



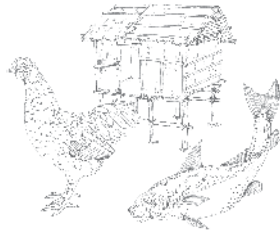
Food and Agriculture
Organization of the
United Nations



REPORT

ON THE MULTI-STAKEHOLDER CONSULTATION ON AGROECOLOGY *in Asia and the Pacific*

FAO, Bangkok, 24-26 November 2015



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SUMMARY

Seeking to gain a better understanding of the role that agroecology can play in eradicating hunger and malnutrition, FAO organized the International Symposium on agroecology for Food Security and Nutrition in September 2014 in Rome, Italy, followed by three regional meetings in Asia and the Pacific, sub-Saharan Africa and Latin America and the Caribbean. The Multi-stakeholder Consultation on agroecology for Asia and the Pacific was held in Bangkok, Thailand on 24-26 November 2015.

FAO acted as a facilitator to enable debates and foster collaboration among a variety of actors in order to advance science, knowledge, public policies, programmes and experiences on agroecology, supporting the strengthening of the already-extensive evidence-based knowledge for agroecological approaches in agriculture.

The participants in this meeting, representatives of governments, civil society, including peasants, fisherfolks, pastoralists, urban communities, indigenous peoples, women's organizations, youth and others, academia, and private sector, issued recommendations for the development of agroecology in Asia and the Pacific after two days of discussion (see **Annex 1**).

It was stated that, in a number of cases, farmers' incomes and livelihoods have been negatively affected by the Green Revolution approaches, and farmers have become disempowered by the process. A reversal of the existing chemical-dependence of farming is needed. Agroecology, which is based on the adaptation of agriculture to local conditions, natural cycles and inclusive needs is integrated in the way of life of many small producers as they conserve the ecosystems that underpin their own survival.

Agroecological solutions combine traditional farming practices with existing and novel farming holistic management systems, such as: Systems of Rice Intensification, Integrated Farming, Conservation Agriculture, Integrated Pest Management, Organic Agriculture and Agroforestry. Results of these agroecological solutions have proven track records on improving harvests for farmers while safeguarding the environment.

Based on the consensus that conventional agriculture makes farmers more vulnerable, particularly in the context of a changing climate, participants in the regional meeting emphasized the need for a transition towards agroecology through a better integration of ecosystem services into agriculture. By using agroecological practices at farm level, farmers can save money and use ecosystem services to increase the value of the farm.

Agroecology is both knowledge intensive and based on interdisciplinary approaches, which represents an innovation but also a challenge. Meeting participants emphasized the utility of multistakeholders platforms for the collection and exchange of agroecological experiences and innovations. They emphasized the importance of integrating agroecology in the curricula of both formal and informal primary and higher education, including Farmer Field Schools.

The importance of support from governments for consumer awareness and education for agroecological principles and values and for creating an enabling environment for agroecological products was highlighted.



Empowering smallholder farmers was presented as a priority to end hunger and achieve economic, social, and environmental sustainability. For an agroecological transition to happen in Asia, it was stated that the existing, production-focused paradigm of agricultural development will need to make way for a more holistic, people-and rights-centred approach.

Farmers are in transition, moving away from Green Revolution approaches, but they are at different stages of the transition. Interdisciplinary and participatory research should be used to assure support to different levels of transition and demonstrate concrete and relevant evidence of the environmental, economic and social performance of agroecology.

Change is already happening and more is needed in order to put forth a new paradigm of agriculture not solely focused on production but on people's rights and needs, including those of future generations, through ecosystem goods and services.

This report provides an overview of the Regional Seminar.

General information and more resources (videos and presentations) are available on the website: www.fao.org/asiapacific/events/detail-events/en/c/1262



CONTEXT OF THE REGIONAL MEETING ON AGROECOLOGY IN ASIA

FAO organized a Symposium on Agroecology for Food Security and Nutrition in Rome, Italy on 18 and 19 September 2014. This Symposium gathered 400 scientists, producers, decision-makers and representatives of the private sector, the public sector and NGOs. On the occasion of the Symposium, the Director-General of FAO, José Graziano da Silva, announced that FAO would organize regional meetings on agroecology in Latin America, Africa and Asia. This reflects one of the lessons learnt during the international Symposium, namely that the implementation of agroecology, in order to be effective, must be based on regional and local realities and on the specificity of economic, social and environmental contexts.

In February 2015, the representatives of small-scale food producers and civil society gathered at the Nyéléni Centre in Sélingué, Mali and agreed on the Nyéléni declaration on agroecology, explaining the points of view of the civil society on agroecology.

From 24 to 26 November 2015, over 150 participants representing governments, civil society, including peasants, fisherfolks, pastoralists, urban consumers, indigenous peoples, women's organizations and youth, academia and the private sector, gathered in Bangkok **for the Multi-stakeholder Consultation on agroecology in Asia and the Pacific** organized by FAO. The consultation was elaborated by an Advisory Panel (see **Annex 2**).

The discussions were organized in two pre-meetings and seven sessions on the following subjects:

Pre-meetings:

1. Farmers' Fields Schools (FFS) and agroecology
2. Agroecology Knowledge Platforms and Farmer-Researcher Networks

Sessions:

3. Overview of agroecological systems in Asia and the Pacific and examples of agroecology approach diversity in the region;
4. Agroecology and natural resources in the context of climate change;
5. Agroecology learning processes, knowledge-sharing and building agroecological movements;
6. Making markets work for agroecology;
7. Agroecological transitions in Asia for food and nutrition security, initiatives and policies to scale up agroecology;
8. Synthesis of the key points of the discussion and recommendations;
9. Multi-stakeholder discussion panel: outcome and way forward.

The participants in this meeting, representatives of governments, civil society, including peasants, fisherfolks, pastoralists, urban communities, indigenous peoples, women's organizations, youth and others, academia, and the private sector (see **Annex 4** for the participants list) issued recommendations for the development of agroecology in Asia and the Pacific (see **Annex 1**).



OPENING

Speakers

Theerapat Prayurasiddhi (Permanent Secretary of the Ministry of Agriculture and Cooperatives of Thailand)

Ubon Yooway (Civil society representative from La Via Campesina, Thailand)

Vili A. Fuavao (FAO Deputy Regional Representative for Asia and the Pacific)

Chaired by **Subash Dasgupta** (FAO Regional Office for Asia and the Pacific)

The speakers emphasized the following key points related to their vision of agroecology and the challenges, from government, civil society and FAO perspectives.

The nature of the consultation

The speakers highlighted the strong participation of representatives from all over Asia and the Pacific, and the world, indicating their commitment to the topic. This consultation was seen as having an innovative nature, bringing together representatives of governments, civil society and non-governmental organizations, private sector, academia, small-scale food producers and others to understand the status of agroecology in Asia and how agroecology can be further advanced.

A new paradigm

Agroecology has been practised for a long time in the many regions of Asia. The Green Revolution in Asia has been credited with increasing yields and warding off crises of food security, but the region continues to be home to two-thirds of the world's nearly one billion hungry people. The Green Revolution precipitated widespread degradation of landscapes and farming systems, now facing even greater threats in the context of climate change. This situation requires a review of the current paradigm, and consideration of alternative approaches, agroecology being a very important alternative approach.

Increasing production is necessary but not sufficient for ending hunger. Agriculture, in the future, will need to decouple from fossil fuel dependency, have a low negative social and environmental impact, be multifunctional and resilient to climate change. Productivity should be integrated with diversity, efficiency and with low external inputs. Worldwide, 795 million people – mainly in rural areas – are still suffering from hunger. Farmers need to become more independent and empowered.

As FAO's Director-General makes clear at every opportunity, food production, or its availability in food security analyses, is not sufficient for food security. Access, utilization and stability are all necessary aspects of food security, as well as availability.



Evolving concepts of food security and food sovereignty

As recalled by the civil society, food sovereignty was defined by the Nyéléni Declaration as the “right of peoples to healthy and culturally-appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems”.¹ The concepts of food security and food sovereignty are emerging from the current situation in which the role and dignity of farmers are either not recognized or have been diminished because farming systems are promoted that are highly dependent on external private sector actors for seeds and other agricultural inputs.

Innovation and ecosystem services

The central importance of seed saving was highlighted, noting the loss of diversity of seeds. Many native vegetables are not just vegetables, they are also medicines that keep people healthy. Other reasons for saving seeds are that costs can be lowered and the resilience of communities can be safeguarded.

The transformation of agriculture towards sustainability requires the integration of ecosystem services through the use of agroecological techniques to enhance farm productivity in order to achieve food and nutrition security in a sustainable manner.

The centrality of land as the “capital of life” was stressed, demonstrating the importance of land reform as a basis for agroecology.

From the civil society, the need for a change in the way research is conducted was highlighted. This should include supporting and building the capacity of farmers to define research topics, to act as researchers themselves, as well as the importance of farmers having control over their own genetic resources. Agroecology goes beyond the technical dimension to include the social and ecological dimensions. As a marriage of knowledges of farmers’ traditional knowledge and other sciences, agroecology calls for participatory research.

The international context of UNFCCC, COP 21 and the SDGs

Given that agriculture is a major emitter of greenhouse gases, agroecology is a powerful concept for contributing to both the mitigation and the adaptation of climate change through the use of environmentally-sound agricultural practices.

The Sustainable Development Goals (SDGs) are a landmark agreement, aiming to free the world from poverty and hunger and to achieve sustainable development within the next 15 years. A joint effort by all stakeholders will be needed to achieve these ambitious goals. The UN SDG 2 (and the UN Zero Hunger Challenge) emphasizes the need for all food production systems to become much more sustainable.

Both the representative of the Government of Thailand and the FAO Representation confirmed their bodies’ respective commitments to address the recommendations from this forum.

¹ <http://nyeleni.org/spip.php?article290>



I) OVERVIEW OF AGROECOLOGICAL SYSTEMS IN ASIA AND THE PACIFIC AND EXAMPLES OF AGROECOLOGY APPROACHES AND DIVERSITY IN THE REGION

Speakers

Htett Kyu and Pierre Ferrand (GRET, LAO)

Zainal Fual (Serikat Petani Indonesia (SPI))

Frank Enjalric (Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), France)

Sophal Chhong (Farmer and Nature Net (FNN), Cambodia)

Gilbert Rodrigo (World Forum of Fisher Peoples (WFFP), India)

Dinesh Desai (MARAG, India)

Robert Fenton (Riverina Institute Tafe, Australia)

Rada Kong (Cambodian Acid Survivors Charity (CASC), Cambodia)

Brother Anurak Nidhibhaddrabhorn (The Communal Life of Love and Unity of the Mountain People (CLUMP), Thailand)

Chaired by **Chukki Nanjundaswamy** (La Via Campesina member Karnataka State Farmers Association South Asia (KRRS), India)

Background

The concept of food producers was highlighted as it includes peasants but also fisherfolk, pastoralists, urban communities, indigenous peoples, women's organizations, youth and others, who are nourishing and maintaining communities through agroecology.

Experiences from highlands, drylands, tropical forests, inland and ocean-fishing contexts in Asia clearly illustrated that agroecological practices are developed in a diversity of contexts.

Participants highlighted the fact that agroecology is not a new concept, but rather based on indigenous knowledge of local ecological processes, transferred from generation to generation, which benefit from context-specific techniques and innovations stemming from research. It has been practised by small-scale Asian food producers across the region.

Agroecology is often presented as a scientific discipline, as a set of practices and social movements. It was emphasized that agroecology consists of a set of principles (**Box 1**) which are applied in a context-specific manner.

Food producers have long been imitating natural systems through their agricultural practices, such as minimizing external inputs for their farms or adopting selective fishing. They have accumulated experience, knowledge and wisdom over generations and have worked to nourish their communities without significantly damaging the ecosystems on which their food production depends (land, forests, fisheries, pastoral resources), handing down their knowledge from generation to generation.



Along with the social dimension of agroecology, the livelihood and economic dimension is equally important in the agroecological approach.

Although they do not systematically use the term agroecology, many actors and initiatives throughout Asia and the Pacific rely on agroecological principles, which include the protection of natural habitats. There are many ecological zones and a great societal diversity within this region, resulting in unique agroecological approaches.

The introduction of the Green Revolution with new varieties and chemical inputs or new types of fish trawling have increased the pressure on local resources, which in turn threatens food producers' livelihoods and welfare through reduced harvests, degraded soil, more pests and diseases, and more extreme climate events.

In a number of cases, food producers' incomes and livelihoods have been negatively affected by the Green Revolution approaches or inputs, and have become disempowered by the process. A reversal of the existing chemical-dependence of farming practices is needed. This can be achieved through agroecological solutions which combine traditional farming practices with existing and new farming technologies, such as Conservation Agriculture, System of Rice Intensification, IPM, Organic agriculture, Integrated Farming, and Agroforestry (**see paragraph** on page 10: Overview of the six most significant agroecological schools).

The results of these agroecological solutions have proven track records on improving harvests for farmers while safeguarding the environment (e.g. SRI in Cambodia or Vietnam; IPM in South-East Asia; organic vegetables in Thailand).

Box 1. Agroecology principles

Miguel Altieri (2005) defined five principles of agroecology. They mainly apply to farming systems and agro-ecosystems.

Agroecology principles (Altieri and Toledo, 2005)²:

- 1. Enhanced recycling of biomass**, optimising nutrient availability and balancing nutrient flows);
- 2. Securing favourable soil conditions for plant growth** particularly by managing organic matter and enhancing soil biotic activity);
- 3. Minimizing losses** due to flows of solar radiation, air and water by way of microclimate management, water harvesting and soil management through increased soil cover;
- 4. Species and genetic diversification** of the agro-ecosystem in time and space;
- 5. Enhance beneficial biological interactions and synergisms** among agrobiodiversity components thus resulting in the **promotion of key ecological processes and services**.

These additional principles were also suggested by GRET:

BOX CONTINUES ON THE NEXT PAGE →

² Altieri, M. A., & Toledo, V. M. (2005). Natural resource management among small-scale farmers in semi-arid lands: Building on traditional knowledge and agroecology. *Annals of Arid zone*, 44(3/4), 365.



Some additional pathways (Stassart et al. 2012)³:

- 1. Valorise agro-biodiversity as an entry point for the (re)conception of agriculture and food systems** guaranteeing autonomy of farmers and food sovereignty;
- 2. Valorise knowledge diversity** (local/traditional know-how and practices, layman knowledge and expert knowledge) in the definition of research problems, the definition of people concerned, and in finding solutions;
- 3. Work on agro-ecosystems with a perspective of fostering agroecological transition** in the long term, giving importance to properties of adaptability and resilience;
- 4. Promote participatory research driven by the needs of society and practitioners,** while at the same time guaranteeing scientific rigor.

The term “ecological intensification” is often used in the region when speaking about agroecology. In this case, the intensification is on ecological processes.

Agroecology is integrated into the way of life of small producers as they conserve the ecosystems that underpin their own survival. Farmers’ representatives emphasized their spiritual links with nature (“mother nature”), explaining that they were the best protectors of nature, biodiversity, the soil and its genetic resources. Agroecology was also defined by social movements as a way of life and the language of nature that we learn as nature’s children, and agroecology can contribute to food sovereignty which is the right of people to healthy and culturally-appropriate food, produced through sustainable methods and their right to define their own food and agriculture systems.

Feasibility study on agroecology in the Mekong Region - Background

A feasibility study was commissioned by AFD (French Agency for Development) to better understand regional and national agroecology dynamics and initiatives, their strengths and weaknesses, as well as the main barriers and enablers for their large-scale dissemination.^{4,5} The geographic focus of the study conducted by GRET (French NGO of international development) was the Great Mekong Sub-Region (GMS): Cambodia, Laos, Myanmar, Thailand, Vietnam and Yunnan/China. A review of the literature was combined with country-based consultation workshops (Cambodia, Laos, Myanmar, Vietnam) and expert surveys (Thailand, Yunnan-China). Altogether, 105 people were involved in the consultation process (both consultation workshops and expert

³ STASSART Pierre M., BARET Philippe V., GRÉGOIRE Jean-Claude, HANCE Thierry, MORMONT Marc, REHEUL Dirk, STILMANT Didier, VANLOQUEREN Gaëtan, VISSER Marjolein : L’agroécologie : trajectoire et potentiel. Pour une transition vers des systèmes alimentaires durables, In : VAN DAM Denise, STREITH Michel, NIZET Jean, STASSART Pierre M. (2012) : Agroécologie. Entre pratiques et sciences sociales. Educagri éditions, Dijon, France

⁴ *Towards an agroecological transition in Southeast Asia: Cultivating diversity and developing synergies* (http://www.gret.org/wp-content/uploads/AE-Book_GRET_VFF_web.pdf)

⁵ Actors and networks of agroecology in the Greater Mekong Subregion (<http://bibliothèque.afd.fr/actors-and-networks-of-agroecology-in-the-greater-mekong-subregion/>)



consultations) and 118 institutions with different status (i.e. governmental, non-governmental, civil society, private companies) were identified as being involved in agroecology in the region.

The study addressed the six most significant agroecological schools found in the region, namely: organic agriculture, Integrated Farming/VAC⁶, Integrated Pest Management (IPM), System of Rice Intensification (SRI), Conservation Agriculture (CA) and Agroforestry (Figure 1). A practical way of addressing the scope of agroecology was to identify key principles that guided and unified the stakeholders involved.

Agroecology represents a break with/challenge to the way agriculture has been seen and analysed by mainstream science for over a century. There has been a two-phased agrarian transition in South-East Asia:

- » Input-driven intensification of staple food crops under National Intensification Policies and international agribusiness strategy since the 1960s;
- » Commercial cash crop-driven “diversification” (because rice always remains even if on a reduced area) in maize, cassava, banana and other fruits, cotton and oil palm.

As a result, problems such as deforestation and soil degradation have increased and farmers have become more and more dependent on chemical inputs and fossil energy with major negative impacts on economic and social aspects of the farming system.

Overview of the six most significant agroecological schools/practices

Htett Kyu and Pierre Ferrand from GRET illustrated results of the study: well-known sets of practices such as IPM, SRI, CA and agroforestry have expanded and gained visibility thanks to the top-down support of key international institutions (FAO, Cornell University, CIRAD and ICRAF). These international institutions partner with government agencies to implement their activities in the different countries and have organized regional networks with the support of international donors. International and local NGOs joined the movements later on to support extension activities with farming communities.

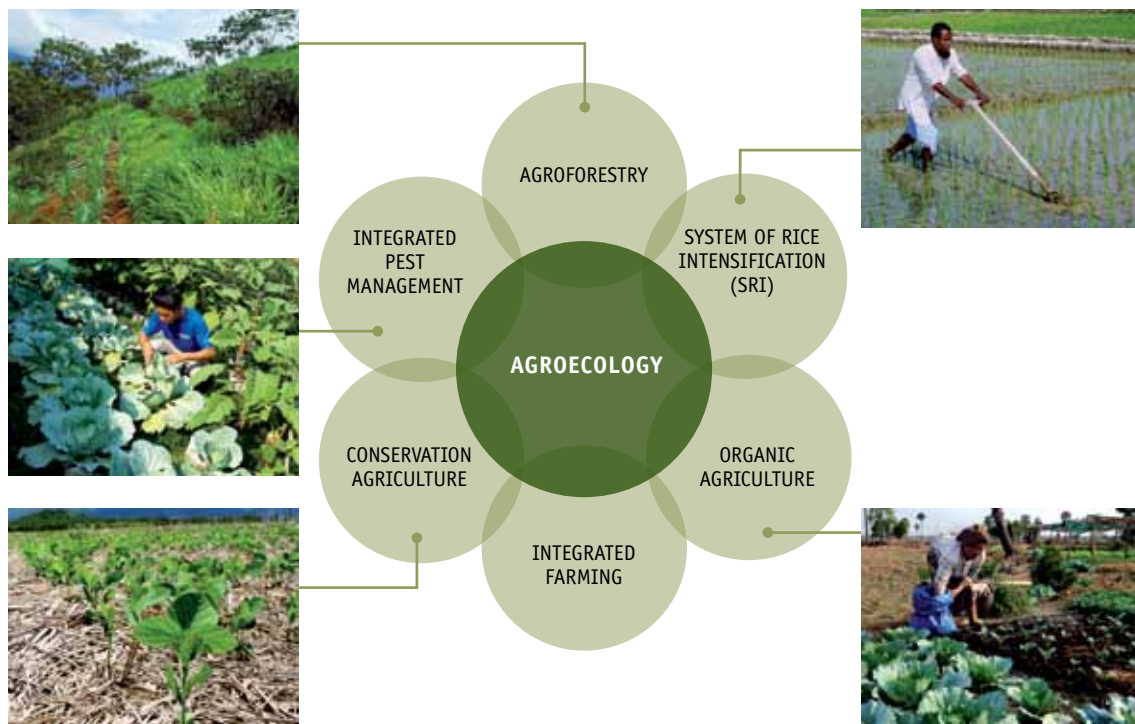
Some project teams also became national NGOs when their project ended in order to maintain their momentum beyond the project period.

VAC systems in Vietnam (Vuon, Ao, Chuong which means garden, pond, livestock pen) and Integrated Farming (Thailand) are two other examples of national level initiatives/policies introduced by governments, which translated into large movements involving a multitude of smallholders. Lastly, the organic movement appeared as a bottom-up process with farmers and local activists organizing themselves and linking up with other groups to support their activities and to gain recognition. They ultimately have federated as members of national associations and of the International Foundation of Organic Agriculture Movements (IFOAM), which provides them with technical support and a certification service.

⁶ VAC in Viet Nameese is vuon, ao, chuong which means garden/pond/livestock pen, source: <http://www.fao.org/docrep/005/y1187e/y1187e10.htm>



Figure 1. **The six most significant agroecological schools or sets of practices found in the Mekong region**



Source: Presentation prepared for the regional symposium in Asia and the Pacific by Pierre Ferrand and Dr Htet Kyu, GRET

Organic Agriculture

In Southeast Asia, organic production is dominated by rice, vegetables, coffee, tea and fruit trees. Organic agriculture emerged only recently with the notable exception of Thailand. Volumes and areas of production are still marginal in all countries. Organic certification and regulations have played a key role in the expansion of the organic sector with new initiatives emerging, such as Participatory Guarantee Systems. Organic networks face the big challenge of differentiating themselves from initiatives led by international agrochemical companies. Organic certification schemes for coffee in the uplands of Thailand and cacao in the lowlands, for example, are helping to turn farmers' lives back to traditional and more sustainable ways of farming.

Integrated Pest Management

IPM spread widely throughout all South-East Asian countries over the last twenty five years through Farmer Field Schools (FFS), with the strong involvement of the Ministries of Agriculture and Education, as well as support from FAO. National IPM networks, initially supported by FAO and managed by government extension systems, have been gradually transformed into local organizations to sustain their activities. IPM mainly addresses rice and vegetable crops. IPM has no certification scheme, and therefore no additional certification costs, but does not generate additional incomes through higher farm-gate prices.



VAC and integrated farming

Integrated farming approaches have been promoted as alternatives to Green Revolution agriculture since the 1990s for self-sufficient farming by central governments. The New Theory farming system (Thailand) and the VAC system (Vietnam) consist of highly bio-intensive methods of small-scale farming into which food gardening, fish rearing and animal husbandry are integrated. More recently, other initiatives of the same kind (integrated farming, multipurpose farms) have developed in other Mekong countries on more local scales, with the support from local and international NGOs.

System of Rice Intensification

. 85% of Cambodians are working on small farms, with farming areas of 1-2 ha/family. The System of Rice Intensification (SRI) has been demonstrated and promoted to farmers together with uses of botanical inputs (Figure 2). SRI has clearly demonstrated its benefits: better yields while contributing to the protection of the environment (through reduced uses of chemical inputs and water for rice production). SRI expanded rapidly in Cambodia, India, Laos, Myanmar and Vietnam starting in the early 2000s. SRI dissemination requires real “agroecological potential” (size of the paddies, water control, manual practices relying on family labour force, etc.), strong support from government agencies on national and local levels, as well as the Farmers’ Field School (FFS) extension approach. It has good potential to reduce production costs in terms of such inputs as fertilizers and seeds, but faces important constraints related to high labour force requirements and the quality of the irrigation-drainage systems. GRET mentioned that priority was given by the Ministries of Agriculture to supporting poor smallholders in applying ecological knowledge-intensive SRI on their small paddies.

Figure 2. **Differences between traditional rice production and System of Rice Intensification (SRI)**

TRADITIONAL (CONVENTIONAL)	SRI
<ul style="list-style-type: none"> • Rice field is continuously flooded with high level of water during the vegetative stage • Seedling is raised with too much water, and the seedling density is high • Transplanting too many seedlings per clump, mixture of weak and thick seedling • Seedling age is too old, generally more than one month • Seedling is uprooted with damage to root and stem, and is kept for one to two days before transplanting • Seedlings are transplanted with close spacing and no equal spacing 	<ul style="list-style-type: none"> • Only minimal water, preferably keeping the soil only moist and dry/wet condition • Seedling is raised in bed like vegetable bed, and the seed density is very low • Young seedling, preferably less than 15 day • Only 1 to 2, but preferably one seedling per clump, only vigorous seedling • Young seedling is uprooted and transplanted with care, transplanted immediately after uprooting • Wide spacing and square pattern or in line transplanting

Source: Presentation prepared for the regional symposium in Asia and the Pacific by Sophal Chhong, FNN



Conservation Agriculture

Conservation Agriculture (CA) principles are minimal soil disturbance, crop associations and rotations, and adequate organic soil cover. These farming systems aim at increasing agricultural production and productivity while conserving the natural resources and enhancing biological interactions in agroecosystems. CA implementation results in increased soil moisture, soil biodiversity, decreased soil erosion, reduced losses of nutrients and increased yields. Farmers face a number of constraints in the adoption of DMC systems (Direct seedling Mulch based Cropping system) such as a high level of initial investment and technical problems. Other difficulties are the limited access to the market for legume cover crops, lack of supply chains for direct sowing mechanization and limited access to credit. Given the rapid soil degradation caused by increased chemical inputs, ecological intensification and other means of finding alternatives to herbicides for existing agricultural practices are needed, through: building healthy soils, promoting biodiversity, adopting cover/relay crops; and integrating biological and mechanical facilities for Conservation Agriculture.

Agroforestry

Agroforestry is a system that integrates trees and shrubs with crops and/or livestock to create environmental, economic, and social benefits. Agroforestry systems have long been developed in South-East Asia, especially by ethnic minorities, before the emergence of export-led monocropping (e.g. fruit trees in home gardens). 'Modern agro-forestry' has been promoted in reaction to deforestation and resource depletion to protect natural resources while increasing agricultural productivity and diversifying sources of income. More recently, attention has been given to the potential of complex agroforestry systems to reduce atmospheric concentration of CO₂ and mitigate climate change. ICRAF (World Agroforestry Centre) plays a leading role in the promotion of modern agroforestry in the Mekong region.

The ecological intensification and landscape approach

The Conservation Agriculture Network for South East Asia (CANSEA) is a research project oriented towards support a regional agroecology transition based on ecological intensification in South-East Asia. The overall research objective is the co-design and the co-assessment of sustainable management for smallholder farming systems based on agroecology. The specific objectives are to work with farming communities to restore degraded soil and to diversify crops and cropping practices. Seasonal and landscape approaches are anticipated to be adopted and ecological intensification will be a major thrust for the project implementation. From questions from meeting participants, the presenters stressed that ecological intensification means that ecological processes are intensified, not productivity.

The Intervention methods of CANSEA are:

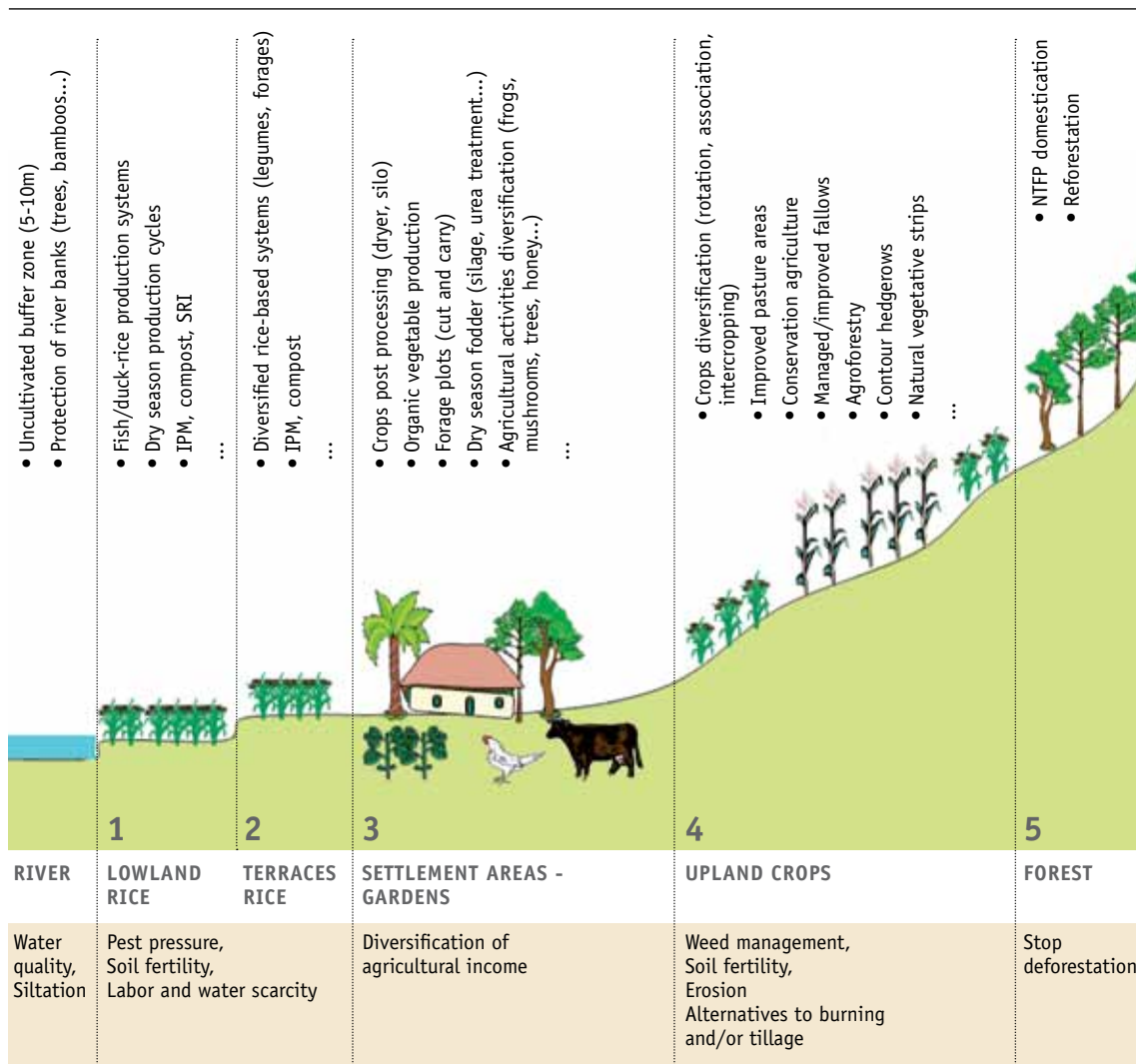
- » Diagnosis with systemic and holistic approaches;
- » Multiscale and multidisciplinary approaches;
- » High diversity of knowledge, by linking traditional and formal knowledge;
- » Participatory design of cropping systems based on the goals of biomass production and recycling.



The project involves several countries and is coordinated on a regional level by CIRAD. The governmental agencies and universities involved in CANSEA are:

- » Cambodia: Ministry of Agriculture, Forestry and Fisheries (MAFF),
- » China: Yunnan Academy of Agricultural Sciences (YAAS),
- » Indonesia: Indonesian Agency for Agriculture Research & Devlpt (IAARD),
- » Lao PDR: Department of Agricultural Land management (DALaM),
- » Thailand: Kasetsart University;
- » Vietnam: Northern Mountainous Agriculture and Forestry Science Institute (NOMAFSI) and Soils and Fertilizers Research Institute (SFRI) and
- » Australia: University of Queensland.

Figure 3. **CANSEA: Engaging village communities in landscape level management of agricultural innovations**



Source: Presentation prepared for the regional symposium in Asia and the Pacific by Frank Enjalric and Etienne Hainzelin, CIRAD



Other examples of agroecological practices and initiatives throughout Asia

Ecological intensification in Cambodia: using an inclusive approach for poverty reduction

Rada Kong from CASC (Conservation Agriculture Service Center, Ministry of Agriculture, Forestry and Fisheries, Cambodia) explained how economic growth and poverty reduction were reliant on sustainable management of natural resources, which are currently threatened by a range of factors including extreme flooding and drought, depleting soil fertility, in particular in the uplands. Other threats to Cambodian natural resources are undiversified production with mainly one wet season rice in the lowlands and two dominant non-rice crops in the uplands (maize and cassava), as well as limited fodder sources in the lowlands. In addition, agriculture is facing the challenges of rising demands for agricultural products, increasing pressure to simplify crop production and agricultural landscapes in the uplands, increasing vulnerability to climate change and promotion of mono-cropping and agro-chemical uses. Finding ways to address these challenges is crucial in Cambodia, where most agriculture is rain-fed, and climate change has a potentially large influence on productivity and rural equity.

The agrarian context in the rain-fed lowlands is:

- » High land saturation and high poverty rate;
- » Extensive rice-based system due to scarcity of the labour force;
- » Low levels of diversification, low soil fertility and high vulnerability to shocks and climate change;
- » Increasing contractual services for land preparation and harvesting;
- » Constant state of undernourishment of cattle and buffaloes.

The agrarian context in the rain-fed uplands is:

- » Political and territorial reintegration strategy of the Khmer Rouge leading to allocation of forest lands;
- » Mass migrations and large-scale forest conversions for small-scale farming;
- » Rapid soil degradation due to tillage-based intensive mono-cropping;
- » Land concentration: wealthy farmers shift to perennial plants (fruit trees).

It is important to maintain soil biodiversity and soil functions, which are essential for improving both the productivity and stability of food production, while preserving the quality and quantity of ecosystem services in a sustainable way. The main goal is to restore and build up healthy soils using a wide diversity of plants over time and space, optimizing nutrient availability, retaining water in the fields, enhancing soil functional biodiversity, and enhancing beneficial biological interactions.

A diversity of plants, managed under direct seeding mulch-based cropping (DMC) or Conservation Agriculture systems, are the engines that drive soil-crop interactions and enhance the regulation and provisioning of ecosystem services. These systems aggregate complex biological structures that are gradually interconnected, enhancing biological interactions and synergies.



These systems preserve and produce seeds for about 30 species of cover/relay crops and fodder plus a large number of staple and cash crop species and varieties. An iterative and integrative process with a multi-scale and multi-stakeholder participatory approach (DATE: Diagnostic, Design, Assessment, Training and Extension) developed by CASC is described to adapt these cropping systems of annual crops in both the lowlands and the uplands (Figure 4). There is a need to move to a holistic and inclusive approach enhancing connections and partnerships between farmers' organizations, service contractors, research and development teams, development practitioners and agro-industries (national and regional). This is an engine of change, and receives support from relevant government agencies, local banking systems and donors. In addition, the ecological intensification of production systems has to address the diversity of agricultural systems (i.e. staple and cash crops, livestock, fruit trees).

Figure 4. **Participatory approach to adapt these cropping systems of annual crops on both lowland and upland**



Source: Presentation prepared for the regional symposium in Asia and the Pacific by Rada Kong, CASC



Small-scale fisheries

There are about 50 million small-scale fisherfolk in Asia, and many of their families have been fishing for generations. Originally, they had been subsistence fisherfolk, not geared toward markets or profit-making. They were thus attentive to the fish resources (i.e. catching only large fish and leaving smaller fish to grow more). However, the introduction of trawling and purse seines for fishing under the “Blue Revolution” has led to the depletion of fish stocks in the region. Efforts to revert the trend back to ecological fishing are needed.

The point was made that fisherfolk are often very well trained on ecological forms of farming; for example, fisherfolk in India maintain many pulses that are planted during the monsoon, thus depending both on fish and secondary sources of food such as pulses. In Asia, water bodies are all interlinked, but more attention is needed for water flows from agricultural land to lakes and rivers. Because of the Green Revolution, people have often forgotten about surface irrigation, relying on groundwater resources which are being depleted. The connections between water bodies are reduced, and the governments are less involved in making sure water bodies are maintained. There is a perception that India lets too much water flow into the seas through its rivers, with the health of local water bodies being lost. Along with this, local fish are lost; even in the Ganges, there has been a total change in the type of fish available. Water health is impacted by farmers’ practices, particularly fertilizers. The whole system, from farm to water bodies, needs to be better integrated.

Pastoralism

About 10-12% of the world’s animal producers are pastoralists. They have depended on the commons: migrating for grazing resources over thousands of kilometres. Historically, the migration systems of pastoralists represent a sustainable way of utilizing resources and supporting pastoralist populations. Pastoralists provide valuable ecosystem services. They maintain high levels of biodiversity, increase soil cover, reduce erosion and ensure nutrient cycling in grazing lands. Their proper management of livestock can improve soil health. Thus, the agroecological knowledge of pastoralists should be respected and promoted. Linking pastoralists with markets in order to sell products such as milk and furs can be a means of helping them to sustain their production systems.

Agroecology in dryland areas

The pressure from farmers in arid regions can lead to soil degradation. In some dryland areas, land has been taken for industrial purposes. Local farmers have techniques to manage drylands in a sustainable manner, by imitating natural systems when operating their farms, by minimizing external inputs into agroecosystems with the production of chicken, vegetables, mushroom, honey bees, etc.

Transition in Timor Leste and permaculture

The experience of a participant from the floor was highlighted, that of agroecology transitions in Timor Leste, where a national curriculum on agroecology has been adopted. The speaker noted that the country had emerged from a long time of struggle. Although the country achieved food self-sufficiency in the 1960s, the Green Revolution and colonial experiences turned culture



in Timor away from a rich polyculture where diverse cropping systems, fruit, vegetable and micronutrient diversity had been fostered.

The Green Revolution actually changed the traditional knowledge of people, since agriculture at this time focused solely on rice, maize and wheat, with extensive external inputs. In 1997, when the crisis hit, the cost of inputs increased twofold, and farmers lost land. After independence, an important question was how to bring back the knowledge of farmers, and respect the fact that every farmer is a scientist. For the last 15 years, they have been cooperating with a number of agencies to do this, working to bring back knowledge and biodiversity to farmers, including seeds, both domestic and wild. Two years ago, this initiative was included as a topic in Timor Leste's curriculum reform, and it was proposed to have permaculture introduced into the national curriculum. It was also agreed that all school gardens should use permaculture.



II) ACCESS TO AND USE OF NATURAL RESOURCES IN THE CONTEXT OF CLIMATE CHANGE

Speakers

Harpinder Sandhu (Flinders University, Australia)

Masroni Abdul Wakid (Nuasantara Farmer's Movement, Indonesia)

M. Islah (The Indonesian Forum for Environment WALHI, Indonesia)

Chaired by **Kris Wyckhuys** (International Centre for Tropical Agriculture (CIAT), Vietnam)

Parallel session on agrobiodiversity and ecosystem services:

Ego Lemos (Timor-Leste)

Moderated by **Clara Nicholls** (SOCLA, Colombia)

Parallel session on agroecology and adaptation to climate change

Jonjon Sarmiento (Pakisama, small farmer, Philippines)

moderated by **Supa Yaimuang** (Sustainable Agriculture Foundation, Thailand)

Parallel session on agroecology and access to natural resources

S. Kannaiyan, (South Asia Coordination Via Campesina, India)

Chandmani Dambabazar (Namac, Mongolia)

moderateur by **Harpinder Shandu** (Flinders University, Australia)

The importance of ecosystem services for climate change

Climate change is emerging as a major development issue in the region. There is evidence of the increasing intensity and frequency of extreme climatic events: droughts and intense rainfall, heat waves and snow avalanches, and severe dust storms and tropical cyclones.

The majority of the estimated 500 million rural people in the Asia-Pacific region are subsistence farmers occupying remote, marginal areas such as mountains, drylands and deserts.

Based on the consensus that conventional agriculture makes farmers more vulnerable, particularly in the context of a changing climate, participants in the regional meeting emphasized the need for a transition towards agroecology.

According to Harpinder Sandhu of Flinders University, giving value to ecosystems services could support the transition to agroecology. In the context of a growing population, by 2050 the current agricultural system would in fact require increasing the use of land, which makes a



strong case for the transformation of the food system based on agroecological principles and ecosystem services.

Integrating ecosystem services (provisioning services, regulating services, cultural services, and supporting services) into agriculture through agroecological techniques will enhance farm productivity, and will empower food producers in facing the decline of availability of natural resources, climate change and market volatility. By using agroecological practices at farm level, farmers can save money and use ecosystem services to increase the value of the farm.

Participants noted that, usually, very little attention is given to below-ground biodiversity, and yet it is critically important.

It was also highlighted that, in developing agroecological systems, it is important to recognize the multitude of ecosystem functions, and to be stewards of ecosystem functions and processes, rather than what was considered by some participants a “false economy” based on payments for ecosystem services.

The point was made by participants that crop production is unnatural, and the role of the agroecologist should be to make it as least disruptive as possible. There is a belief that more biodiversity creates more resilience, and this needs to be applied and tested locally. In doing so, specific criteria are needed for what we want to measure on resilience, so that better advice can be provided to farmers. Others noted the value of heterogeneity and connectivity. One participant stressed the value of functional biodiversity, which provides complementarity so that, if one group suffers, others survive.

Access and rights to natural resources

Ensuring the respect of communities’ rights was considered to be part of agroecology and to represent a key point in order to avoid land use conflicts with local communities. Land and indigenous crops are a source of income and cultural unity for the local communities. The participants highlighted the importance of ensuring, recognizing, respecting and upholding the rights of small-scale food producers and communities, in particular those of women, youths and indigenous peoples, to land, water, seeds, oceans, forests, commons, biodiversity and territory.

The topic of natural resources includes the rights of small-scale food producers over local genetic resources and biodiversity: seeds, livestock breeds, fish species, plant varieties, knowledge, manure and feeds. Supporting and reviving traditional management practices, local rice varieties and other staple food varieties, and neglected/underutilized as well as drought-resistant crops through, for example, peasant seed houses and networks is also considered important. Genetic materials, knowledge and innovations of small-scale food producers should also be protected against negative external influences.

The analysis of the impact of change in the land was also presented as being of crucial importance. The case of large-scale monoculture plantations in peatlands (with canals and intrusion of seawater) was presented. It has created conflicts with local communities cultivating Sago, which is a source of income and cultural unity for the local communities. The cultivation of local crop varieties, particularly those suitable to peatlands, is strategic to coping with climate change.



Supporting local knowledge for climate change

People affected by climate change face longer dry seasons, uncertainty in water availability, severe and/or more frequent storms and seawater incursion, and are more vulnerable to pests and disease. Farmers' groups can help to build networks at national level to share and discuss observations regarding the conditions in the field. Together, they may define an adaptation strategy providing agroecological solutions based on local conditions.

Producers' knowledge should be better documented and supported. For this purpose, a new research and extension paradigm is necessary, including participatory action research, the co-production of oral and written knowledge and cultural practices. All agroecological educational interventions should address the needs of communities inclusively, considering the particular needs of women, indigenous peoples, vulnerable groups, and youth.

Farmer-led research

Farmer-led research was seen as one of the solutions to adapting to longer dry seasons, uncertainty in water availability, and more vulnerability to pests and diseases under climate change. It was stressed that research should also be more community focused, e.g. different communities have different approaches which need to be considered by researchers.

Self-organized farmers' groups were presented, networking at national levels to share observations about the conditions in the field and collect data regularly, to discuss them together and define a strategy of adaptation providing agroecological solutions based on local conditions.

The promotion of systems and practices of social innovation led by farmers in a bottom-up fashion to improve the fundamental role of agroecology in the conservation of biodiversity and dissemination of innovations was highlighted.

It was emphasized that more research on agroecology and climate change is needed, with emphasis on the selection of varieties and species directly at farm level, as well as on social and human sciences applied to agroecology.

Meeting participants noted that agroecology can benefit from interactions between scientists and farmers. Scientists should be asking why the system works on the farms of good innovative farmers. Researchers can support such farmers to understand how it functions and, from this, derive principles. Thus, researchers and farmers should work together in specific locations of innovation in agroecology.

Meeting participants noted, however, that, among farmers, there is sometimes a mistrust of scientists, who should work more to understand the concerns of farmers and CSOs. This is an important call for academics to be self-reflective and humble, while farmers should be patient with scientists. The debates and differences, as reflected in this meeting, reflect a diversity which it is important to keep mutually improving.

Example from Korea: collection and conservation of indigenous seeds

The Korean Indigenous Seeds Preservation Movement, connected to the Korean Women Peasants Association (KWPA), has a programme called 'collection and conservation of indigenous seeds'.



Initially, the aim was for each farm household to preserve at least one seed variety. Now, each farm household tries to preserve more than four varieties. The programme documents the preservation of indigenous seeds. In addition, training is given to female peasants to become breeders of indigenous seeds. Success stories, knowledge and experiences of older generations are collected and promoted.

Traditional food processing, cooking and diets are being promoted, innovated and used in educational activities by the programme. Farms are used to exhibit and distribute indigenous seeds for multiple purposes. Indigenous Seeds Guardians (ISG) are organized, who are mostly consumers.

A centre for agroecological practices and an agroecology school have been created in order to:

1. learn and revitalize traditional farming methods of older generations,
2. educate and build community learning through collaborative farming,
3. share, develop and spread knowledge from farmers to farmers,
4. provide advice on agroecological farming in each municipality and
5. promote biodiversity-oriented farming through crop rotation, catch cropping and direct sowing.

Promoting local experts

It was emphasized that agroecology provides the tools for resilience to extreme climatic events which are foreseen to increase in intensity and number due to climate change. During droughts, soil humidity is better retained on diverse farms. The need for a tool to assess resiliency of farms using a variety of indicators was raised.

For true resilience to be achieved, it was mentioned that food sovereignty, but also energy sovereignty and technological sovereignty were needed in concert with agroecology.

The role of women as the principle guardians of seed diversity, through participatory plant breeding, and their traditional knowledge in selecting varieties resistant to drought was emphasized.

Experiences of Indonesian farmers' organizations on adaptation to climate change

Indramayu is a rice production centre in Indonesia, located in the North Coast of East Java. Important problems of rice farmers in Indramayu are the uncertainty of water availability, pest and disease outbreaks and slow or stunted plant growth due to the impact of climate change. Ikatan Petani Pengendali Hama Terpadu Indonesia (IPPHTI) Indramayu is a local organization of farmer's field school alumni on an integrated pest management programme.

In relation to the impact of climate change, IPPHTI Indramayu aims to raise farmers' awareness and understanding on the impact of climate change, as well as to develop strategies for adaptation to climate change. The organization facilitates farmers to conduct field observations on rainfall and water availability (Figure 5). The observations were carried out by 100 farmers in 24 sub-districts of Indramayu, and the data are collected and evaluated monthly as a source of information for learning processes. The farmer-based climate and water information contributes to better-informed decision-making on agriculture management and provides options for implementing agroecological approaches as an adaptation to climate change.



Figure 5. **Field observations by IPPHTI**



STRATEGY: WHAT WE LEARNED?

WHAT ARE THE INDICATORS OF:

- Rain will start to fall?
- Rainy season will soon arrive?

HOW MUCH RAINFALL PER MONTH? PER YEAR? (ml)

**WHEN DO FLOODS OCCURED AND HOW MANY PER YEAR?
WHEN DOES DROUGHT HAPPENED?**

**WHAT KIND OF PEST AND DISEASE THAT USUALLY OCCURS
IN RAINY SEASON AND DRY SEASON?**

ETC

Source: Presentation prepared for the regional symposium in Asia and the Pacific by Masroni Abdul Wakid, Nuasantara Farmer's Movement



III) AGROECOLOGY LEARNING PROCESSES, KNOWLEDGE SHARING AND BUILDING AGROECOLOGICAL MOVEMENTS

Speakers

David Ardhan (Bogor Agricultural University and Nastari Foundation, Indonesia)

Dwi Astuti (BinaDesa/Asia Development of Human Resources in Rural Areas (DHRRA), Indonesia)

Chukki Nanjundaswamy (La Via Campesina, India)

Florent Tivet (IPECRA project, CIRAD/Royal University of Agriculture, Cambodia)

Santosh Francis (Mouvement International de la Jeunesse Agricole et Rurale Catholique (MIJARC India)

Jawarhani Arumugan (Pesticide Action Network Asia Pacific (PANAC Malaysia)

Esther Penunia (Asian Farmers' Association (AFA Philippines)

Chaired by **Laurent Levard** (GRET, France)

Agroecology is both knowledge-intensive and based on interdisciplinary approaches, which represents an innovation but also a challenge.

Meeting participants emphasized the utility of multi-stakeholders' platforms for the collection and exchange of agroecological experiences and innovations, environmental monitoring, as well as funding at the level of the Asia and the Pacific region and national levels. They insisted on the importance of integrating agroecology in the curricula of both formal and non-formal primary and higher education institutions (as dedicated certificates and degrees on agroecology), in vocational training centres for producers, including Farmers' Field Schools, school farms, farmers' training and school gardens.

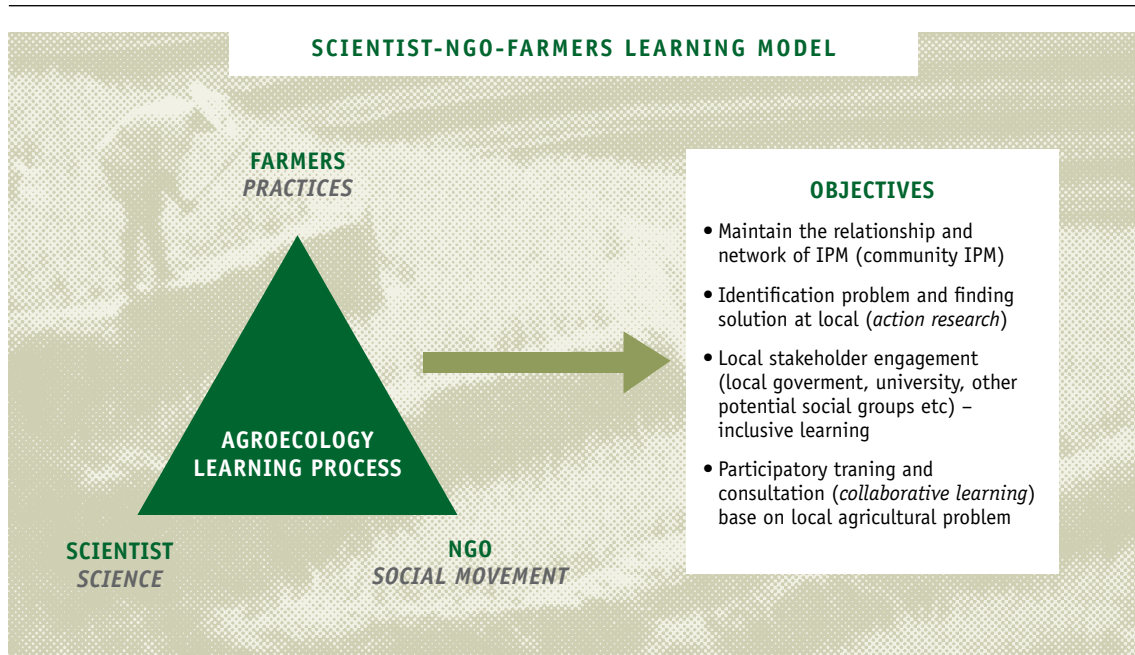
Innovation with FFS and platforms linking scientists – NGO and farmers

The example of Indonesia and farmer education on Integrated Pest Management in the framework of the Farmer Field School Programme (IPM-FFS) was given: more than a million farmers were trained through the IPM-FFS programme. It resulted in thousands of farmers, leaders and local facilitators gaining knowledge and passion on agroecological approaches in practice. In 2007, the Nastari Foundation and a group of progressive scientists from Bogor Agricultural University started to collaborate with IPM-FFS alumni at district level. By visiting 24 farmers' communities on Java Island, a learning process on agroecology was developed. The main objective of the Bogor Agricultural University and Nastari Foundation is community-integrated pest management, conducting action-based research and inclusive learning (Figure 6).

They provide a platform for discussion and consultation on local agricultural issues within the community and with the government. They promote participatory research where farmers and scientists collaborate, aiming to strengthen local communities, spread agroecology to more stakeholders and offer inclusive learning on community agriculture. The model resulted in



Figure 6. **Scientist-NGO-Farmers learning model of Nastari Foundation and Bogor Agricultural University**



Source: Presentation prepared for the regional symposium in Asia and the Pacific by David Ardhan, Bogor Agricultural University and Nastari Foundation

various innovations at the local level such as farmer training centres of agroecology, a model of participatory technology development, seed breeding, agroforestry and conservation agriculture, integrated farm management and an initiative on collective marketing. One of the main challenges is ensuring the sustainability of action research learning sites and motivating the participation of youth who have been exposed to the dogma of “productivity-based agriculture”.

The importance of the integration of youth in agroecology

Youth is losing hope in agriculture due to a lack of government/policy support, resource grabbing, crop failure due to climate change, lack of education and lack of market support. As the future of agriculture, youth should be supported by government and civil society organizations to engage in sustainable agriculture practices and processes.

Agroecology schools of La Via Campesina: agroecology education and knowledge creation

Via Campesina is a global farmers’ movement spread over 70 countries around the world. The member organizations run 40 agroecology schools offering diploma, graduate and postgraduate courses. In India, it is Amrita Bhoomi based in Karnataka, run by state level farmers’ organization Karnataka Rajya Raitha Sangha (KRRS). The objective is not just to train, but for farmers



to conduct research as well, save seeds, and to have their own seed banks for vegetables, pulses, rice, fruits, etc. The method used is Zero Budget Natural Farming (ZBNF) which is an agroecological practice started in 2004 by farmer scientist Subhash Palekar. The method uses indigenous practices and one cow of a local breed for nourishing soils, bringing about a shift in the approach from the Green Revolution mindset of feeding the soil with chemicals.

An international training course was conducted at Amrita Bhoomi, which received hundreds of international and national participants. Nepal and Sri Lanka are actively conducting ZBNF training programmes. More training programmes on ZBNF will be conducted in Bangladesh and North India soon. The major challenge is that there is no government supporting it, but the movement is still growing.

The important agroecology work ongoing in government and civil society and Farmer Field Schools should be recognized and valued, and that foundation built on to further develop, strengthen and upscale agroecology. The content of the above should be derived from the knowledge generated by small-scale food producers themselves. The results of FFS were highlighted and it was suggested that FFS increase their attention to livestock, fish, and their associated pastoral ecosystems in their curriculum. The Campesino a Campesino movement was also recognized as a movement that is a more horizontal alternative to traditional, centralized and top-down extension services.

The upscaling of agroecology would also benefit from cross-cutting and intercultural education strategies, as well as national training centres and dedicated certificates and degrees in agroecology.

Designing digital learning contents to teach agroecology in Cambodia

Innovative Pedagogical Resources in Conservation Agriculture for South-East Asia (IPERCA) devised to support the transition to agroecology was presented. This two-year project in Cambodia involves many universities in its development. IPERCA gives support to studies and it uses innovative pedagogical tools such as e-learning tools, video, case studies, research results, and field/lab tools. The language of instruction is English. There are no credits in the course. Through the studies, a link is established between the biophysical and social components of agroecology. The major challenge includes a lack of experienced teachers to teach agroecology given the fact that there are many approaches, principles, practices, and various scientific, social and technical complexities involved. There is also a need for extensive, accessible training on agroecology, as well as for the enhancement of interdisciplinary activities through research and teaching. An important aspect of the agroecology learning processes is how to build capacity to support the agroecological transition.

Knowledge on market and price information with the Asian Farmers' Association

The Asian Farmers' Association has 12 million members, and in part focuses on disparities in market prices, in that the market dictates prices, and farmers do not know what the asking price



should be. In one case study, the Asian Farmers' Association worked with the single biggest producer of organic rice, producing a healthy red rice. From this, they have learned lessons on how to go to the market together and cut the costs of inputs by growing organically, and adding diversity through raising chickens along with rice.

Example of agroecology learning through open source technology for marginalized people

Integrated People's Agroecology Multiversity (IPAM) is a grassroots-oriented and people-based way of learning through open-source technology. IPAM supports education and knowledge creation through teaching agroecology which encompasses food sovereignty, gender equality and community empowerment. It is based on farmer-to-farmer learning. It targets marginalized people who have no access to university education. Participatory action-based research, community-based data collection, documentation, publication and dissemination, and critical analysis of issues through dialogue all form an integral part of IPAM's activities.

The focus of the activities is on women, youth, indigenous people and refugees. Communities are placed at the centre and farmers are seen as scientists as well. Language limitations exist since it uses Google Translate, but they are improving the translations step by step. This alternative teaching and learning process has been launched in 2016, and is supported by PANAP.



IV) MAKING MARKETS WORK FOR AGROECOLOGY

Speakers

Daw Than Than Sein (Myanmar Fruit, Flower, Vegetable Producer and Exporter, Myanmar)

Rony Joseph (International Federation of Rural Adult Catholic Movements) (FIMARC))

Geumsoon Yoon (Korean Women Peasant Organisation (KWPO)/La Via Campensia, South-Korea)

Tu Thi Tuyet Nhung (Asian Development Bank (ADB)/International Foundation for Organic Agriculture (IFOAM), Vietnam)

Sokharith Touch (GRET/ Siem Reap, Cambodia)

Thirach Rungruangkanokkul (Agricultural and Food Marketing Association for Asia and the Pacific (AFMA), Thailand)

Chaired by **Dao The Anh** (Centre for Agrarian System Research and Development (CASRAD)/Field Crop Research Institute (FCRI), Vietnam)

Raising consumer's awareness

Participants mentioned that conventional growers are now using a large quantity of pesticides. Since bananas and mangos fetch a higher price at the beginning of the season, growers may use chemicals to facilitate ripening. Consumers need to be more aware of the health implications and the health benefits of organic production. The importance of support from governments for marketing and consumer awareness and education for agroecological principles and values was highlighted.

Empowering farmers by direct marketing

Empowering smallholder farmers was presented as a priority to end hunger and achieve economic, social, and environmental sustainability. Food security and food sovereignty will improve the quality of the lives of smallholder farmers, allowing them to become more independent, and ensure the right to live in dignity.

The example of Thailand was given, empowering through direct marketing. Many challenges smallholders have been facing when entering the value chain have been listed: a lack of capacity for applying good agroecological practice, lack of favourable market access, the negative chemical effects from contaminated neighbouring farms, relatively low and volatile crop prices, limited market and negotiating power and time constraints due to perishable produce, high individual logistic management costs, management and marketing costs and limited manpower limit value-creation activities.

Agroecology practised through direct marketing by smallholder indigenous farmers in Thailand makes consumers aware of the value of the products and the costs of a sustainable value



chain. There is an increasing demand for good agroecological products with a brand promise, communicating with consumers and adding economic and social aspects to the sustainable pillars.

Farmer-owned enterprises, linking small-scale producers to markets

In farmer-owned enterprises, small-scale farmers, fisherfolk and indigenous peoples organize the provision of healthy food while still receiving a fair price for their products. Farmers organize their work collectively to support the agroecological transition and achieve higher prices, lower costs, restore the soil, increase productivity through integrated farming and diversify products, thus adding value.

Additional sales of products need to take place by expanding market to the cities. Therefore, farmers should be trained to facilitate business development of local markets, using farmers as local collectors with complementary business activities to collect and transport.

Small-scale farmer engagement in private enterprises needs to operate in a policy environment that promotes and protects the interest of small agricultural producers. It is intended to ensure that the sharing of risks and benefits between farmers and investors is equitable and inclusive and does not further undermine the farmers' livelihood and welfare.

The development of local collectors and building up trust

The initiative of Siem Reap Province in Cambodia was highlighted. The Cambodian Institute for Research and Development (CIRD), GRET and Siem Reap Provincial Department of Agriculture have been working on this project since 2010. It is focused on the development of sustainable agriculture for smallholder farmers based on low external inputs and diversification of production to increase income and improve the livelihood of smallholder farmers. The project targets 2 000 farmers in 50 villages located in the districts of Prasat Bakong and Sotr Nikum in Siem Reap province next to the Tonle Sap.

The approach relies on supporting the setting-up of farmers' organizations and the facilitating business development of local collectors. The support is focused on the existing businesses of local collectors living in the same community as the producers without providing any direct financial support to them. Within this market system, collectors play a key role linking the local, rural production area to urban markets, using two distribution systems based on short food supply chains such as restaurants and canteens, but also wider local markets managed by wholesalers. Generally, local vegetables are seen as safe products by the market in Cambodia. However, markets do not pay premium prices for safe products.

Collective action allows the farming community to have a better answer to market demand for regular, large and diversified production. Pre- and post-harvest training has been provided to farmer groups and local collectors. In addition, eight market notice boards have been installed at the collector's farm gate to inform all farmers about which vegetables they are buying and at what price. Local collectors are farmers with complementary business activities to collect and transport. On the one hand, collectors link rural and urban areas as they contribute to an increasing flow of agricultural products to urban markets through daily vegetable supply, and on



the other hand they provide flows of information to producers on market mechanisms, including price fluctuations and consumer preferences. Local collectors build up trust with farmers as they perform four functions: (i) providing advice on agroecological practices, (ii) collecting and transporting products to markets, (iii) sharing market information as regular traders and (iv) social contact by living in the same community.

The project has been developing initiatives with farmer groups and collectors to supply the mainstream markets of Siem Reap with a strategy of targeting domestic markets. Getting involved in this distribution pattern, local collectors are able to sell their products on a large scale. Provincial and district markets represent 97% of purchases. Limits remain on the ability of smallholder farmers to adapt their production to the broader needs of the local markets. Among their customers, local collectors count eight wholesalers, 23 retailers, three restaurants and one school canteen. The market demand for local products is very high, so collectors do not have any problems finding customers.

The role of the collector who links urban demand with rural supply is crucial. The flow of information between the market and the producers helps them to negotiate good prices with the collectors, and helps the collector to explain the urban demand in terms of price and quality.

Experts from local communities

The social movement of FIMARC (International Federation of Rural Adult Catholic Movements) promotes local experts. They work to identify the best agroecological practitioners from local communities and focus on farm planning as a tool to strengthen agroecology. Elderly expert farmers can help other farmers to plan their farm, through historical analysis, profiling and a SWOT (strengths, weaknesses, opportunities and threats) analysis, from which a plan of action is then developed.

Box 2: The CLUMP project of organic Arabica coffee

Market access in order to make good agroecological practices more visible and create a higher demand will allow smallholder farmers to create sustainable produce and reap a price premium through brand awareness. The Communal Life of Love and Unity of the Mountain People (CLUMP) Foundation presented their work on direct marketing with 1 144 farmers growing Arabica coffee in Thailand. Besides getting a higher price for their organic coffee cherries, farmers also receive non-financial immediate benefits, such as preserving the existing rainforest, strengthening the social capital within the community and knowledge development. In the long term, this leads to a regeneration of nature's resources and increases the prosperity of farmers while they can also modify and apply their traditional lifestyle. The CLUMP project stressed that sharing of information takes time. Their farmers are learning every day. The global market economy needs to start listening and learning, and we should continue sharing our learnings.



Figure 7. **CLUMP direct marketing of organic coffee from small holders**



Source: Presentation prepared for the regional symposium in Asia and the Pacific by Thirach Rungruangkanokkul, AFMA Asia

Identifying agroecological products: organic labelling

An organic certification is a good way to identify an agroecological product, raise consumer awareness and sell the product at a fair cost. Organic quality management and quality assurance can include producers and stakeholders along the value chain through databases, signs and labels. An important factor for motivating production is linking producer groups to retailers. Collective practices at local level are the most effective way to identify the best practices to be promoted, also at local level.

Organic agriculture also requires higher costs for certification to market products. Participative and low-cost certification schemes such as the Participatory Guarantee System (PGS) were mentioned as a recommended solution to support the agroecological product market access.

Regarding organic farming, it was remarked that organic agriculture was not systematically the same as agroecology. Organic production can sometimes be merely input substitution. The position was to be careful of not singularly producing for one market, even if it is organic, but ensuring that agroecology – in all its broad aspects - is supported by market structures.

Food sovereignty

The debate highlighted food sovereignty which is strongly supported by civil society. Food sovereignty puts the aspirations, needs and livelihoods of those who produce, distribute and consume food at the heart of the food system and of policies, instead of the demands of markets and corporations. Food sovereignty prioritizes local food production and consumption and ensures the right to protect local producers from imports.



Example of the Participatory Guarantee System (PGS) in Vietnam, an approach for organic quality management

The PGS is a quality assurance system already established in 40 countries around the world. It involves direct participation of farmers, consumers and other stakeholders in the verification process. The participation is not only encouraged but it may be required by PGS, in that the involvement of farmers is realistic and achievable given that the PGS is likely to serve small farms and local markets. Costs of certification in PGS are low as mostly take the form of voluntary time involvement rather than financial expenses.

PGS Vietnam not only guarantees the credibility of the organic produce, but it also directly links farmers to consumers and alternative marketing approaches. Currently, the interest of consumers in PGS organic products is growing. From 7.6 ha under PGS production in 2009 with 11 farmer groups in the North of Vietnam, now there are 27 ha under PGS production, mostly vegetables, with 370 farmers organized into 41 groups and 10 enterprises collaborating along the value chain. While the quantities are still small, PGS has a profound impact on the people who are involved, by providing a stable and higher income for smallholder farmers.

In summary, PGS:

- » provides farmers with a credible, affordable certification that is compatible with their levels of literacy and time constraints;
- » provides a marketing tool that can be trusted by consumers because it has clearly defined standards with documented and transparent compliance procedures that are culturally appropriate and backed up by enforceable penalties for non-compliance;
- » provides consumers with a certification and a brand that can be trusted;
- » provides wider, economic, institutional and socio cultural benefits including better health and reduced health costs – for consumers and producers – improved community relationships, capacity building and empowerment for farmers and retailers, market integration, improved local governance;
- » delivers environmental benefits: less waste, improved local biodiversity, reduced pollution, environmental sustainability.

The importance of private sector involvement in agroecology: Myanmar

Since 2006, there has been evidence of private sector involvement in agroecology in Myanmar: The Myanmar Fruit, Flower & Vegetable Producer & Exporter Association (MFFVPEA) is affiliated with the Union of Myanmar Federation of Chamber of Commerce and Industry (UMFCCI), which includes all trade associations of Myanmar. The commodity association draws members from the entire value chain of fruits and vegetables: farmers (producers), crop buyers (traders), wholesalers, distributors, and exporters, as well as the suppliers of support services (Cluster Approach). MFFVPEA promotes standards and quality development of fresh, agroecologically-grown produce through capacity-building programmes of organic and Good Agricultural Practices (GAP) for members through the organization of seminars, symposiums, workshops and trainings.



MFFVPEA conducts Centre Based Trainings, Community Based Trainings, Organic Farming Trainings, GAP Trainings and Trainer of Trainers Trainings. They organize exhibitions, fairs, markets and other activities related to the dissemination of information, including international and domestic business-matching. A farmers' market was created to shorten the supply chain and provide easy access to the market. MFFVPEA enables the production of flowers and vegetables for market export, facilitating the links between various stakeholders along the value chain. Farmers can benefit from training on trade, post-harvest technologies, biological properties and biocontrol agents or certification to access to market.

Access to markets for women in Korea

The Korean Women Peasants Association (KWPA) aims at promoting women's social position and autonomy, communication and collaboration between smallholder producers' and consumers' communities. Participatory planning, collaborative farming and transparent and collective operation are central aspects in the approach of the association. The objectives of the association are to empower women peasants; revitalize rural communities, and strengthen trust with consumers.

Access to markets for women peasants was achieved, including through the demonstration of the relevance of field research on indigenous seeds to support the agroecological transition. This work has been supported by the Korean Government.

The opportunity of public procurement

One participant talked of the market dynamics in cross-border trade in oils and soybeans, noting that right now most consumers are buying products from long-distance trade. Even in Kerala, coconut oil is exported to Mumbai and then imported back to Kerala. In India, where extensive public procurement is being purchased and distributed to poor residents and for school food, there is a missed opportunity to procure from agroecological farmers.

The protection of Geographical Indication or community trademark were mentioned as a good way to create a market-driven mechanism for agroecological products.



V) AGROECOLOGICAL TRANSITIONS IN ASIA AND THE PACIFIC FOR FOOD AND NUTRITION SECURITY, INITIATIVES AND POLICIES TO SCALE UP AGROECOLOGY

Speakers

Witoon Lianchamroon (Biothai Foundation, Thailand)

Shimpei Murakami (Asian Farmers' Association (AFA), Japan)

Damayanti Buchori and David Ardhian (Bogor Agricultural University/Nastari Foundation, Indonesia)

Undarmaa Davaasambu (Mongolian University of Life Sciences, Mongolia)

Pham Van Hoi (The Centre for Agricultural Research and Ecological Studies (CARES) in Vietnam National University of Agriculture, Vietnam)

Chaired by Shalmali Guttal (Focus on the Global South, Thailand)

Context for an agroecological transition

It was stated that the agroindustrial system developed in the past has increased the yield of crop production; however, it is laden with many economic, social and environmental costs, penalties and externalities, and has not been able to end hunger.

For an agroecological transition in Asia to happen, it was stated that the existing, production-focused paradigm of agricultural development will need to make way for a more holistic, people- and rights-centred approach.

Change is needed in order to put forth a new paradigm of agriculture not solely focused on production but on people's rights and needs, including those of future generations, through ecosystem goods and services.

A common and shared understanding and definition of agroecology among key stakeholders is also needed in order to include agroecology in policies as the market and academia gather many different actors with different views.

Farmers are in transition to move away from Green Revolution approaches, but they are at different stages of the transition. Research should be used to ensure support at different levels of transition and demonstrate concrete and relevant evidence of the environmental, economic and social performance of agroecology. We have now learned a great deal from farmers who are in transition to agroecology. We should rework what we have learned to reach out to conventional farmers, not just to speak to the small group of farmers already practicing agroecology.



Importance and limits of the need for evidence

Agroecology is a trans-disciplinary science and research must be used to demonstrate concrete and relevant evidence of the environmental, economic and social performance of agroecology.

The urgent need to compile and share data with small-scale food producers, policy makers and consumers, in a participatory manner, was highlighted to strengthen public policies to support agroecology. Data should include, for example, percentage of production from agroecology, market-related data, effects of agroecological approaches on climate change resilience, price levels and setting, nomadic (and livestock) migratory routes and fish migration patterns, as well as historical practices of exchange of products and traditions amongst various small-scale food producers, among others.

Tropical areas have centuries of traditions in which smallholder farms and natural ecosystems are part of the landscape that shapes the traditions, life and arts of the society. Thousand year-old knowledge creation processes have helped us to arrive where we are today. However, with the advancement of science, technology and knowledge, there are also changes of lifestyles and the global agenda which are affecting the overall landscape and society.

There is an on-again, off-again form of “ecological amnesia” where we forget knowledge we once had. Understanding the complexity of nature requires a different way of thinking. Dialogue between scientists, farmers, policy-makers and government is needed to create a society which adheres to the universal values of respect for nature and understands the dignity of being human.

The following question was raised: is the absence of evidence the same thing as the evidence of absence? Do we need to have complete evidence, before we know? Science is both a body of knowledge and a process; it needs to be based on morals. Science began as a branch of philosophy and used to be closely intertwined.

Territorial and global approach

Isolated initiatives of farmers cannot be effective to achieve the transition. Agroecology transitions are most efficient at a territorial level and as a result of social movements’ work from the bottom-up.

The example of agroecological village in Bangladesh was given (**Box 3**).

Meeting participants also noted that efficiency goals are often taken as a substitute for agroecology, yet the need is to diversify, rather than simply introduce efficiencies. In an agroecological transition, it is important to pay attention to different levels, from field interactions to social dimensions, to connecting consumers and producers.



Box 3: Agroecological villages in Bangladesh: 10 strategies to transition

The 10 strategies to transition for agroecological villages: of New Agriculture Movement in Bangladesh (Nayakrishi Andolon) were presented as the following:

1. No pesticide use
2. Keep seeds in farmers' hands
3. Preserve healthy soil without using chemical fertilizer
4. Learn from the natural forest to protect biodiversity
5. Produce and manage both cultivated and uncultivated space
6. No use of underground water, harvest rain water instead
7. Accounting the total production including food, fuel, medicine, etc., per area per year
8. Integrate livestock into production ecosystems
9. Integrate aquatic diversity into production ecosystems
10. Integrate non-agricultural rural activities into the overall farm activities

The example of a network in Cambodia, Farmer and Nature Net (FNN), to apply innovation in small-scale farmer households, was also given. FNN supports them in applying ecological innovations for agriculture to improve their livelihoods and achieve sustainable development in Cambodia. The main goals of FNN are to promote the family economy of small-scale farmers and develop equitable and sustainable rural communities through activities such as agricultural extension, saving and credit cooperatives and business rice cooperatives. In addition, FNN has also supported groups of young farmers, poor farmers and rural women to raise awareness regarding the management of natural resources, climate change and advocacy. FNN is, for instance, promoting farmer households in the application of new innovations, such as Systems of Rice Intensification; encouraging farmers to grow organic vegetables and create a home garden on their homeland in order to reduce expenses, increase health and promote ecological chicken raising.

The momentum of agroecology

The regional and international context can be seen, to some extent, as favourable for the promotion of agroecology. There is an increasing awareness regarding negative impacts of conventional farming and increasing demand for healthy agroecological products.

In addition, agroecology is gaining momentum at international level (and to some extent at regional level) for its potential to tackle poverty, especially in marginalized and remote areas, and to address climate change (both in the adaptation to climate change and the mitigation of impacts). Lastly, the upcoming Asian Economic Community could provide market opportunities for agroecology products and incentive for certification.



Formal and informal education

Education, both formal and informal, based on the experience and knowledge of smallholder producers, is one of the most important aspects in moving agroecology forward in different parts of Asia and transmitting the knowledge to the next generation. Farmer Field Schools, communication between farmers, including farmer-to-farmer sharing, farmer researcher networks and education are an important part of moving agroecology forward in the region.

The transition process

The transition process is a key concept to understand agroecology. Indeed, for many farmers, a rapid shift to sustainable agro-ecosystem design and practices is not easy, as moving to a complex and integrated system requires time, knowledge, strong commitment and specific policy support.

The process to reach a more resilient agroecological system can be described in five steps, as follow, which require an increasing level of commitment (based on S Gliessman's work, **Box 4**).

Box 4: Levels of transition

At farm level:

1. Using inputs more efficiently so that fewer will be needed.
2. Developing alternative practices (use of nitrogen-fixing cover crops, nutrient recycling practices and technologies, biological control agents, shift to reduced or minimal tillage).

At territorial and community level:

3. Redesigning the agro-ecosystem in a more complex and integrated way on the basis on local agrobiodiversity, so that, relying on ecological processes, it becomes more efficient and resilient. An example is the diversification of farm structure and management through the use of rotations, multiple cropping and agroforestry.
4. Re-establishing a more direct connection between those who grow the food and those who consume it, for example through local markets.

At global level:

5. Building a new global sustainable food system involving deeper work on the ethics and economics of food system sustainability.



Development of the agroecological movement: from knowledge to science to policy

Social movements and the building of social capital have been emphasized as crucial elements in initiating a transition that is efficient at a territorial level and as a result of the work of social movements from the bottom up.

The example of the agroecology Learning Alliance in South East Asia (ALiSEA) was presented. This new innovative platform was created to network all initiatives supporting agroecology. It aims at increasing the visibility and credibility of the agroecology movement towards different stakeholders (farmers, consumers, policy makers, etc.) through supporting wider dissemination of successful alternative agricultural practices and informing public policies. ALiSEA seeks to be an open coalition of agroecology stakeholders (CSOs/NGOs/farmers' organizations, research centres/universities, private sector, government agencies) supporting Learning and Knowledge Sharing services. Amongst other activities, ALiSEA will be organized around:

- » An agroecology web portal (<http://ali-sea.org/>);
- » In-depth studies, thematic and multi-stakeholder workshops;
- » A small grant facility (to be launched in 2016).

A representative from Via Campesina insisted on the need for a transition from food security to food sovereignty for which farmers will be more empowered, and in which agroecology movements are considered as catalyst for the transition process.

Regional network on agroecology

Agroecology stakeholders clearly expressed their interest in taking part in the establishment and development of a regional network on agroecology. The participants' expectations for such a network were that it would:

- » build a shared understanding and common vision of agroecology,
- » develop synergies among stakeholders,
- » increase skills and expertise of network members through capacity building,
- » up-scale project activities, and
- » facilitate the dissemination of innovative techniques.

Thus, the current situation across the region and within each agroecology school of practice, as noted above, offers windows of opportunities for clarifying the concept of agroecology and supporting its implementation by all stakeholders, the promotion of agroecological practices and the facilitation of exchanges between groups with different understandings of agroecology.

It was also pointed out that the effects and damages of manmade disasters (negative effects of mining, dams, deforestation, etc.) have not yet been included in the discussion of agroecology and should be given more importance.



Support of policies at all level

The participants emphasized the need for policy support from governments to diffuse agroecology among the general public.

Governments should first of all ensure the access of small-scale farmers to resources (land, water and seed).

Investment in smallholder food producers should be prioritized. It was pointed out that opposition to a transition to agroecology exists and isolated initiatives of farmers cannot be effective to achieve the transition.

Direct financial support to agroecological initiatives such as access to credit, subsidies in developing agroecological farms and the transition to agroecology should be organized.

It was mentioned that planning, design and formulation of a policy for agroecology should be increasingly carried out inclusively, respecting the principle of free, prior and informed consent, in collaboration between policy-makers, scientists, educators, UN, development partners and CSOs, in villages in the field, listening to and learning from local communities and prioritizing resource-poor environments such as uplands, rain-fed, arid, and degraded areas.

To effectively scale up agroecology in the region, policies, programmes and initiatives advancing the transition to agroecology are needed with a long-term view. Policies that promote industrialized agriculture should be phased out and the barriers of transition need to be addressed.

A request was made to increase funding for agroecological projects and programmes and launch pilot projects such as the creation of agroecological territories at community, collective levels, integrating the different dimensions of communities - social, economic, political, environmental and cultural.

Governments should make agroecology an integral part of sub-national, national and regional agricultural policies and develop and implement appropriate legal and regulatory frameworks that will be implemented.

The real environmental costs and externalities of existing practices and policies should be considered urgently to ensure policy coherence, so that policies that hinder agroecology and the transition towards Agroecology were seen as an important issue, as well as regulations of pesticide use, fertilizers, other chemical inputs, and their advertising.

Research and university curricula and awareness-raising of the general public are crucial factors that need to be included in policies.

In addition, policies are needed: public procurement and social safety nets can be a very important and interesting way to support agroecology and smallholder farmers.



VI) WAY FORWARD AND MULTI-STAKEHOLDERS' DISCUSSION

Speakers

Clara I. Nicholls (The Latin American Scientific Society of Agroecology, Colombia)

Caterina Batello (FAO HQ, Italy)

Barbara Gemmill-Herren (World Agroforestry Centre (ICRAF), Nairobi, Kenya)

George Dixon Fernandez (International Federation of Rural Adult Catholic Movements (FIMARC), India)

Abha Mishra (New Asian Centre of Innovation for Sustainable Agriculture Intensification, Thailand)

Mia Md ISahaque (Ministry of Agriculture, Irrigation and Livestock, Bangladesh)

Chaired by **Esther Penunia** (Asian Farmers' Association (AFA), Philippines)

Example of initiatives from Latin American Regional Meeting on agroecology

The example of SOCLA, a regional organization for the promotion of agroecology in the Latin America and the Caribbean region, was presented. SOCLA promotes reflection, discussion and scientific exchanges between researchers, practitioners, extension agents and farmers. Thematic axes include alliances with social movements, public policies, territorial dimensions, restoration ecology, resiliency to climate change – from adaptation to transformation and gender. The example of Cuba was mentioned, as it demonstrates how agriculture can thrive without petroleum or other inputs but with political will, technical knowledge and scientific potential, polyculture, free manure, etc.

The Latin American approach on agroecology was also presented. While the International Symposium on agroecology in Rome was highly technical, the focus for the regional meeting in Latin America (LA) was on public policies to obtain high-level commitment for policies that can generate results and more research.

Work was not only focused on ministers but also on parliamentarians, as ministers cannot change laws and budgets alone. Many parliamentarians participate in the front against hunger that aims to work on food security, quality and nutrition. The LA event led to concrete political actions.

South-South Cooperation and partnerships are also a major objective: since 2010, the Community of Latin American and Caribbean States (CELAC) has worked on sustainable and inclusive development at the regional level to find solutions from within the region. For example, Brazil has developed a school feeding programme that awards a 30% premium to agroecologically-produced food. Producers know who will consume their food – the children in their areas. The programme does not lead to an increase in spending, but has achieved this with the same budget. Many countries are now developing public purchasing schemes for schools, hospitals and other public programmes.



The recommendations from the meeting included ones for creating a regional network to share best practices and knowledge, and encourage political commitment. Recently, ministers from the whole continent in a CELAC meeting approved a text to support national agendas regarding agroecology based on south-south cooperation and follow through on recommendations.

The importance of sharing experiences between regions was highlighted.

The Sub-Saharan Africa meeting on agroecology

Over 300 participants from CSOs, NGOs, governments, academia and farmer organizations participated in the regional meeting in sub-Saharan Africa in the beginning of November 2015. The aim was to assess the state of agroecological practices, identify constraints and gauge expectations. Experiences were shared to highlight and strengthen existing levers. It was a technical meeting with four topics discussed during the meeting: food security and nutrition, natural resources and climate change, social innovation, livelihoods and technology, legal frameworks.

Recommendations have been prepared to address governments, policy-makers, donors (including FAO), academia and CSOs, as well as all actors across levels and sectors. The next steps included bringing the outcomes to the attention of the regional conference for Africa in April 2016, as well as integrating agroecology in national and regional policies and programmes.

CSOs's point of view (FIMARC statement)

Agroecology is a way of life of communities and is based on traditional knowledge and farmers' innovations that include the sustainable use and conservation of seeds, breeds, feeds, and species. In addition, science has proven that smallholder producers feed the planet.

Agroecology is rooted in food sovereignty and collective rights and the commons. How, who and where to produce and the research agenda needs to be decided by the producer communities. Agroecology calls for reclaiming control and reshaping markets, claiming them back from the corporate and private sectors.

Agroecology is being undermined by a lack of effective public policies and by countervailing policies in infrastructure, trade, investment, etc. According to CSOs, there is a need for:

- » Community and collective approach;
- » Rights to use, access and management of resources;
- » Redistributive agrarian reform;
- » Agroecology means no use of GMOs, protects genetic materials and recognized farmers rights over these;
- » A new research paradigm including both formal, popular education, farmer-to-farmer exchange and building alliances.

Public policies should include:

- » Public procurement;
- » Supporting cooperative peasant institutions;
- » Strong legal frameworks at appropriate levels and in appropriate sectors;



- » Access to finance through appropriate institutions, mechanisms, etc.;
- » Supportive local, national and regional financial institutions;
- » Trade-investment agreements should not undermine agroecology in any way;
- » Infrastructure and other projects should not undermine agroecology (through evictions, destruction of ecosystems, knowledge, etc.);
- » Regulating and controlling agribusinesses and corporations through appropriate policies; projects and policies should not undermine local resilience, knowledge or capabilities;
- » Forbidding commercial fishing through deep sea trawlers in coastal areas; enforcing fishing in coastal areas through gill-nets and line-fishing.

The way forward – expectations from CSOs are:

- » Regional FAO Conferences must commit to setting up a new regional initiative on agroecology that also includes a monitoring system of all activities of FAO and governments in the region;
- » Systematically integrate agroecology into FAO's work as a central approach to its programme on food and agriculture and commit to allocate resources and budgets for the implementation at regional levels;
- » Support regional and national networks on agroecology for knowledge-sharing and capacity-building;
- » Revise working definitions within FAO that undermine agroecology. FAO should also speak about food sovereignty rather than food security;
- » National agroecology Days should be set up;
- » Support efforts of academics, researchers and organizations of small-scale food producers to set up scientific networks to support agroecology.

Points of view from representative from academia (AIT)

The Asian Institute of Technology (AIT) aims to bring stakeholders at different stages of the food chain together. The academy works together with farmers to find workable solutions and try out agroecological models. They work on 1) Sustainable land and water management and 2) Models to support green businesses.

The institute works in four countries in South-East Asia, targeting rain-fed agriculture, with rice as a staple crop. Smallholders practising rain-fed agriculture are the most food insecure, yet policies are not geared to their needs. Sustainable Rice Intensification (SRI) aims to develop practices to reduce water use, etc. However, the practices are loosely defined, because farmers need to define their own practices, for example spacing. SRI is an entry point for low-cost technological solutions, integrating them into research.

In 2009, AIT held a regional workshop with many actors to debate what the constraints to scaling up SRI are and how to develop location-specific technologies. They developed a benchmarking process and, in collaboration with Oxfam, FAO and national universities, they targeted three food insecure areas in this region in order to answer the following questions:

What are the local interests? How can we use our influence at the regional level and facilitate stakeholders across different levels?

Farmers used diaries to capture data and, in total, 5 000 farmers participated.



Agroecology is an evolving concept and there may be some confusion. However, this creates opportunities for innovation. Working with outliers is key to innovation and scientists need to come forward and examine these, rather than exclude them – we need to see how farmers have been able to enhance biological processes to achieve such outlying results.

**Points of view from a government representative:
Ministry of Agriculture, Irrigation and Livestock of Bangladesh**

The Government of Bangladesh has a target to end hunger and all forms of malnutrition, to double agricultural productivity and to ensure sustainable food security by 2030. Keeping this in mind, Bangladesh has some related policies: a national agricultural policy, a new agricultural extension policy, national seed policy, national food policy and a pesticide act, for instance for fisheries, irrigation, or rural livelihoods. All of these policies are farmer friendly.

The Ministry of Agriculture includes ten research institutions and an extension department which works in the field with new technologies and farmers. The Government of Bangladesh is serious about agroecology and thinks that it should be taken as a global issue, otherwise the world cannot advance. To conclude, be hopeful and go forward, light is at the end of the tunnel. As a representative of the Government of Bangladesh, he would like to invite you all to work together so that we can achieve a world free from hunger, malnutrition and a world of peace.



VII) RECOMMENDATIONS AND CLOSING

Speakers

Xuejun Liu (China Agricultural University)

Damaynati Buchori (Bogor Agricultural University, Indonesia)

Somchai Boonpradub (Representative of the Government of Thailand, Ministry of Agriculture and Cooperatives) and

Subash Dasgupta (FAO Regional Office for Asia and the Pacific)

The recommendations of the consultations

The participants in this meeting, representatives of governments, civil society, including peasants, fisherfolks, pastoralists, urban communities, indigenous peoples, women's organizations, youth and others, academia, and private sector issued recommendations for the development of agroecology in Asia and the Pacific. The final version of the recommendations of the consultation were presented after being debated in plenary session and amended (see **Annex 1**).

Government of Thailand speech

For the Government, and the King of Thailand, the principle of the self-sufficiency of the economy is a given priority. Mr. Somchai Boonpradub, Department of Agriculture, Ministry of Agriculture and Cooperatives informed that the Royal Thai Government, through the Ministry of Agriculture and Cooperatives, gives due importance to aspects of agroecological agriculture. They have relevant policies concerning this field in terms of organic agriculture and the New Theory Agriculture.

“Thailand is predominantly an agriculture-based country. A large proportion of the population derives their livelihood and income from the agricultural sector. With a favourable climate and well-developed agricultural processing, Thailand is among the top ten agricultural exporters in the world. Organic agriculture has become a major policy theme for agriculture development in Thailand. Organic farming was enlisted as an important nation agenda, to promote safe foods and national export. However, organic farming is not a recent phenomenon in Thailand. Local farmers have practised traditional farming for hundreds of years. Such practices have been developed and enriched through farmers' knowledge of local agroecology and environmentally sustainable ways of farming. The predominant organic agriculture in Thailand is crops especially rice, vegetables and fruits. Several producer groups produce organic rice, most of which is jasmine rice. Most of the organic rice is exported and a small quantity is sold domestically. Fresh vegetables are the second most important organic crop. Currently, there are three channels where such products are sold, i.e. supermarket chain, specialized shops and direct marketing, either farmers' markets or membership.



The Department of Agriculture (DOA), Ministry of Agriculture and Cooperatives has recommended the technology of organic agriculture to Thai organic farmers especially organic fertilization applications and integrated pest management (IPM), particularly biological control. DOA also offers standard certification for organic crops namely “Good Agricultural Practices” to organic farmers and farming throughout the country.

Furthermore, the New Theory is a most distinct and concrete example of the application of the Philosophy of Sufficiency Economic to the agriculture sector. His Majesty the King initiated this theory to help Thai farmers who suffer from the impacts of the economic crisis, natural disasters and other unproductive natural condition. The New Theory suggested that farmers apply the essential principles of the Philosophy of Sufficiency Economic, namely moderation, due consideration and self-immunity to their practice of farming as this would shield them from the risks and impacts of globalization and other uncontrollable factors in their farming.

In a more tangible sense, His majesty developed the New Theory as a system of integrated and sustainable agriculture, embracing his thoughts and efforts in water resource development and conservation, soil rehabilitation and conservation, sustainable agriculture and self-reliant community development. The aim is to optimize farmland. In order to adopt the New Theory agriculture, the land is divided into four parts with a ratio of 30:30:30:10. The first 30% is set aside for pond to store rainwater for crops and animals. The second 30% is set aside for rice cultivation for family consumption. The third 30% is used for growing fruit and perennial trees, vegetable, field crops and herbs for daily consumption. The last 10% is set aside for accommodation, animal husbandry, road and other structures. All products, however, if there is any surplus, it will be sold.”

FAO Regional office conclusion

Mr Subash Dasgupta of the FAO Regional Office for Asia and the Pacific expressed assurance that the senior management of FAO will address the recommendations of this meeting and share them with national governments in the region. The documents and recommendations produced by this meeting will be useful to formulate future work plans of FAO if governments are in agreement. In this way, agroecology will become part of agricultural production system in the region. Thanks were given to everyone for having come from all over the region and the world in order to participate in the meeting, and also to the Government of Thailand as their presence at the opening indicates their commitment to his process.



Annex 1

RECOMMENDATIONS of participants in the Multistakeholder Consultation on Agroecology in Asia and the Pacific

Context

FAO organized a Symposium on Agroecology for Food Security and Nutrition on 18 and 19 September 2014 in Rome, Italy. This Symposium, which was considered a great success, gathered 400 scientists, producers, decision-makers and representatives of the private sector, the public sector and NGOs. On occasion of the Symposium, the Director-General of FAO, José Graziano da Silva, announced that FAO would organize regional meetings on agroecology in Latin America, Africa and Asia. This reflects one of the learnings of the International Symposium, namely that the implementation of agroecology, to be effective, must be based on regional and local realities and on the specificity of economic, social and environmental contexts.

In February 2015 the representatives of small-scale food producers and civil society gathered at the Nyéléni Centre in Sélingué and agreed on the Nyéléni declaration on agroecology explaining the points of view of civil society on agroecology.

The regional meeting on agroecology in Asia

From 24 to 26 November 2015, over 150 participants representing governments, civil society, including peasants, fisherfolks, pastoralists, urban communities, indigenous peoples, women's organizations and youth, academia and private sector gathered in Bangkok for the multistakeholder consultation on agroecology in Asia and the Pacific organized by FAO. This meeting is based as a follow-up to the International Symposium on agroecology for Food Security and Nutrition which was held in September 2014.

Agroecology, which is based on the adaptation of agriculture to local conditions, natural cycles and needs, is not new to the Asia – Pacific region and has been practiced by Asian small-scale food producers across the region, including peasants, fisherfolk, pastoralists, urban communities, indigenous peoples, women's organizations, youth and others, are nourishing and maintaining communities through agroecology. Although they do not systematically use the term agroecology explicitly, many actors and initiatives throughout Asia and the Pacific are based on agroecological principles, which include the protection of natural habitats. There are many ecological zones and societal diversity within this region resulting in unique agroecological approaches.

During this meeting, participants highlighted the many agroecological initiatives and practices which play a role on a number of different aspects including reduction of rural poverty, eradication of hunger and malnutrition, promotion of sustainable agricultural development, improving soil



fertility, improvement of resilience of agriculture to climate change all of which are central to achieve the Sustainable Development Goals. Agroecology also provides prospective employment for rural youth and, addressing different livelihoods related to agriculture, can contribute to stop the enduring rural exodus in Asia and the Pacific. Despite evidence of agroecology's benefits, many public policies are not supportive to agroecology.

Crucial elements that are common across different agroecological approaches are:

- » Agroecology is an integrated and holistic approach rooted in and arising from local community and cultural practice at the territorial level.
- » Autonomy is a pillar of agroecology.
- » It contains innate capacity for adaptation and resilience to climate change, natural disasters, economic, environmental and other shocks.
- » It is founded on a rights based approach;
- » Women's knowledge, values, vision and leadership are central to agroecology.

Recommendations

During our discussions in seven sessions and two pre-meetings around the following subjects:

1. Farmers' Fields Schools (FFS) and agroecology
2. Agroecology Knowledge Platforms and Farmer-Researcher Networks
3. Overview of agroecological systems in Asia and the Pacific and examples of agroecology approaches diversity in the region;
4. Agroecology and natural resources in the context of climate change;
5. Agroecology learning processes, knowledge sharing and building agroecological movements;
6. Making markets works for agroecology;
7. Agroecological transitions in Asia for Food and Nutrition security, initiatives and policies to scale up agroecology
8. Synthesis of the key points of the discussion and recommendations
9. Multi-stakeholder discussion panel: outcome and way forward

The participants of this meeting, representatives of governments, civil society, including peasants, fisherfolks, pastoralists, urban communities, indigenous peoples, women's organizations, youth and others, academia, and private sector issued the following recommendations for the development of agroecology in Asia and the Pacific:

Governments, decision-makers, technical and financial partners, with the support of intergovernmental organizations in particular FAO, should:

1. Ensure, recognize, respect and uphold small-scale food producers' and communities', in particular women's, youths' and indigenous peoples', rights to land, water, seeds, oceans, forests, commons, biodiversity and territory, also considering the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests and the Voluntary Guidelines for Securing Sustainable Small-scale fisheries and the final declaration of the International Conference on Agrarian Reform and Rural Development.



2. Make agroecology an integral part of sub-national, national and regional agricultural policies and develop and implement appropriate legal and regulatory frameworks that will be implemented. Planning, design and formulation of policy for agroecology should be increasingly carried out inclusively, respecting the principle of free, prior and informed consent, in a collaboration between policy makers, scientists, educators, UN, development partners, CSOs, in villages in the field, listening to and learning from local communities and prioritizing resource-poor environments such as uplands, rain-fed, arid, and degraded areas.
3. Consider the real environmental costs and externalities of existing practices and policies. Ensure policy coherence, such that policies that hinder agroecology and the transition toward agroecology are revised.
4. Prioritize investments in smallholder food producers, reorient markets to make them work for small-scale food producers, including to strengthen and where needed creation of local markets and developing and implementing institutional food procurement policies oriented towards agroecological and local products.
5. Create, in collaboration with all relevant stakeholders, platforms for the collection and the exchange of agroecological experiences and innovations, environmental monitoring, as well as funding at the level of the Asia and Pacific region as well as at national levels.
6. Create a cross-cutting and intercultural education strategy as well as national training centres and dedicated certificates and degrees on agroecology. This should enhance the skills of farmers to better understand and use markets for income and expanded opportunities including through Community Supported Agriculture, organized cooperatives, and better use of social media and other ICT innovations.
7. Integrate agroecology in the curricula of both formal and informal primary and higher education institutions, in vocational training centers for producers, including farmer field schools, school farms, farmers' trainings and school gardens. This should recognize and value the important agroecology work ongoing in government and civil society and social movement Farmer Field Schools, and build on that foundation to further develop, strengthen and upscale agroecology. The content of the above should be derived from the knowledge generated by small-scale food producers themselves.
8. Increase funding for agroecological projects, programmes and launch pilot projects such as the creation of agroecological territories at community, collective levels, integrating the different dimensions of communities - social, economic, political, environmental and cultural.
9. Preserve and expand the rights of small-scale food producers over local genetic resources and biodiversity: seeds, livestock breeds, fish species, plant varieties, knowledge, manure and feeds. Support and revive traditional management practices, local rice varieties and other staple food varieties and neglected and underutilized as well as drought-resistant crops through for example, peasant seeds houses and networks and protect genetic materials, knowledge and innovations of small-scale food producers against any negative external influence.



Civil Society Organizations should:

10. Develop and reinforce partnerships with FAO on agroecology, specifically on data gathering, case studies and advocacy.
11. Farmer field schools should evolve, transform and increase their attention to livestock, fish, and their associated pastoral ecosystems in their curriculum and policy advocacy.

Institutions at all levels, including the academic and research community, all communities and sectors should:

12. Build a regional network of agroecology researchers, involving CSOs and small-scale food producers and allow for learning from each other across countries, contributing to achieving recommendations 13-16.
13. Recognize that research always entails ethical decisions and that farmers are co-researchers and innovators.
14. Devote more means to research on agroecology and climate change with an emphasis on the selection of varieties and species directly at farm level, as well as on social and human sciences applied to agroecology.
15. Recognize, support and document producers' knowledge. For this, a new research and extension paradigm is necessary, that includes participatory action research, the co-production of oral and written knowledge and cultural practices. All agroecology educational interventions should address the needs of communities inclusively, considering the particular needs of women, indigenous peoples, vulnerable groups, and youth.
16. Compile and share data with small-scale food producers, policy makers, consumers, in a participatory manner, to make strong public policies to support agroecology. Data should include for example: percentage of production from agroecology, market-related data, effects of agroecological approaches on climate change resilience, price levels and setting, nomadic (and livestock) migratory routes and fish migration patterns as well as historical practices of exchange of products and traditional amongst various small-scale food producers among others.
17. Promote systems and practices of social innovation led by farmers in a bottom-up fashion to improve the fundamental role of agroecology in the conservation of biodiversity and dissemination of innovations.

We recommend the FAO Regional Office for Asia and the Pacific to inform the upcoming 33rd Regional Conference for Asia and the Pacific of these recommendations and discussions to promote agroecology in national policies and programmes and to propose to better promote agroecology in its ongoing regional programmes and initiatives, such as the agroecosystem-based Regional Rice Initiative, the Zero Hunger Initiative, the Blue Growth Initiative, and to set up a new regional initiative on agroecology that includes also a monitoring system of all activities of FAO and governments in the region on agroecology.



Annex 2

Advisory Panel

Name	Organization	Country
Mr Somchai Boonpradub	Ministry of Agriculture and Cooperatives - Department of Agriculture - Senior expert in cropping system	Thailand
Mr Pierre Ferrand	GRET - Regional Coordinator Agroecology Learning alliance in South East Asia (ALiSEA)	Laos
Mr Arif H. Makhdum	WWF Pakistan - Director Sustainable agriculture programme	Pakistan
Mr HD Kulkarni	ITC AgroForestry-Vice-president in charge of plantations	India
Ms Shalmali Guttal	Global South - Executive Director - (FGS)	Thailand
Mr Ubong Yoowah	Alternative agriculture network - regional policy coordinator - (LVC)	Thailand
Mr Lalji Desai	Gujarat Pradesh Congress Committee (GPCCO - General Secretary) - (WAMIP)	India
Mr Dao The Anh	Field Crop Research Institute (FCRI) -Deputy Director-General / Center for Agrarian System Research and Development(CASRAD) - Director	Vietnam
Ms Damayanti Buchori	Department of Pest and Plant Disease, Bogor Agricultural University - Indonesia	Indonesia
Mr Benjavan Rerkasem	Chiang Mai University	Thailand
Mr Raghunath Ghodake	Executive Secretary of APAARI	Regional Org
Mr Fusuo Zhang	China Agricultural University	China
Ms Clara Nicholls	Scientific organization/south-south sharing of agroecology science and networking	Colombia
Mr Harpinder Sandhu	Flinders University, Australia	Australia
Mr Steve Gliessman	University of California at Santa Cruz	USA
Mr Etienne Hainzelin	CIRAD - Advisor to CIRAD President	France
Mr Remi Cluset	FAO Headquarters - Senior Agricultural Officer - Agroecology	Italy
Mr Subash Dasgupta	FAO Regional Office for Asia and the Pacific - Senior Plant Production Officer	Thailand



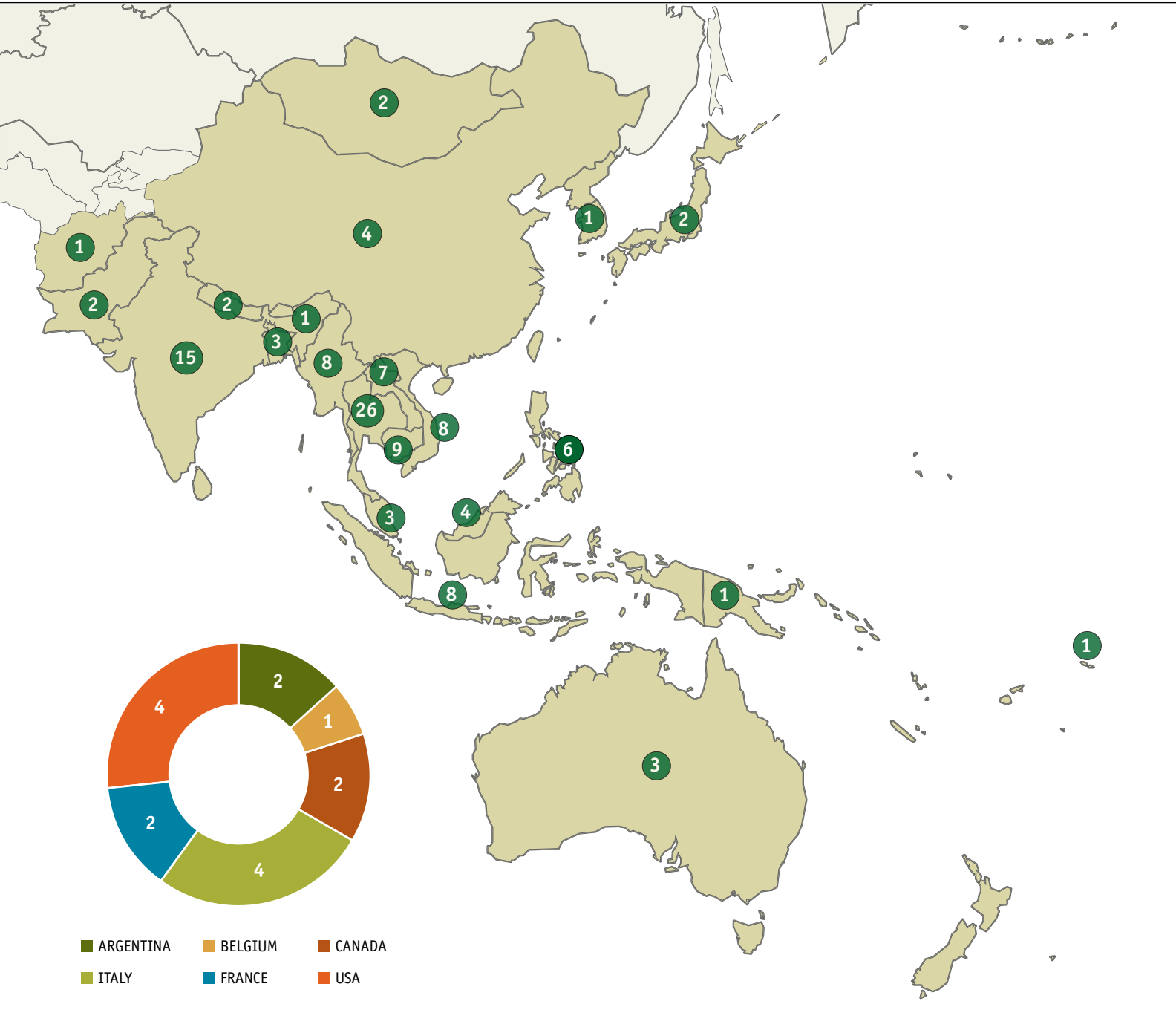
Annex 3 Pictures of the event







Annex 4 List of Participants



PARTICIPANTS PER COUNTRY OF THE MULTI-STAKEHOLDER CONSULTATION ON AGROECOLOGY IN ASIA AND THE PACIFIC



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12	Rada	Kong	Cambodia	Department of Agricultural Land Resource Management
13	Chhay	Ngin	Cambodia	General Directorate of Agriculture, MAFF
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19	Leah	Temper	Canada	USC
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21	Jing	Wang	China	Greenpeace East Asia
22	Lanying	Zhang	China	URGECI
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24	Sijun	Zheng	China	Bioversity International
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33	Yuji	Niino	FAO	FAO, RAP
34	Artur	Shamilov	FAO	FAO, RAP
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36	Nuttaporn	Jirakanyasak	FAO	FAO, RAP
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38	Dararat	Vibulcharoenkitja	FAO	FAO, RAP
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45	Dinesh	Desai	India	WAMIP
46	Lalji	Desai	India	WAMIP
47	Sharmistha	Dube	India	LVC
48	George Dixon	Fernandez	India	FIMARC
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50	Rony	Joseph	India	FIMARC
51	S	Kannaiyan	India	LVC
52	Chukki	Nanjundaswamy	India	KRRS / LVC
53	T M	Radha	India	AME Foundation
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55	Masroni	Abdul Wakid	Indonesia	Nusantara Farmer's movement
56	David	Ardhian	Indonesia	Nastari Foundation
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67	Kouang	Douangsila	Lao PDR	Ministry of Agriculture and Forestry
68	Frank	Enjalric	Lao PDR	CIRAD Laos
69	Pierre	Ferrand	Lao PDR	GRET
70	Chanthasone	Khamxaykhay	Lao PDR	DALaM/MAF
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72	Gilard	Olivier	Lao PDR	Agence Francaise de Developpemnet (AFD)
73	Janarthani	Arumugam	Malaysia	PANAP
74	Lim Li	Ching	Malaysia	Third World Network
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78	Undarmaa	Davaasambu	Mongolia	Mongolian University of Life Sciences
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90	Riza	Bernabe	Philippines	Oxfam-GB East Asia
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93	Estrella	Penunia	Philippines	AFA
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96	Misa	Konelio	Samoa	Ministry of Agriculture and Fisheries.
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99	Somang	Yang	Singapore	CropLife Asia
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102	Somchai	Boonpradup	Thailand	Ministry of Agriculture and Cooperatives of Thailand
103	Alain	Brauman	Thailand	Biodiversity
104	Baramee	Chaiyarat	Thailand	LVC Thailand
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106	Watchapol	Daengsubha	Thailand	Greenpeace Southeast Asia
107	Pichaporn	Damriram	Thailand	Ministry of Agriculture and Cooperatives of Thailand
108	William Wyn	Ellis	Thailand	Sustainable Rice Platform, UNEP
109	Raghunath	Ghodake	Thailand	Asia-Pacific Association of Agricultural Research Institutions
110	Shalmali	Guttal	Thailand	Focus on the Global South (FGS)
111	Marut	Jatiket	Thailand	Thai Education Foundation / The Field Alliance
112	Jiraphat	Jiraphat	Thailand	Department of Agriculture
113	Yupin	Kasena	Thailand	LVC Thailand



N°	First name	Last name	Country/ Nationality	Organization
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120	Niran	Nirannoot	Thailand	The Biodiversity Finance Initiative
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125	Saowanee	Sangkara	Thailand	
126	Arat	Sangubon	Thailand	LVC Thailand
127	Wisarut	Sanmaair	Thailand	Department of Agriculture
128	Surapon	Songrak	Thailand	Focus/SPFT
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137	Ubon	Yoowah	Thailand	LVC
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139	Barbara	Gemmill-Herren	USA	ICRAF



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144	Le Nguyet	Minh	Viet Nam	Oxfam America
145	Mayu	Ino	Vietnam	Seed to table
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147	Pham	Thi Sen	Vietnam	NOMAFSI (Northern mountainous Agriculture and Forestry Science Institute)
148	Tu Thi	Tuyet Nhung	Vietnam	PGS
149	Pham	Van Hoi	Vietnam	Center for Agricultural Research and Ecological Studies (CARES), Vietnam National University of Agriculture
150	Kris	Wyckhuys	Vietnam	CIAT
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153	Sung-Woong	Jung		



MULTI-STAKEHOLDER CONSULTATION
on AGROECOLOGY
IN ASIA AND THE PACIFIC

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Seeking to gain a better understanding of the role that agroecology can play in eradicating hunger and malnutrition, FAO organized the Multistakeholder Consultation on agroecology for Asia and the Pacific, held in Bangkok, Thailand on 24-26 November 2015.

FAO acted as a facilitator to enable debates and foster collaboration among a variety of actors in order to advance science, knowledge, public policies, programmes and experiences on agroecology, supporting the strengthening of the already-extensive evidence-based knowledge for agroecological approaches in agriculture.

The participants in this meeting, representatives of governments, civil society, including peasants, fisherfolks, pastoralists, urban communities, indigenous peoples, women's organizations, youth and others, academia, and private sector, debated agroecological approaches in the region and challenges linked to food systems, climate change, natural resources, social innovation and public policies needed. They issued recommendations for the development of agroecology in Asia and the Pacific after two days of discussion.

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