, rural development plans, land restoration programs, land-use planning, and Nationally Determined Contributions. International development and bilateral partners of ASEAN Member States can be sought to align their development programs with, or directly provide funding support, to Member States' agroforestry programs.

Planning for agroforestry programs or projects at national and sub-national levels requires scoping and situation analyses to identify issues, challenges, gaps and opportunities. If positive signals give potential investors (smallholders, large-holders, corporations) the confidence to invest in agroforestry, financial feasibility studies and long-term strategic and medium-term management planning needs to be undertaken. Planning at the local community, farm or fish level should be facilitated by extension agents trained in agroforestry (Principle 2) and include selection of a number of agroforestry options best suited for specific contexts, considering their specific environmental, social, cultural, market and policy conditions (principle 12).

18.4.3. Research and continuous learning

Continuous learning and research are needed for the co-production of agroforestry knowledge not only to underpin efforts to scale best practices but also to enable adjustments of existing agroforestry technologies and practices to address changes in local contexts,

including future changes in climate regimes and influences from external factors (principles 3, 12). Documenting and taking stock of success and failures of past and existing agroforestry models is a good start to prioritize research in various aspects of agroforestry. Research should be action oriented and carried out in a shared-learning and participatory mode with stakeholders. Part of the planning process could be to identify research and academic institutions involved, or wanting to be, in agroforestry research and rally their support to undertake coordinated efforts to ensure complementarity rather than duplication of research efforts. Development of agroforestry curricula should be supported to ensure agroforestry is taught in institutes of higher education, building upon the work of the Southeast Asian Network for Agroforestry Education that was established by the World Agroforestry Centre in the late 1990s with funding from the Swedish International Development Agency, as well as other higher education networks existing in the region. Such efforts should also be aligned with the broad goals of the Southeast Asian Ministers of Education Organization's Southeast Asian Regional Center for Graduate Study and Research in Agriculture.

18.4.4. Monitoring and evaluation

In view of agroforestry's potentially large addition to Nationally Determined Contributions, Land Degradation Neutrality targets, food security and other goals, targets and strategies where agroforestry potentially contributes, ASEAN Member States can include agroforestry in their monitoring, reporting and verification schemes. Any monitoring process should ensure that the following principles are addressed by agroforestry programs:

- 1) Continuous learning: the program should embrace an iterative process of gaining feedback and informing stakeholders. The program should be adaptive in accepting feedback to improve its activities.
- 2) Participatory and user-friendly monitoring: the development of monitoring tools is best done in a participatory manner to ensure friendliness for users.
- 3) Strengthened stakeholder capacity: effective participation requires technical, social and financial skills and abilities. Strengthening these capacities can increase stakeholders' involvement in monitoring, especially with farmers' organizations and cooperatives, and forest user groups

At ASEAN level, monitoring the uptake of this framework by Member States should be coordinated by the ASEAN Food, Agriculture and Forestry sector using applicable monitoring instruments already adopted by ASEAN, such as the ASEAN monitoring on food security, environment and climate change. The ASEAN Multi- Sectoral Framework on Climate Change: Agriculture, Fisheries and Forestry towards Food Security can also be used for monitoring and assessing the uptake of the guidelines by Member States, particularly in regard to multi-sectoral cooperation within Member States.

FAO may also consider monitoring and assessing progress of implementation of these Guidelines by ASEAN Member States, in view of its global database on tree cover and trees outside forests.

18.4.5. Knowledge management

One of the many issues raised in the development of agroforestry is a lack of information and knowledge sources in ASEAN Member States. This is linked not only to the lack of institutional home for agroforestry research and development in many ASEAN Member States but also because agroforestry knowledge is often available only as scientific articles, which are not readily accessible to policy makers and planners. In relation to Principle 13, agroforestry knowledge must be communicated effectively but it cannot be effectively managed and communicated unless responsibility is delegated to appropriate bodies. It is thus important for ASEAN Member States to create a facility for managing agroforestry knowledge effectively, and ensure such knowledge is readily accessible to a broad range of users. The tasks of this facility would be to collect and categorise agroforestry knowledge, establish a knowledge-oriented technology infrastructure, such as web portals, and monitor use (linked to monitoring and evaluation in Section 5.4). Knowledge management of agroforestry is a task that can be delivered by the designated or newly-created institution referred to in Principle 1. This task can be shared with many knowledge owners and brokers, such as research institutions and academe, as well as non- governmental organizations.

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