ASEAN Multi-Sectoral Workshop on Mainstreaming Biodiversity for Food and Agriculture

ASEAN Multi-Sectoral Workshop on Mainstreaming Biodiversity for Food and Agriculture

4 – 6 December 2018 • Bangkok, Thailand

SUMMARY REPORT
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<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACB</td>
<td>ASEAN Centre for Biodiversity</td>
</tr>
<tr>
<td>AEC</td>
<td>ASEAN Economic Community</td>
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<tr>
<td>AMAF</td>
<td>ASEAN Ministers on Agriculture and Forestry</td>
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<tr>
<td>AMME</td>
<td>ASEAN Ministerial Meeting on the Environment</td>
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<tr>
<td>AMS</td>
<td>ASEAN Member States</td>
</tr>
<tr>
<td>ASCC</td>
<td>ASEAN Socio-Cultural Community</td>
</tr>
<tr>
<td>ASEAN</td>
<td>Association of Southeast Asian Nations</td>
</tr>
<tr>
<td>ASFCC</td>
<td>ASEAN-Swiss Partnership on Social Forestry and Climate Change</td>
</tr>
<tr>
<td>ASOEN</td>
<td>ASEAN Senior Officials on Environment</td>
</tr>
<tr>
<td>ASPEN</td>
<td>ASEAN Strategic Plan on Environment</td>
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<tr>
<td>ATWGARD</td>
<td>ASEAN Technical Working Group on Agricultural Research and Development</td>
</tr>
<tr>
<td>AWGNCB</td>
<td>ASEAN Working Group on Nature Conservation and Biodiversity</td>
</tr>
<tr>
<td>AWG-SF</td>
<td>ASEAN Working Group on Social Forestry</td>
</tr>
<tr>
<td>BPP</td>
<td>Biodiversity Partnership Project</td>
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<tr>
<td>BCAMP</td>
<td>Biodiversity Conservation and Management of Protected Areas in ASEAN</td>
</tr>
<tr>
<td>CBD</td>
<td>Convention on Biological Diversity</td>
</tr>
<tr>
<td>DA</td>
<td>Department of Agriculture, Philippines</td>
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<tr>
<td>DENR</td>
<td>Department of Environment and Natural Resources</td>
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<tr>
<td>DOA</td>
<td>Department of Agriculture, Thailand</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>FAF</td>
<td>Food, Agriculture and Forestry</td>
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<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<tr>
<td>ICRAF</td>
<td>World Agroforestry Center</td>
</tr>
<tr>
<td>ISARD</td>
<td>Inclusive and Sustainable Agricultural and Rural Development</td>
</tr>
<tr>
<td>ITPGRFA</td>
<td>International Treaty on Plant Genetic Resources for Food and Agriculture</td>
</tr>
<tr>
<td>MOAC</td>
<td>Ministry of Agriculture and Cooperatives</td>
</tr>
<tr>
<td>MONRE</td>
<td>Ministry of Natural Resources and Environment</td>
</tr>
<tr>
<td>MoU</td>
<td>Memorandum of Understanding</td>
</tr>
<tr>
<td>NBSAP</td>
<td>National Biodiversity Strategy and Action Plan</td>
</tr>
<tr>
<td>ONEP</td>
<td>Office of Natural Resources and Environmental Policy and Planning</td>
</tr>
<tr>
<td>PoW</td>
<td>Programme of Work</td>
</tr>
<tr>
<td>RAP</td>
<td>Regional Action Plan</td>
</tr>
<tr>
<td>RECOFTC</td>
<td>The Centre for People and Forests</td>
</tr>
<tr>
<td>SDGs</td>
<td>Sustainable Development Goals</td>
</tr>
<tr>
<td>SEAMEO</td>
<td>Southeast Asian Ministers of Education Organization</td>
</tr>
<tr>
<td>SEARCA</td>
<td>Southeast Asian Regional Center for Graduate Study and Research in Agriculture</td>
</tr>
<tr>
<td>SOM-AMAF</td>
<td>Senior Officials Meeting of the ASEAN Ministers on Agriculture and Forestry</td>
</tr>
<tr>
<td>TABI</td>
<td>The Agrobiodiversity Initiative in Lao PDR</td>
</tr>
<tr>
<td>WG</td>
<td>Working Group</td>
</tr>
</tbody>
</table>
Acknowledgment

This regional multi-sectoral workshop was made possible through the support of the European Union-funded Biodiversity Conservation and Management of Protected Areas in the ASEAN (BCAMP) and the ASEAN Development Fund. The organisers - ASEAN Centre for Biodiversity and Southeast Asian Regional Center for Graduate Study and Research in Agriculture - are grateful for the kind hosting of the Ministry of Natural Resources and Environment and the Ministry of Agriculture and Cooperatives of the Royal Thai Government.
Background

Creating the balance between biodiversity conservation and agricultural development for food security has been a global challenge that is now actively being recognised by the ASEAN as among the regional concerns that need strategic and concerted actions.

However, the ASEAN region has yet to see an effective and enabling mechanism to mainstream the relevant and interconnected agriculture-biodiversity processes across all national and regional or international planning approaches and across sectors.

Mindful of the need for a more concerted action between and across sectors of biodiversity and agriculture, the ASEAN Centre for Biodiversity (ACB) and the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) have fostered a three-year partnership, which began in July 2016. The partnership, sealed by a Memorandum of Understanding (MoU), aims to pursue common objectives in biodiversity and agriculture and build a common understanding and stronger collaboration on the conservation and sustainable use of agricultural biodiversity or agrobiodiversity in the ASEAN.

The first joint initiative of ACB and SEARCA was the Regional Workshop on Agrobiodiversity with the theme, "Mainstreaming Biodiversity in Agriculture for Sustainable Development and Food Security in Southeast Asia", held on 12–14 September 2017 in Chiang Mai, Thailand.
The Chiang Mai workshop, which was attended by close to 60 people from the relevant ministries, non-government and academic institutions in the ASEAN Member States (AMS), and international organisations, served as a stocktaking activity on the knowledge, practices, and opportunities, as well as gaps and challenges, on agrobiodiversity management and conservation in the region. Among the recommendations of the workshop included the drafting of the ASEAN Regional Action Plan on Agrobiodiversity Mainstreaming, Conservation, and Sustainable Use 2017–2020 and its implementation under the Convention on Biological Diversity (CBD) Programme of Work (PoW) on Agrobiodiversity, and to support the integration and cross-sectoral and interdisciplinary collaboration for agrobiodiversity in ASEAN.

The efforts of the ASEAN in mainstreaming biodiversity in agriculture directly supports the call of the Cancun Declaration on Mainstreaming the Conservation and Sustainable Use of Biodiversity for Well-being (Cancun, Mexico, 3 December 2016). The Cancun Declaration declares the commitment of the Parties to undertake specific actions for the agriculture sector, among others (i.e. fisheries and tourism), tailored to national needs and circumstances and in line with other relevant international agreements, bearing in mind that agriculture depends heavily on biodiversity and its components and ecosystem functions and services, which biodiversity underpins, and that it also has direct and indirect impacts on biodiversity.

Priority strategies and action plans in ASEAN to mainstream, conserve, and sustainably utilize agrobiodiversity are also anchored in the CBD PoW on Agrobiodiversity. This consists of a set of goals and elements, which can impact on the multi-functionality of agro-ecosystems. These aims are to promote the following: (1) positive effects and mitigation of negative impacts of agricultural practices on agrobiodiversity; (2) conservation and sustainable use of genetic resources of value for food and agriculture; and (3) fair and equitable sharing of benefits arising out of the utilization of genetic resources. The elements involved are: (1) assessment; (2) identifying adaptive techniques, practices, and policies; (3) capacity building, increasing awareness, and promoting responsible action; and (4) mainstreaming national plans and strategies for conservation and sustainable use of agrobiodiversity.

The multi-functionality of agro-ecosystems can also relate directly to the Blueprints of the three ASEAN Community Pillars, in particular the strategic area on Conservation and Sustainable Management of Biodiversity and Natural Resources (Action Line C.1 under the ASEAN Socio-Cultural Community [ASCC] Blueprint 2025); the Action Plan of the ASEAN Working Group on Nature Conservation and Biodiversity (AWGNCB) under the ASEAN Strategic Plan on the Environment (ASPEN); and consequently, to seven of the 17 UN Sustainable Development Goals (SDGs) 2030, such as Goals 2 (Zero Hunger), 6 (Clean Water and Sanitation), 12 (Sustainable Consumption and Production), 13 (Climate Action), 14 (Life below Water), 15 (Life on Land), and 17 (Partnership for the Goal).
Introduction

To put forward the recommendations of the stocktaking workshop in 2017, the ACB and SEARCA, together with the Ministry of Natural Resources and Environment (MONRE) and the Ministry of Agriculture and Cooperatives (MOAC) of Thailand, organised the second workshop dubbed, “ASEAN Multi-Sectoral Workshop on Mainstreaming Biodiversity for Food and Agriculture”.

Specifically, the workshop aimed to:

1. Provide a platform for the environment and agriculture sectors in the ASEAN Community to discuss and develop a common understanding of agrobiodiversity conservation and sustainable use;
2. Serve as a venue for the AMS and relevant ASEAN sectoral bodies to identify and define possible areas of collaboration and supportive processes among them and the development partners towards mainstreaming biodiversity in the agriculture sector; and
3. Identify an agrobiodiversity pilot project, which may include the mechanism for a multi-sectoral collaboration for mainstreaming agrobiodiversity in the planning and development processes across the agriculture and environment sectors in the ASEAN towards its conservation and sustainable use.

The Workshop was held from 4–6 December 2018 in Bangkok, Thailand with the last day spent for the visit to the Royal-initiated Wat Mongkol Chaipattana Area Development Project in Saraburi Province. The programme was divided into two major parts and four sessions, composed of a keynote session, plenary presentations, and focus group discussions (ANNEX 1).

The Workshop was attended by close to 60 representatives of the environment and agriculture ministries from Cambodia, Indonesia, Lao PDR, Myanmar, Philippines, Singapore, and Thailand. ASEAN bodies that attended are the Environment Division and the Food, Agriculture, and Forestry Division of the ASEAN Secretariat, and the ASEAN Technical Working Group on Agricultural Research and Development (ATWGARD). The international and regional organisations that participated in the workshop included Bioversity International, NIRAS, Non-Timber Forest Products Exchange Programme (NTFP-EP), The Centre for People and Forests (RECOFTC), Southeast Asian Regional Center for Tropical Biology (SEAMEO-BIOTROP), The Agrobiodiversity Initiative in Lao PDR (TABI), and World Agroforestry Center (ICRAF) (ANNEX 2).
Opening Programme

The workshop officially opened with messages from MONRE of Thailand, represented by Dr. Nattanich Asvapoositkul, an Environmental Expert from the Office of Natural Resources and Environmental Policy and Planning (ONEP); MOAC of Thailand, represented by Dr. Surmsuk Salakpetch, Director General of the Department of Agriculture; ACB, represented by Ms. Clarissa Arida, Director for Programme Development and Implementation on behalf of Dr. Theresa Mundita Lim, ACB Executive Director; and SEARCA, represented by Dr. Pedcris Orencio, Program Head for Research and Development, on behalf of Dr. Fernando C. Sanchez, Jr.

The opening messages underlined the importance of agriculture for food security, but majority of current agricultural development and intensified practices are unsustainable and contribute to the unprecedented loss of biodiversity, which is further exacerbated by the impacts of climate change. Hence, the agriculture sector has to commit towards implementing a sustainable and responsible agricultural system, which could be propelled by concrete actions, such as incorporating sustainable practices in agricultural plans, policies, and processes. Together, MONRE and MOAC of Thailand take pride in their efforts to harmonise actions towards protecting agrobiodiversity and its resources amidst the intensification of agriculture since the last decade. The speakers highlighted the relevance of the workshop in building structures and mechanisms that will foster strategic and relevant partnerships between the biodiversity and agriculture sectors. The ACB, in particular, hopes to catalyse inter- and multi-sectoral actions in support of sustainable development building on the relevant decisions of the 14th UN Conference on Biodiversity on mainstreaming biodiversity and as part of its efforts in integrating biodiversity conservation in the planning and development processes in the sectors of climate change, fisheries, and agriculture, among others. SEARCA, for its part, looks forward to a common understanding of agrobiodiversity conservation and sustainable use, which is not yet widely recognised in the region. The speakers further encouraged everyone to actively participate in the workshop while taking note of the core of sustainable development, which is striking the balance among socio-economic growth, agricultural productivity, and environmental protection.
Background and Objectives of the Mainstreaming Initiatives

The background and objectives of the workshop were presented by the ACB and SEARCA, in view of the global and regional frameworks on mainstreaming biodiversity conservation in other sectors, including agriculture. Their presentations were complemented with sharing from international development partners, such as Bioversity International and NTFP-EP, on mainstreaming agrobiodiversity at the global and/or regional scales. The inputs indicated a wealth of support in the region in terms of promoting agrobiodiversity conservation. The European Union (EU), for one, has funded the BCAMP Project, implemented in the ASEAN through the ACB, to provide enabling activities and/or conditions for collaborative actions in mainstreaming agrobiodiversity in the ASEAN region. SEARCA is piloting the Inclusive and Sustainable Agricultural and Rural Development (ISARD) model in the ASEAN through needs-based interventions and collaboration with rural communities and other relevant partners and taking into account the landscape continuum in developing agricultural systems. NTFP-EP has been successfully supporting forest-based communities to strengthen their capacity in the sustainable management of natural resources and in addressing interlinked issues of food security, poverty, and climate change through partnerships with relevant ASEAN bodies and programs (ASEAN Working Group on Social Forestry [AWG-SF], ASEAN-Swiss Partnership on Social Forestry and Climate Change [ASFCC]). And finally, Bioversity International demonstrated a successful biodiversity mainstreaming case through the Biodiversity for Food and Nutrition Program by upscaling and sharing innovative approaches and tools and involving diverse sectors and stakeholders in transforming food systems. Details of their presentations are in ANNEXES 3A to 3G.
Key Results and Messages of the Initial Stocktaking Workshop in Chiang Mai, 2017

The regional stocktaking workshop on agrobiodiversity, entitled “Mainstreaming Biodiversity in Agriculture for Sustainable Development and Food Security in Southeast Asia” held in September 2017 in Chiang Mai, Thailand, was an important precursor of the multi-sectoral workshop. The stocktaking activity provided a sufficient overview of the gaps in knowledge and information on agrobiodiversity in the region, which became a key consideration in the present workshop discussions; hence, it was deemed necessary to revisit its key results and messages. The highlights and results of the stocktaking workshop were presented by Dr. Filiberto Pollisco Jr., ACB Programme Specialist of ACB. The results of the preliminary survey on agrobiodiversity status in ASEAN, which was part of the stocktaking activity, were presented by Dr. Wayne Nelles, a visiting scholar at the Chulalongkorn University in Bangkok who served as the Technical Coordinator of the Chiang Mai workshop in 2017.

The results of the survey on the agrobiodiversity conservation and sustainable use consisted of preliminary national survey data, regional trends, and practical challenges. The survey was implemented in all ten ASEAN Member States, however, only six responded. Reflecting on the results of the survey and his analysis of the available literatures on the subject, Dr. Nelles enumerated the main challenges for the AMS and partners and the recommended solutions:

1. Incomplete survey data because of non-response of AMS requires a follow-up to better clarify gaps;
2. Some AMS have identified gaps in data, knowledge management, and science;
3. Work is needed to develop, strengthen, and align AMS (and ASEAN-level) policies with CBD reporting and other international processes;
4. Lack of independent Monitoring and Evaluation; hence, independent/peer-review analysis is essential for good scientific research to inform policy and practice; and
5. Need to build more and new research and capacity development, which will need the assistance of partners through technical and financial cooperation.

The key recommendations from the stocktaking workshop were presented by Dr. Pollisco, as follows: 1) Develop and further discuss the Draft ASEAN Regional Action Plan on Agrobiodiversity Mainstreaming, Conservation, and Sustainable Use 2017–2020 and its implementation under the CBD PoW on Agrobiodiversity; 2) Support the integration and cross-sectoral and interdisciplinary collaboration for agrobiodiversity in ASEAN; 3) Develop and secure funding for interrelated projects to support the CBD agenda on agrobiodiversity; and 4) Mainstream agrobiodiversity into the education sector, i.e. link to possible initiatives under the ASEAN Work Plan on Education 2016–2020.

Details of the presentations are in ANNEXES 4A and 4B.
Agrobiodiversity or Related Issues in Existing Strategic Plans and Implementation Mechanisms in ASEAN

The ASEAN guidelines and strategic plans related to agrobiodiversity were also presented at the workshop by the ASEAN Secretariat. The overview of the ASEAN Cooperation on Environment Framework was given, on behalf of the ASEAN Secretariat, by Ms. Revina Indra Putri, Officer of the Environment Division/Sustainable Development Directorate; while the overview on ASEAN Guidelines for Agroforestry Development was presented by Dr. Dian Sukmajaya, Senior Officer of the Food, Agriculture, and Forestry Division/Sectoral Development Directorate.

The draft ASPEN, particularly the Action Plan on Nature Conservation and Biodiversity, defines the structure and mechanism for mainstreaming biodiversity into other sectors, including agriculture. Among the programs under this Strategic Priority are to develop guidelines for mainstreaming agrobiodiversity conservation, coordinate with relevant sectors, and document best practices. The Action Plan on Nature Conservation and Biodiversity is guided by the ASEAN Socio-Cultural Community Blueprint.

Meanwhile, the ASEAN Policy Framework in Food, Agriculture and Forestry (FAF) Sector is guided by the ASEAN Economic Community (AEC) Blueprint, AEC 2025 Consolidated Strategic Action Plan, Vision and Strategic Plan for ASEAN Cooperation in FAF 2016–2025, and the Strategic Plan of Action for the ASEAN Cooperation in Agricultural Research and Development (2016–2020). These frameworks tackle agroforestry as an intervention towards mainstreaming agrobiodiversity. Among the next actions under these frameworks are to develop joint proposals/initiatives/activities; promote and enhance...
intersectoral dialogue; stock take best practices and strategies; identify relevant existing platforms to discuss the issues; and mobilize resources and partnerships within and beyond the FAF sector.

National Initiatives

Representatives from Cambodia, Indonesia, Lao PDR, Myanmar, Philippines, Singapore, and Thailand shared experiences on their national-level initiatives on agrobiodiversity focusing on the inter-ministerial or inter-sectoral linkages and collaboration taking place and in specific areas of agrobiodiversity mainstreaming or activities. The country presentations are summarised as follows:

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<tr>
<th>Country</th>
<th>Project</th>
<th>Agrobiodiversity Practice and Inter-sectoral Collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>IBIS Rice Project</td>
<td>• Meeting the commercial demand for rice without using intensive/ unsustainable production systems</td>
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<tr>
<td></td>
<td></td>
<td>• Engages farmers in conservation work through organic rice production, with cooperation from technical experts and other members of the community</td>
</tr>
<tr>
<td>Indonesia</td>
<td>People’s Sovereignty in Utilization and Preservation of Buffer Zones and Village Life around the Mt. Ceremai National Park</td>
<td>• Protected area (PA) management that encompasses agro-ecological and agroforestry systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• In cooperation with tourism, social forestry and agriculture sectors, implements healthy agriculture system around buffer zones of PAs</td>
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<tr>
<td></td>
<td></td>
<td>• With the engagement of relevant sectors, Indonesia is set to develop a National Agro-Biodiversity Strategy Action Plan (NBSAP)</td>
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Mr. Sophanna Ly  
Mr. Roby Rajani Nurzaini  
Ms. Chinda Milayvong  
Ms. Nang Moe Kham
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<tr>
<th>Country</th>
<th>Project</th>
<th>Agrobiodiversity Practice and Inter-sectoral Collaboration</th>
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<tbody>
<tr>
<td>Lao PDR</td>
<td>The Agrobiodiversity Initiative in Lao PDR</td>
<td>• TABI is a cross-sectoral and multidisciplinary initiative involving multiple partners and government agencies; also addresses intergenerational issues through the web-based platform for knowledge sharing on agrobiodiversity or Pha Khao Lao</td>
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<tr>
<td></td>
<td></td>
<td>• Pha Khao Lao promotes informed decisions, builds national pride, inspires innovative ideas, changes mindset of people on food; and builds partnerships with relevant sectors, such as farmer groups, restaurants, and private sector</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Projects on the Protection of Plant Genetic Resources in Myanmar</td>
<td>• In collaboration with other countries and international organizations under the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), Myanmar focuses on plant genetic resource conservation to support agrobiodiversity conservation in the country (e.g. preservation of Namathalay rice variety)</td>
</tr>
<tr>
<td>Philippines</td>
<td>Department of Agriculture (DA)-Department of Environment and Natural Resources (DENR) Partnerships for Biodiversity Conservation: Biodiversity Partnership Project (BPP)</td>
<td>• Mainstreaming local agricultural landscape through intersectoral partnership</td>
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<tr>
<td></td>
<td></td>
<td>• Program has demonstrated that with national guidelines/ frameworks in place, local governments can be capacitated to promote biodiversity conservation in agricultural landscapes</td>
</tr>
<tr>
<td>Singapore</td>
<td>Novel Integrated Agro-technologies, Plant Nutrients, and Microbials for Improved Production of Green Leafy Vegetables in Singapore</td>
<td>• Ensures a resilient and safe supply of food using environment-friendly approaches in production and climate-appropriate varieties</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Collaborating with a broad range of sectors in studying and developing novel technology platforms</td>
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### Country Project Agrobiodiversity Practice and Intersectoral Collaboration

<table>
<thead>
<tr>
<th>Country</th>
<th>Project</th>
<th>Agrobiodiversity Practice and Intersectoral Collaboration</th>
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</table>
| Thailand         | Thailand Master Plan for Integrated Biodiversity Management 2015–2021; Climate Change Master Plan 2015–2020; Agrobiodiversity Management of the Department of Agriculture (DOA) Thailand for Sustainable Agriculture | • The agriculture sector subscribes to a 20-year strategic plan, which includes a Balanced and Sustainable Management of Agricultural Resources and the Environment and which involves intersectoral collaboration: fisheries, livestock, land management, and rice production sectors  
• The environment sector adopts a master plan that integrates protection of genetic diversity, sustainable production and consumption, and management of agro-ecological areas guided by the CBD and ASPEN |
| Ms. Kunyaporn Pipithsangchan Director of Genebank Research and Development Group Biotechnology Research and Development Office, Department of Agriculture | Ms. Somawan Sukprasert Environmentalist Professional Level Biodiversity Management Division, Office of Natural Resources and Environmental Policy and Planning, Ministry of Natural Resources and Environment |
Focus group discussions were conducted to discuss and identify the priority actions in ASEAN for the conservation and sustainable management of agrobiodiversity. The discussions were guided by the technical paper drafted by Dr. Percy Sajise, which presented some options and recommendations for intersectoral linkages and collaboration for mainstreaming agrobiodiversity in the ASEAN region.

To provide a substantive background of the session, Dr. Sajise explained that the technical paper was developed within the context of conservation and sustainable use of biodiversity for food and agriculture as a major strategy that can be used among the AMS for ensuring the attainment of the ASEAN vision: an inclusive, sustainable, resilient, dynamic community, which engages and benefits its people. He also pointed out that ASEAN is experiencing a “double squeeze” of increasing demand for ecosystem services and goods to serve the fast-growing population; and without action, this double squeeze could lead into greater struggle for ASEAN people to survive.

The session was based on the need to outline actions that can promote intersectoral linkages to ensure the achievement of the ASEAN vision, which was also strongly emphasized by Dr. Sajise in his paper. Details of the presentation by Dr. Sajise is in ANNEX 6.

The proposed actions were identified on a two-level process, through two breakout groups. The first level was to identify as many possible actions using five criteria:

1. Scalable
2. Partnership-potential
3. Urgency
4. Relevance
5. Time-bound

The second level process was to prioritise the top three actions using the same criteria. Each of the two groups came up with three priorities, and, when combined together, resulted in the five proposed priority joint actions.
Proposed Joint Actions in ASEAN for the Conservation and Sustainable Management of Agrobiodiversity

The recommended priority joint actions within the scope of agrobiodiversity to support the implementation of the relevant sectoral bodies’ plans of action are as follows:

1. Implement a cross-sectoral regional workshop on developing a regional assessment guideline towards a common understanding on agrobiodiversity and cross-pillar collaboration plan.
2. Develop regional and national collaboration plans for mainstreaming biodiversity in the agriculture sector to include the appointment of agrobiodiversity focal points in each AMS and a multi-sectoral committee or working groups (WGs) to support regional and national activities.
3. Implement education and training programmes on mainstreaming biodiversity in the agriculture sector, including curriculum development (i.e., distance learning, inclusion of modules in existing curriculum), agricultural extension services, training on in/ex situ conservation, and related workshops/seminars.
4. Promote a common understanding of agrobiodiversity through social media, online platforms, training manuals and guides, forums, and sharing of best practices.
5. Conduct studies to assess and consolidate best practices and existing policies on agrobiodiversity and the typology of agrobiodiversity, and other technical assessment methods, such as spatial mapping.
The workshop discussed possible mechanisms at the regional and national levels to enhance dialogue on mainstreaming biodiversity in agriculture, particularly in implementing the above-mentioned joint activities. In general, the participants agreed that no new working group will be created, nor will the present ASEAN structure be reconstituted for this purpose.

The options were mapped by the workshop participants in view of the current institutional capacity of the ASEAN, such as the existing sectoral groups under the ASEAN Senior Officials on the Environment (ASOEN) and the Senior Officials Meeting of the ASEAN Ministers on Agriculture and Forestry (SOM-AMAF) under the ASCC and AEC pillars, respectively, with functions and thrusts that can enable the integration of biodiversity and agriculture concerns. The lead role of ASOEN was recognised in all options since the mainstreaming effort emanates from the biodiversity sector.

The workshop came up with three options on the organisational structure for the regional coordination of the proposed joint actions:

**Option 1.** Through the existing mechanism/framework, the ACB and SEARCA will continue the regional dialogue on mainstreaming biodiversity in food and agriculture and facilitate endorsement of recommendations thereof for consideration of the relevant ASEAN sectoral bodies.

**Option 2:** The ASOEN and SOM-AMAF, with the former as lead, will chair together the regional collaboration (i.e. through a high-level steering committee) and ensure that activities are scaled-up at the regional level in an integrated manner. The ASEAN Secretariat has a pivotal role in supporting the cross-sectoral collaboration and in bringing together all the relevant groups under the ASOEN and SOM-AMAF. The ASEAN Secretariat will also support and facilitate endorsement of decisions/actions of the collaboration up to the level of ASEAN Ministerial Meeting on the Environment (AMME) and ASEAN Ministers on Agriculture and Forestry (AMAF) as necessary. For this option, the proposed lead working group under the ASOEN is the AWGNCB; and for the SOM-AMAF are the ASEAN Sectoral WGs on crops, livestock, fisheries, and forestry (**Figure 1**).
**Option 3:** The ASOEN and SOM-AMAF will chair together the multi-sectoral ad hoc task force or steering committee, with ASOEN as the lead sectoral body. All the 10 AMS are each represented in the ad hoc task force/committee while maintaining their current involvement in the AWGNCB and relevant sectors of the SOM-AMAF. In addition to their active role in these WGs, the national focal points will also meet as a lose network to drive the multi-sectoral ad hoc task force/committee for agrobiodiversity at national level. They will decide and agree on the chairmanship and who will take the lead role in implementing and coordinating cross- and inter-sectoral activities at national level as well as represent the national agenda to the regional discourse. Likewise, they will also have to integrate and tackle the regional concerns at national level. The multi-sectoral ad hoc task force/committee will be jointly facilitated by ACB-SEARCA partnership and supported by the AWGNCB and other relevant sectors in the SOM-AMAF who will report the network’s activities and progress to ASOEN and AMAF. It is anticipated that the ad hoc network will be formed in 2020 and will be in existence until its purpose has been served. The workshop suggested a timeline for the ad hoc network consistent with the ASEAN Vision 2025 (Figure 2).
The summary of the two-day workshop was presented by Mr. Nheden Amiel Sarne, AHP Programme Coordinator of ACB. To cap the workshop, the organizers – ACB and SEARCA – conveyed their next actions in relation to the workshop outputs and agreed to circulate the report of the workshop, including the five-point proposed actions to AWGNCB/ASOEN for review and consideration. The outcomes will then be shared to relevant WGs under SOM-AMAF upon ASOEN guidance.

Thailand, as host of the workshop, expressed support in developing a cross-sectoral mechanism among and between relevant bodies in ASEAN for agrobiodiversity conservation and sustainable management.

As a way forward, the workshop suggested that the proposed actions be operationalised through the concerned ASEAN sectoral bodies.
Figure 1. Option 1 on the regional cross-sectoral coordination for implementing the proposed joint activities, whereby the ASEAN Secretariat serves as coordinator.

Figure 2. Option 2 on the regional cross-sectoral coordination for implementing the proposed joint activities, whereby a multi-sectoral ad hoc taskforce serves as regional and national coordinating body.
Field Visit to the Royal-initiated Wat Mongkol Chaipattana Area Development Project

Hosted by the MONRE, the participants were brought to Saraburi Province, which is a two-hour drive from Bangkok, for a field visit to the Royal-initiated Wat Mongkol Chaipattana Area Development Project. A short tour of the farm was conducted by the owner/manager of the land, followed by a brief discussion on how the project started and the principle of the New Theory was used in farming.

The New Theory is the most distinct and concrete example of the application of the Philosophy of Sufficiency Economy to the agricultural sector. His Majesty King Bhumibol initiated this theory to help Thai farmers who suffer from the impacts of economic crisis, natural disasters, and other unproductive natural conditions. The New Theory suggests that farmers apply the essential principles of the Philosophy of Sufficiency Economy, namely moderation, due consideration, and self-immunity to their practice of farming as this would shield them from the risks and impacts of globalisation and other uncontrollable factors in farming. 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 tune with the Philosophy of Sufficiency Economy, His Majesty introduced the unprecedented approach to manage farmland. Efficient water management was also developed to ensure year-around farming.

The participants learned about the approaches in New Theory agriculture, such as farmland division for optimum benefits, which also apportions the land for water storage, rice cultivation, multi-crop plantation, and built-up areas. The participants were also oriented on other principles and practices in New Theory agriculture, such as communal agriculture and the loan and credit outreach for farmers.
Annexes
Annex 1. Programme

ASEAN Multi-sectoral Workshop on Mainstreaming Biodiversity for Food and Agriculture
4 – 6 December 2018
Thailand

Activity Programme
BACKGROUND

The persistent pressures from a fast-growing population, urbanization, conversion of agricultural land to other uses, evolving patterns of consumption for food, increasing competition in global markets, and climate change are strongly driving the shift in agriculture from traditional and sustainable systems to more intensive approaches in the ASEAN region. Clearance for agriculture has been considered as one of the major drivers of forest losses in the region, which is at 0.7 percent annually. And with an expected 800 million people in the region in the next 50 years, the demand for natural resources and the rate of production of high-yielding crops and development of new breed of livestock is also expected to intensify more. While this type of agricultural development can meet the growing demand for food and market, it negatively affects long-term sustainability of agricultural systems, and consequently food security, human well-being, and livelihoods especially of people living in marginal lands. Thus, it is imperative to seek for approaches on food production that underpins biodiversity conservation in existing agricultural landscapes, or agrobiodiversity. However, there is little understanding of agrobiodiversity in ASEAN as well as its important link with ecosystem goods and services and their benefits to the society as a whole (ACB 2010). If there have been initiatives, policies, and partnerships on agrobiodiversity in the region, more work still needs to be done in terms of making these efforts and the crucial information known to support governments planning and decision-making. Existing mechanisms to integrate efforts are also lacking; the ASEAN policy and planning has not yet taken up the broader and interconnected agriculture-environmental challenges.

The call for a concerted action to address challenges in the realm of agriculture-biodiversity nexus, was recognized in 10th Conference of Parties of the CBD (COP 10), integrating agrobiodiversity into Strategic Plan for Biodiversity 2011-2020 and acknowledging FAO Strategic Plan for Biodiversity 2011-2017. This action was further reinforced by the CBD COP 13 which called for a multi-sectoral platform towards mainstreaming biodiversity in agriculture, “taking into account relevant standards and best practice guidance related to biodiversity” in this sector (CBD/COPXIII/3). Moreover, the Cancun Declaration on Mainstreaming the Conservation and Sustainable Use of Biodiversity for Well-being (Cancun, Mexico, 3 December 2010) called for multisectoral collaboration for the advancement of mainstreaming biodiversity. The Cancun Declaration also declares the nations’ commitment to undertake specific actions for the agriculture sector, among others (i.e. fisheries and tourism), tailored to national needs and circumstances and in line with other relevant international agreements, bearing in mind that the agriculture depends heavily on biodiversity and its components, ecosystem functions and services which biodiversity underpins, and that it also has an impact on biodiversity in various direct and indirect ways.

The collaborative effort on mainstreaming biodiversity in agriculture is also consistent with the ASEAN Socio-Cultural Community Blueprint 2025 particularly on Sustainable Management of Biodiversity and Natural Resources (Action Line C.1); and with the ASEAN Strategic Plan on Environment (ASPEN) 2016-2026, particularly: Strategic Priority 1: Natural Conservation and Biodiversity, Programme 3: Agricultural Biodiversity.

Concerted and coordinated efforts are therefore crucial in order to mainstream the relevant processes across all national and regional or international planning processes and across sectors. While it is recognized that national efforts are important, it is the consolidated regional planning and coordinating mechanisms that could be central in linking these national initiatives not only to the CBD processes but also to various specialized bodies of ASEAN (i.e. ASCC, AEC).

Mainstreaming agrobiodiversity is the first joint thematic initiative of the ASEAN Centre for Biodiversity (ACB) and the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) which proposes to facilitate inter-sectoral discussion towards a common understanding on the conservation and sustainable use of agrobiodiversity in the ASEAN. In July 2016, ACB and SEARCA signed a Memorandum of Understanding to pursue common objectives in biodiversity and agriculture as a result of the initial discussions from the Second ASEAN Conference on Biodiversity (ACB2016) held in February 20-16 in Bangkok. The first major activity of this cooperation was the Regional Workshop on Agrobiodiversity under the same theme of “Mainstreaming Biodiversity in Agriculture for Sustainable Development and Food Security in Southeast Asia”, held in September 12-14, 2017 in Chiang Mai, Thailand.

The Chang Mai workshop served as a stocktaking activity on the knowledge, practices, opportunities as well as gaps and challenges on agrobiodiversity management and conservation in the region. The workshop also discussed mechanisms for inter-sectoral coordination in line with the principal elements of the CBD's Programme of Work on Agrobiodiversity; such as Assessment, Innovations and Best Practices, Capacity Building, and Mainstreaming. The key recommendations included the following: (a) to draft the ASEAN Regional Action Plan on Agrobiodiversity Mainstreaming, Conservation and Sustainable Use 2017-2020 and its implementation under the CBD Programme of Work on Agrobiodiversity; (b) to support the integration and cross-sectoral and interdisciplinary collaboration for agrobiodiversity in ASEAN; (c) to develop and secure funding for interrelated projects that will support the CBD agenda on agrobiodiversity; and (d) to mainstream
agrobiodiversity into education sector, such as integrating it to possible initiatives under the ASEAN Work Plan on Education (AWPE) 2016-2020.

To put forward the key recommendations of the stocktaking workshop in Chiang Mai and provide structure to the initial mapping of opportunities for regional coordination among relevant sectoral bodies in the ASEAN, the multi-sectoral workshop is therefore being organized.

OBJECTIVES AND OUTPUT

The multi-sectoral workshop aims to provide a platform for the environment and agriculture sectors in the ASEAN Community to discuss and develop a common understanding of agrobiodiversity conservation and sustainable use. It will also serve as a venue to identify and define possible areas of collaboration and supportive processes among the relevant ASEAN sectoral bodies and development partners towards mainstreaming biodiversity in the agriculture sector.

The expected output of the workshop is an Agrobiodiversity Pilot Project which will include the recommended elements and structure of a multi- and cross-sectoral coordination mechanism among and between the relevant ASEAN sectoral bodies for mainstreaming, conservation, and sustainable use of agrobiodiversity in the ASEAN region.

The multi-sectoral workshop is being supported by ACE through the European Union-funded Biodiversity Conservation and Management of Protected Areas in the ASEAN (ECAMP) and the ASEAN Development Fund. The workshop is being hosted by the Ministry of Natural Resources and Environment (MoNRE) and the Ministry of Agriculture and Cooperatives (MOAC) of Thailand, and co-organized by ACBI and SEARCA.

TARGET PARTICIPANTS

The target participants of the workshop will be the representatives of the environment and agriculture ministries of the ASEAN Member States, relevant ASEAN sectoral bodies, ASEAN Secretariat, development partners, and relevant networks from the education and research sectors (i.e. SEARCA University Consortium). Priority will be given to those that are doing work on agrobiodiversity.

DATE AND VENUE

General Schedule: 4 – 6 December 2015

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
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<tbody>
<tr>
<td>4 December 2015</td>
<td>Workshop Day 1</td>
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<td>5 December 2015</td>
<td>Workshop Day 2</td>
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<td>6 December 2015</td>
<td>Field Trip</td>
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Venue: Amari Hotel Bangkok, 847 Petchburi Road Bangkok 10400 Thailand
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<tr>
<th>Day/Time</th>
<th>Agenda</th>
<th>Persons In-charge</th>
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<tbody>
<tr>
<td><strong>DAY 1 – December 4 (Tuesday)</strong></td>
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<tr>
<td>8:30 – 9:30</td>
<td>Registration</td>
<td>Secretary</td>
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<tr>
<td>9:30 – 10:00</td>
<td>Opening Ceremony</td>
<td>Dr. Nattanich Asvapoositkul Environmental Expert Office of Natural Resources and Environmental Policy and Planning (ONEP) Ministry of Natural Resources and Environment Thailand</td>
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<td></td>
<td>Encoos: Ms. Carmen Nyhria G. Rogel, Programme Specialist, SEARCA</td>
<td>Dr. Surmsuk Salakphetth Director General Department of Agriculture (DOA) Ministry of Agriculture and Cooperatives Thailand</td>
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<td>Dr. Theresa Muidits S. Lim Executive Director ASEAN Centre for Biodiversity (ACB)</td>
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<td></td>
<td>Dr. Fernando C. Sanchez, Jr. Governing Board Chair, Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA)</td>
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<tr>
<td>10:00 – 10:20</td>
<td>Photo Opportunity and Coffee Break</td>
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<tr>
<td></td>
<td><strong>PART I: Context of Mainstreaming Agricultural Biodiversity Cooperation for Food and Nutrition Security in Pursuit of Sustainable Development</strong></td>
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<td></td>
<td><strong>Session 1: Context of the Multi-sectoral Cooperation for the Mainstreaming Biodiversity for Food and Agriculture</strong></td>
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<td></td>
<td>Moderator: Ms. Carmen Nyhria G. Rogel, Programme Specialist, SEARCA</td>
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<tr>
<td>10:20 – 11:00</td>
<td>Background and Objectives of the Mainstreaming Initiatives</td>
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<td></td>
<td>ACB - CBD mainstreaming strategies</td>
<td>Mr. Clarissa C. Arida Director Programme Development and Implementation (PDU) ACB</td>
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<td>Mainstreaming Biodiversity under the BCAMP Project</td>
<td>Dr. Robert Mathir Technical Assistance Team Leader BCAMP Project</td>
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<td>SEARCA – ISARD and other relevant multi-sectoral frameworks</td>
<td>Dr. Pedro M. Orendo Program Head for Research and Development SEARCA</td>
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<tr>
<td>11:00 – 11:10</td>
<td>Open forum</td>
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<td>11:10 – 12:30</td>
<td>Global and Regional Mainstreaming Initiatives</td>
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<td>1. Biodiversity International</td>
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<td>Day/Time</td>
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<td>Dr. Danny Hunter&lt;br&gt;Senior Scientist&lt;br&gt;Biorevity International&lt;br&gt;UN-FAO representative</td>
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<td>12:30 – 12:40</td>
<td>Open Forum</td>
<td>Mr. Dazzle Labays&lt;br&gt;CEO Forum Facilitator&lt;br&gt;NTP-F-EP</td>
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<td>12:40 – 14:00</td>
<td>Lunch Break</td>
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<td>14:00 – 14:40</td>
<td><strong>Key Results and Messages of the Initial Stocktaking Workshop in Chiang Mai, 2017</strong>&lt;br&gt;Results of the preliminary survey on the status of agrobiodiversity in the ASEAN region&lt;br&gt;Results and outcomes of the regional stocktaking workshop in Chiang Mai, 2017</td>
<td>Dr. Wayne Nelies&lt;br&gt;Visiting Scholar&lt;br&gt;Chulalongkorn University School of Agricultural Resources&lt;br&gt;Dr. Filiberto Polisano, Jr.&lt;br&gt;Programme Specialist&lt;br&gt;ACB</td>
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<td>14:40 – 14:50</td>
<td>Open Forum</td>
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<td><strong>Session 2: Sharing of regional and national efforts on mainstreaming of biodiversity for food and agriculture or agrobiodiversity in various relevant key sectors</strong>&lt;br&gt;<strong>Moderator:</strong> Bts. Corazon De Jesus, Jr., Programme Specialist, ACB</td>
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<td>14:50-15:50</td>
<td><em>Agrobiodiversity or related issues in:&lt;br&gt;1. ASEAN Strategic Plan on Environment (ASPEN)&lt;br&gt;2. ASEAN Guidelines for Agroforestry Development</em></td>
<td>Ms. Revina Indra Putri&lt;br&gt;Officer&lt;br&gt;Environment Division/Sustainable Development Directorate&lt;br&gt;ASEAN Secretariat&lt;br&gt;Dr. Dian Sukrajaya&lt;br&gt;Senior Officer&lt;br&gt;FAO, Agriculture and Forestry Division, Sectoral Development Directorate&lt;br&gt;ASEAN Secretariat</td>
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<td>15:50-16:00</td>
<td>Open Forum</td>
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<td>16:00 – 16:15</td>
<td>Coffee break</td>
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<td>17:30 – 17:40</td>
<td>Open Forum</td>
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<td>17:40 - 17:55</td>
<td>Wrap-up of Day One</td>
<td>Dr. Filiberto A. Politisco, Jr.</td>
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<td>Programme Specialist</td>
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<td>18:30 – 20:30</td>
<td>Welcome Dinner</td>
<td>Hosted by ONEP, Thailand</td>
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<td><strong>DAY 2 – December 5 (Wednesday)</strong></td>
<td><strong>PART II: ASEAN Multi-Sectoral Framework for Collaboration on Mainstreaming Agrobiodiversity</strong></td>
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<tr>
<td>8:30 – 9:00</td>
<td>Registration</td>
<td>Secretary</td>
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<tr>
<td>9:00 – 9:50</td>
<td>Session 3: Workshop on the identification and discussion of options and recommendations towards mainstreaming biodiversity for food and agriculture through effective inter-sectoral linkages and collaboration</td>
<td>Introduction from:</td>
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<td>Dr. Percy E. Sajise</td>
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<td></td>
<td></td>
<td>Senior Fellow, SEARCA</td>
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<td></td>
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<td>Honorary Research Fellow, Biodiversity</td>
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<td></td>
<td>International</td>
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<td></td>
<td></td>
<td>Adjunct Professor, UPLB School of Environmental Science and Management</td>
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<td>All participants</td>
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<td>9:50 – 10:10</td>
<td>Open Forum</td>
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<td>10:10 – 10:25</td>
<td>Coffee Break</td>
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<td>10:25 – 12:00</td>
<td>Session 4: Workshop on the Proposed Multi-Sectoral Framework and Action Plan on Mainstreaming Biodiversity for Food and Agriculture</td>
<td>All participants</td>
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<td>Objectives:</td>
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<td>1. Assess the proposed Multi-Sectoral Framework and Action Plan on Mainstreaming Biodiversity for Food and Agriculture based on national and regional contexts for implementing such plan</td>
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<td>2. Propose an organisational set-up for coordination at the regional and national levels especially on the Options proposed in the Working Paper</td>
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<td>12:00 – 13:30</td>
<td>Lunch Break</td>
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<td>13:30 – 14:30</td>
<td>Continuation of Session 2</td>
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<td>14:30 – 16:00</td>
<td>Plenary discussion of the results of the workshop</td>
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<td>16:00 – 16:15</td>
<td>Wrap-up of Session 2</td>
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<td>16:15 – 16:30</td>
<td>Synthesis and Way Forward</td>
<td>Mr. Nhoodan Amiel D. Gano</td>
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<td>AHP Programme Coordinator</td>
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<td>ACB</td>
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<td>16:30 – 17:10</td>
<td>Closing Messages</td>
<td>Ms. Clarissa C. Arica</td>
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<td>Director, PDI</td>
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<td>Persons In-charge</td>
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</table>
|          |        | Dr. Pedro M. Crenceio  
|          |        | Program Head for Research and Development  
|          |        | SEARCA  
|          |        | Representatives of CCA Thailand  
|          |        | Dr. Nattanich Asvapoositkul  
|          |        | Environmental Expert  
|          |        | OMEP, Thailand  
| 17:10 – 17:15 | Announcement for the Field Trip and other Logistics | Secretariat |

**DAY 3 : December 6 (Thursday)** - Field trip to The Royal-initiated Wat Mongkol Chaiapattana Area Development Project, Suraburi Province, Thailand

- **08:00** Depart from the hotel
- **10:30 – 12:00** Visit Outstanding Local Farm
- **12:00 – 13:00** Lunch Break
- **13:00 – 15:00** Observe The Royal-initiated Wat Mongkol Chaiapattana Area Development Project
- **16:00** Arrive at Bangkok

*7 December 2018 – Departure of participants*
Annex 2. Directory of Participants

ASEAN MEMBER STATES DELEGATES

CAMBODIA
1. Mr. Keat Bunthan
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13. Mr. Tossapon Piantanakulchai  
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Annex 3A. ACB-CBD Mainstreaming Strategies

ACB – CBD MAINSTREAMING STRATEGIES

ASEAN Multi-sectoral Workshop on Mainstreaming Biodiversity for Food and Agriculture
4 – 6 December 2018
Thailand

Cancun Declaration on Mainstreaming the Conservation and Sustainable Use of Biodiversity for Well-Being

High Level Meeting of Ministers and other heads of delegation on the occasion of the UN Biodiversity Conference, Cancun, Mexico, 2nd and 3rd December 2016.

The Cancun Declaration focuses on the need to increase actions to mainstream biodiversity in various sectors.

Cancun Declaration on Mainstreaming the Conservation and Sustainable Use of Biodiversity for Well-Being

- It is essential to live in harmony with nature and mother earth, as a fundamental condition for the well-being of all life, which depends on the conservation and sustainable use of biodiversity, and the ecosystem services it underpins.

- Biodiversity offers solutions to the pressing development and societal challenges that the world community is currently facing.
CANCUN DECLARATION ON MAINSTREAMING THE CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY FOR WELL-BEING

• We need to make additional efforts to ensure the effective implementation of the Convention on Biological Diversity, the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets, and the Cartagena and Nagoya Protocols, and facilitate closer collaboration with other initiatives adopted in international fora related to sustainable development, trade, agriculture, fisheries, forestry and tourism, among other sectors.

CANCUN DECLARATION - COMMITMENT AND ACTIONS

• Ensure that sectoral and cross-sectoral policies, plans and programmes, as well as legal and administrative measures and budgets established by our governments, integrate in a structured and coherent manner actions for the conservation, sustainable use, management, and restoration of biological diversity and ecosystems.

CANCUN DECLARATION - COMMITMENT AND ACTIONS

• Encourage sectors that depend or have an impact on biodiversity to adopt integrated approaches for its conservation and sustainable use, and the fair and equitable sharing of benefits arising from the use of genetic resources.

• Promote the conservation, sustainable use, and where necessary, restoration of ecosystems as a basis for achieving good health, clean water and sanitation, food security, the reduction of hunger and improvement of nutrition, poverty eradication, prevention of natural disasters, resilient, sustainable and inclusive cities and human settlements, and climate change adaptation and mitigation.
CANCUN DECLARATION - COMMITMENT AND ACTIONS

Support sustainable production and consumption throughout value chains, the safe and sustainable application of technologies, and the phasing out of harmful incentives and strengthening of positive incentives.

Bearing in mind that the agriculture, forestry, fisheries and tourism sectors heavily depend on biodiversity and its components, as well as on the ecosystem functions and services which biodiversity underpins, and that these sectors also impact on biodiversity in various direct and indirect ways, we are also committed to undertake specific actions for each sector as described in the guidance annexed to this Declaration.

Guidance for Mainstreaming Conservation and Sustainable use of Biodiversity in the Agriculture, Forestry, Fisheries and Tourism Sectors (Annex to the CANCUN DECLARATION)

Agriculture, crop and livestock:

- Ending hunger, achieving food security and improving human nutrition are global development objectives. A major challenge over the coming years will be increasing agricultural production to adequately feed the growing world population. Biodiversity is the basis of agriculture as it is at the origin of all crops and domesticated livestock and the variety among them. Essential functions such as nutrient cycling, decomposition of organic matter, soil formation and rehabilitation, pest and disease regulation, and pollination that benefit crop and livestock production are maintained by ecosystems which are critical to sustain food production, nutrition and, therefore, human well-being. Meeting global food demands in a sustainable way is achievable, but it will require significant actions to change some existing policies and practices through:

Actions

1. The promotion of sustainable agriculture for food security, human nutrition, health, economic development and environmental protection;

2. The adoption of a holistic integrated view and assessment of ecosystems and of the interlinkages between agriculture and biodiversity;

3. The use of integrated and cross-sectoral planning processes, reducing inefficiencies, and increasing productivity including through ecological intensification, when appropriate, while avoiding negative impacts on terrestrial, marine, coastal and inland ecosystems and its associated biodiversity;

4. The conservation and cultivation of native varieties, as well as farmers' landraces, locally adapted breeds and underutilized species, including those threatened by production intensification;
5. Implementation of the Global Plans of Action on Animal, Plant and Genetic Resources for Food and Agriculture of the Food and Agriculture Organization of the United Nations;

6. Effective management and conservation of pollinators;

7. The recognition, conservation and sustainable management of soil as a living ecosystem and as one of the foundations of agriculture and food security, and the advancement of the understanding and conservation of its biodiversity;

8. The use of measures and incentives to promote diversified agro-ecological systems and the designation of agricultural biodiversity conservation sites, such as the Globally Important Agricultural Heritage Systems of the Food and Agriculture Organization of the United Nations;

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9. The prevention of agricultural pollution, and the efficient, safe and sustainable use of agrochemicals, fertilizers and other agricultural inputs;

10. The safe and sustainable use of appropriate technologies, and the integrated, efficient and sustainable management of energy, water and soil resources;

11. The promotion of the use of biodiversity in agricultural systems to control or reduce pests and diseases; and

12. Sustainable consumption and production patterns, including more diversified diets based on a broader range of biodiversity, as well as the promotion of best practices in post-harvest agricultural product management in order to reduce waste and loss of food, among other measures.
CBD COP 13
Decision XIII/3

- 13th Conference of the Parties to the Convention on Biological Diversity, Cancun, Mexico, 2016
- Considered the **mainstreaming of biodiversity** with a particular focus on the **agriculture, forestry, fisheries and tourism sectors**.
- COP decided to consider, at its fourteenth meeting, the mainstreaming of biodiversity in the sectors of energy and mining, infrastructure, manufacturing and processing, as well as health.

### ASEAN Regional Workshops on Mainstreaming

- Regional Meeting on Mainstreaming Biodiversity into Development Sectors in ASEAN Member States (ASEAN-India Green Fund: ASEAN-India Cooperation)
- Asia Multi-Actor Dialogue Seminar to Build Social-ecological Resilience through the Incorporation of Ecosystem-based Solutions in Nationally Determined Contributions (SwedBio)
- Regional Workshop to Address Inter-linkages between Human Health and Biodiversity in ASEAN (CBD Secretariat, WHO, UNU IIGH)
- **Mainstreaming Biodiversity in Agriculture for Sustainable Development and Food Security in Southeast Asia**

### Regional Meeting on Mainstreaming Biodiversity

- **Raise the awareness of other non-biodiversity related agencies in the AMS on the importance of biodiversity conservation**
- **Develop indicative plans for mainstreaming NBSAPs across key sectors in AMS**
- **Enable the identification by these sectoral agencies of the various ways how the mainstreaming of NBSAPs or biodiversity in their respective development plans**
Climate Change Dialogue - Objectives

- Provide a setting for open discussions on existing approaches and challenges as seen by the various participants, and opportunities for improved policy making and implementation.
- Identify synergies among potential ecosystem-based approaches for delivering benefits related to multiple NDC objectives.

Health and Biodiversity - Objectives

- Mainstream biodiversity and health linkages in relevant national plans, policies and programmes.
- Exchange national experiences and best practices on mainstreaming biodiversity and health interlinkages.
- Identify possible joint activities to achieve human health and biodiversity co-benefits for consideration in NBSAPs and national health plans.

Health and Biodiversity - Enabling Strategies

- Develop a targeted communication and advocacy plan for the ASEAN region to target different groups to achieve a better understanding of the linkages between biodiversity and human health;
- Mobilize financial resources to implement actions;
- Maximize opportunities of integrating specific joint initiatives addressing the interlinkage of biodiversity and health at national and local levels.
Mainstream biodiversity and health linkages into policies, plans and strategies, including national policies for health and national biodiversity strategies and action plans, in line with the objectives of the 2030 Agenda for Sustainable Development and regional and national development agendas.

*Sharm El Sheik Declaration, HLS @ COP14*
Annex 3B. Mainstreaming Biodiversity in Agriculture in the BCAMP Project

Mainstreaming Biodiversity in Agriculture in the BCAMP Project:

Dr. Robert J. Mather
Technical Assistance Team Leader
EU BCAMP Project
ASEAN Centre for Biodiversity

Why mainstreaming in ASEAN?

- 3% of the world’s total surface, but
- 20% of the world’s mammal and bird species and high rates of endemism

Biodiversity threatened by development (incl. Agriculture)

Why mainstreaming in agriculture?

- Food production accounts for 70% of biodiversity loss globally
- Soil holds a quarter of all biodiversity, but one third of agricultural soils are degraded
- Agriculture causes almost three-quarters of all forest loss in the tropics
- Agriculture uses 70% of all freshwater withdrawals globally
- 75% of all fruit and seed crops for human consumption depend on pollinators
Agriculture-Food-Health Nexus

• **400,000** known plant species
• **6,000** used for food at some time
• **200** now account for global food supply
• **3** plants provide **50%** of calories (rice, wheat, maize)
• **5** animals provide **33%** of all protein intake (cattle, sheep, goats, pigs, chickens)

Agriculture-Food-Health Nexus

• Adequate intake of micro-nutrients essential for health can only come from dietary diversity
• Globally **1 billion** people are obese; Type 2 diabetes costs almost **$1 trillion**
• Poorly developed markets for underutilized locally adapted nutrient rich species contributes to malnutrition and poverty

5 types of biodiversity to mainstream

• Farm production biodiversity – the range of (domesticated and wild) species and varieties actually grown and raised on the farm and harvested by farmers
• Biodiversity on which farm production depends – soil biodiversity, pollinators, biological pest control
• Other agro-ecosystem biodiversity - all the other species that can live on/pass through/make use of the farm at some time because of the way it is managed, whether or not they are necessary to sustain the agro-ecosystem
• “Downstream” biodiversity – including species that are impacted by off-site impacts of agricultural practices – run-off of agricultural chemicals, soil erosion, etc.
• “Upstream” biodiversity crop and livestock wild relatives which provide important genetic reservoirs for future breeding of new varieties, whether or not they are located close to the farm or in far away areas
What needs to be done?

- Evaluate good biodiversity-enhancing on-farm land-use practices in agriculture, document and disseminate them, and develop policies that promote/support them
- Incentivize farmers - show how you can profit from conserving biodiversity
- Build capacity to analyze nutritional composition of indigenous food species
- Conduct market research into underutilized species
- Promote/stimulate demand for production and consumption of indigenous species and local varieties to conserve agricultural biodiversity and improve nutrition (food diversity in school and hospital meals and school/hospital gardens; farmers’ markets, food events, celebrity chefs, etc.)
- Share and learn from global best practice in biodiversity mainstreaming in agriculture and food sector policies and plans (e.g. Mexico)

Best Practice From Mexico 1

The Ministry of Agriculture, Livestock, Rural Development Fisheries and Food (SAGARPA) defines mainstreaming as:

“The inclusion of conservation and sustainable use of biological diversity into the plans, programs and policies of the productive sectors......an understanding between sectors that recognizes biodiversity as an essential part of the productive sector’s operation, to achieve healthy and resilient ecosystems”

Best Practice From Mexico 2

SAGARPA Vision:

By 2022, the agriculture sector in Mexico effectively integrates the sustainable use and conservation of biodiversity into its plans programs and actions, in order to guarantee its contributions to the food security and development of the country, and adding, in turn, to the welfare of society and to the conservation and sustainable use of biodiversity
**Best Practice From Mexico 3**

SAGARPA Strategy for Mainstreaming Biodiversity in Agriculture Sector 2016-2022

- Highlights importance of cross-sectoral collaboration
- Addresses need to design incentives for sustainable practices
- Encourages use of alternative technology
- Established the Centre for Biodiversity mainstreaming (CIB) within the ministry

**Best Practice From Mexico 4**

Centre for Biodiversity Mainstreaming (CIB) in SAGARPA:

- Promotes valuation of biodiversity, ecosystem services and sustainable value chains in agriculture
- Identifies and documents advances in mainstreaming and further promotes them
- Builds capacity in soil, water, biodiversity, sustainable use and climate change

**The Situation in ASEAN**

- Agriculture is a major land-use
- AMS are top global exporters of several agricultural commodities
- Forest clearance, excessive chemical use, soil erosion, farmer-wildlife conflict are all widespread issues
- Sustainable agriculture systems, agroforestry, organic farming, growing of indigenous food crops, are still niche areas within agriculture sector
Agriculture in AMS NBSAPs

- Indonesia: no specific reference to agrobiodiversity, indicates biodiversity not mainstreamed into the agriculture sector

- Lao PDR: notes the establishment of a National Agro biodiversity Program as a key development

- Philippines: agrobiodiversity is thematic program

- Thailand: Master Plan for Integrated Biodiversity Management includes a measure to conserve biodiversity in agricultural areas

The Way Forward

ASEAN with ASEAN Centre for Biodiversity supports mainstreaming of biodiversity through the EU-funded BCAMP Project

- Convening regional meetings on mainstreaming

- Effective use of Biodiversity and Ecosystem Services Assessments and Economic Valuation research

- Increased consideration of Key Biodiversity Areas in planning

- Review and revision of legislation & implementing regulations

For more information, log on to www.aseanbiodiversity.org

Championing Biodiversity Conservation in the ASEAN Region

ASEAN 50 Philippines 2017 United Nations Decade on Biodiversity
Annex 3C. Multi-sectoral Cooperation: Experiences from Piloting the ISARD Model

Multi-sectoral Cooperation: Experiences from Piloting the ISARD Model

What is ISARD?

- The theme of SEARCA’s 10th Five-Year Plan (FYP) which stands for Inclusive and Sustainable Agricultural and Rural Development (ISARD)
- It serves as the primary basis for launching the Piloting and Upscaling Effective Models for ISARD program – an initiative in demonstrating effective agricultural systems, or ISARD models, through needs-based interventions and collaboration with rural communities, partner agencies and other relevant organizations.
Pilot ISARD Project Framework

Prospects for Mainstreaming Biodiversity through ISARD

- Pilot testing agricultural and rural development models based on agreed and pre-determined ecosystem boundaries using the ridge to reef approach or landscape continuum
  - Beneficiaries of agricultural support were chosen based on landscape ecologies of upland, lowland, coastal, and marine ecosystems, including ecotones
  - Involvement of local government in community level activities within their jurisdiction and working with people on watershed or micro watershed lake ecosystem including its tributaries
- Developing existing mechanism for assistance and advisory services to the stakeholders: quality seedlings, production techniques, processing of crops, aquaculture, and rainforestation
  - Access to local planting materials for crops, tree species seedlings for trees and ingslings/ortilapia are made available for people
  - Access to protective structures or materials for local fabrication of protective structures
Project Accomplishments

- Improvement of Income
- Production and Productivity Enhancement
- Human Capital Development
- Increasing Self-reliance
- Linkage and Networking with Institutions
- Learning Organization

Ways forward

- Institutionalization
- Scaling
- Collaboration
Thank you!

www.searca.org
Annex 3D. Biodiversity, Diets and Nutrition: Mainstreaming Solutions for Healthy Food Systems

Bioversity International’s mainstreaming experience

WORKING WITH PARTNERS AROUND THE WORLD
Can biodiversity improve nutrition outcomes?

- CBD: Framework for a Cross-Cutting Initiative in 2006 first recognized the links between biodiversity, food, and nutrition

- Collaboration with CBD/WHO/UN Environment

State of Knowledge Review
Chapter 6 – Biodiversity and Health
What is the Biodiversity for Food and Nutrition Program?

- Funded by the Global Environmental Facility (GEF), led by Brazil, Kenya, Turkey, Sri Lanka executed by Bioversity International, with support from FAO and UN Environment
- Biodiversity conservation through use
- Exploring the potential of nutrient-rich, underutilized crops

Why Biodiversity for Food and Nutrition?

- Reliance on staples for agricultural production and consumption
- Environmental degradation
- Plateauing yields
- High cost of diet-related diseases
- Yet, all target countries are rich in nutritious, under-utilised biodiversity
Benefits of Indigenous Biodiverse Species

Available
Affordable

Production → Local Biodiversity → Consumption

Acceptable
Nutritious

Locally-adapted crops can resist pests, drought, and climate change.
Can be harvested either in the wild, or cultivated by smallholder farmers and sold at a reasonable price.

Often connected to traditional medical or cultural knowledge, heritage.
Typically high in micronutrients contributing to a healthy balanced diet.

BFN Approach

- Context and partner-based approach
- Demonstrating value of nutrient-rich species
- Mainstreaming biodiversity across sectors
- Awareness
Policy Framework

Food Composition - Brazil

~ 70 Species selected from Plants for the Future (~800 total, 110 edible)

1 – INPA, UFPA e Inst. Paule Martins
2 – UFC e UECE
3 – UFG
4 – UNIFESP e Univ. Mackenzie
5 – UFRGS
Brazil

- Collaboration with universities, nutritionists, Embrapa
- Online Database: www.sibbr.gov.br
- Publications: Plants for the Future book series, species booklets

Kenya

- Partner with universities
- Contributing to Kenyan Food Composition Table

**Figure 4:** Five green leafy vegetables with levels of vitamin A (expressed in β-carotene equivalent) and iron content compared to A: lettuce (Lactuca sativa); B: Ethiopian kale (Brassica carinata); C: spinach (Basella alba); D: jute mallow (Chorchorus olitorius); E: spider plant (Cecocynanda); F: amaranth (Amaranthus dubius).

Source: BFN Kenya data and West African Food composition Table (2012)
Sri Lanka

- 58 cultivars and 28 varieties
- Building national research capacity through partners
- Compiling and validating traditional knowledge

Fe & Fiber

Mg/100g raw rice
Comparative fiber and iron content of traditional Sri Lankan rice varieties (Oryza sativa)

<table>
<thead>
<tr>
<th>Variety</th>
<th>Fiber</th>
<th>Iron</th>
</tr>
</thead>
<tbody>
<tr>
<td>White rice</td>
<td>2.5</td>
<td>0.7</td>
</tr>
<tr>
<td>Ouwara</td>
<td>2.2</td>
<td>1.7</td>
</tr>
<tr>
<td>Kuttala</td>
<td>3.5</td>
<td>2.7</td>
</tr>
<tr>
<td>Malab thanali</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Khinchu</td>
<td>3.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Rokala</td>
<td>3.5</td>
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</tr>
<tr>
<td>Suda</td>
<td>3.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Kulu heena</td>
<td>3.5</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Sources: BNF Sri Lanka, Indian Food Composition Tables 2017 (Longueuil et al.)

Turkey

- Compiling data and recipes on wild edible plants
- Publication in the FAO/INFOODS database

Fe

mg/100g fresh, raw
36.9% of women of reproductive age suffer from iron deficiency in Turkey.

Ca

mg/100g fresh, raw

Z 11 12 13
Lettuce Cherry Celery

Z 6 5
Parsley Watercress

Z 213 220 239
Spinach Swiss chard kale

Z 138 143 155 140 240
Fathead tomatoes Purslane Knot grass Farwell Wild lettuce
Brazil

- Public policy signed by Brazilian Ministry of Environment and Ministry of Social Development.
- **Sociobiodiversity Ordinances** are the first to define/support nutritionally important native species
- Facilitates inclusion in institutional procurement and offers more opportunities for smallholder producers

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Kenya

- **Busia Country Biodiversity Conservation Policy (2018)**
- First biodiversity policy in all of Kenya’s 47 counties
- Convened inclusive cross-sectoral taskforce to mainstream biodiversity, for example, in procurement
- Offers a reference point for other counties/regions to develop their own similar policies

Ministry of Agriculture, Environment, Health, Education, Public Stakeholders
Sri Lanka

- Recommendations for Sri Lanka’s National Biodiversity Strategy and Action Plan drawing on BFN experience across the 4 countries
- New marketing options and guidelines for agrobiodiversity

Brazil

- Recognition of biodiversity through sustainable gastronomy, recipe books, fairs, TV shows, international symposiums, education
- Online E-Learning Course (www.b4fn.org)
Kenya

- Farmer Business School: training, linking farmer groups directly to schools
- Home-Grown School Feeding

Turkey

- Alaçatı Herb Festival: annual celebration of regional culture including the tradition of collecting and cooking wild edibles.
- Competitions, foraging tours, food and herb vendors
- Platform to share knowledge of biodiversity’s nutritional value to thousands of visitors
Sri Lanka

- Hela Bojun “True Sri Lankan Taste” 19 market outlets
- Women trained through the Department of Agriculture
- By cooking and selling indigenous produce, women support their households, feed their community, and generate tourism
- Street Drama, Website, Food Festivals

Summary of BFN

- 195 species’ information added to FAO/INFOODS
- Benefits: smallholder farmers, climate change resilient ecosystems, consumer diets, indigenous communities,
- Contributions to Aichi Targets and SDGs
- Global outputs: Toolkit (www.b4fn.org), forthcoming publications
- Upscaling and sharing innovative approach - involve diverse sectors and stakeholders in transforming food systems
Annex 3E. Regional Initiatives on Mainstreaming Biodiversity for Food Security, Agriculture, and Forestry

Regional Initiatives on Mainstreaming Biodiversity for Food Security, Agriculture, and Forestry

DAZZLE LABAPIS, NTFP-EP Asia
ASEAN Multi-sectoral Workshop on Mainstreaming Biodiversity for Food and Agriculture
4-6 December 2018, Thailand

Outline of the Presentation

I. About NTFP-EP, Who we are, what we do
II. Regional Initiatives on Strengthening Engagement in ASEAN on mainstreaming Biodiversity for Food Security, Agriculture and Forestry
   A. Mainstreaming through Social Forestry and Climate Change
   B. NTFP-EP’s Mainstreaming Initiatives
   C. Mainstreaming through expanding and strengthening network and alliances
III. Way Forward
The Non-Timber Forest Products – Exchange Programme (NTFP-EP) is a collaborative network of over 100 non-governmental organizations (NGOs) and community-based organizations (CBOs) working with forest-based communities to strengthen their capacity in the sustainable management of natural resources.

We envision self-empowered generations of forest-dependent communities, contributing to and benefiting from sustainably-managed forested landscapes and ecosystems, knowledge and cultural traditions.
A. Mainstreaming through Social Forestry and Climate Change - ASFCC and the AWG-SF Institutional Channels

- The ASEAN-Swiss Partnership on Social Forestry and Climate Change (ASFCC) aims to contribute to the ASEAN Mandate and Policy Framework through support for the ASEAN Working Group on Social Forestry (AWG-SF/previously known as ASFN) and the ASEAN Multisectoral Framework on Climate Change towards Food Security (AFCC).

- Addresses interlinked issues of food security, poverty and climate change particularly in forested landscapes in Southeast Asia through cooperation and partnership programme activities with ASEAN Member States (AMS) and links with members from the civil society, research organizations, academia, private sector and other experts.
Institutional Channels
ASFCC Support Structure

- ASEAN
  AEC/MAF
  ASFCC Senior Adviser
- SEARCA
  Strategic Response Fund to support AMS
- RECOFEC
  Action, Research, Capacity Building
- NTFP-EP
  Civil Society Engagement, Enterprise Development Support
- AMSC-SEF
  (AMS and Secretariat)
  Coordination, Networking, Strategic Communication, Analytical Support
- CIFOR
  Research
- ICRAF
  Research, Policy Dialogue

NTFP-EP’s Mainstreaming Initiatives

1. Knowledge Exchange and Capacity Building on Livelihood and Community Enterprises that are biodiversity/environment friendly
2. Civil Society Engagement
3. Regional Policy Support
Knowledge Exchange and Capacity Building on Livelihood and Community Enterprises that are biodiversity/ environment friendly

- Documentation of traditional ecological knowledge/indigenous knowledge systems and practice, wild foods
- Development and testing of NTFP harvest protocols
- Knowledge exchange on rotational farming systems/ agrobiodiversity products

Knowledge Exchange and Capacity Building on Livelihood and Community Enterprises that are biodiversity/ environment friendly

Knowledge Exchange and Capacity Building on Enterprise through the EXCEED Program

- NTFP-EP, through its training and advisory programme, EXCEED (Expanding Community Enterprise and Economic Development) has been able to support hundreds of Community Forestry Enterprises (CFEs) through the participation of producers, civil society representatives and government personnel in capacity building offerings provided.
Organizing wild food and sustainable livelihood festivals

- Panen Raya Nusantara (PARARA), the Great Harvest of the Archipelago, is the cheerful expansion of the Sustainable Livelihoods Initiative and models organized by NTFP-EP in collaboration with 26 Indonesian civil-society organizations and the support of ASFCC.

- provided brand-development support and a space for marketing for over 100 community producer groups.

- Raised over 40,000 USD for community enterprises in Indonesia

PARARA highlights. Community members from Papua and Kalimantan sharing their culture through traditional dances (photo by Wahyu Widhi, Landscape Indonesia)
Civil society (CSOs) and community-based organizations (CBOs), indigenous peoples’ network and membership organizations present in ASEAN active in the forestry sector in the implementation of capacity building, awareness raising, and technical support in programs on:

**CSO Forum**

**THMATIC GOALS**

- **COMMUNITY ECONOMY AND LIVELIHOODS**
  - Sustainable community forest-based livelihoods in ASEAN secured and self-reliant CFs effectively engaging and equitably benefitting from trade through mainstreaming in ASEAN economic policies & programs.

- **GOVERNANCE MECHANISMS**
  - Realization of self-mobilization of indigenous peoples and local communities and their organizations towards participatory and effective forest governance.

- **SAFEGUARDS**
  - Recognition of customary forests and the adoption and implementation of FIC in line with the UNDRIP as a minimum standard as well as development of safeguard policies, measures, and mechanisms on social forestry.

- **FOREST TENURE AND ACCESS RIGHTS**
  - Government establishing and enforcing laws and regulations that ensure and protect indigenous peoples and local communities’ access and tenure rights to their community-managed forest and customary lands.
3. Mainstreaming through Regional Policy Support

- Policy and Advocacy Forums – Regional Policy Forum on NTFPs, NDCs and Social Forestry
- CSO Forum contributes to policy development at the regional level - the ASEAN Guideline on Agroforestry, Guidelines for Responsible Investment on Food, Agriculture and Forestry, among others
- CSO Forum recommendations elevated at the regional level through its engagement and contribution to the ASEAN Working Group on Social Forestry
B. Mainstreaming through expanding and strengthening network and alliances

- ICCAs stands for **Territories and Areas Conserved by Indigenous Peoples and Local Communities**
  - The oldest form of ‘conservation’ on earth
  - Closely related to peoples’ livelihoods, culture and identity
  - Successful examples of collective decision-making about nature
  - Found everywhere
  - Have thousands of local names
  - Extremely diverse

---

**Essential characteristics that define an ICCA**

1. Indigenous Peoples or local community has a close connection to the area
2. They are the major decision-maker and have the capacity to develop and enforce regulations
3. Their decision and efforts lead to conservation of biodiversity, ecological functions and cultural values
B. Mainstreaming through expanding and strengthening network and alliances

- NTFP-EP convenes the ICCA Southeast Asia Regional Learning Network
- The network facilitates and supports exchanges among communities and their key partners for mutual learning for enhanced awareness and capacities to recognize and support ICCAs

IV. Way Forward

- Exploring social forestry’s broader context – to include community protected areas, ancestral domains, and ICCAs and its contribution to the Aichi Targets and the ASEAN Multi-sectoral Framework for Climate Change
- Expanding NTFP-EP/CSO Forum’s work and reach beyond existing regional engagements – working across different sectors with focus on biodiversity (e.g. ASOEN)
- Engage partner organizations and institutions to conduct cases, documentation of social forestry and agrobiodiversity connections and impacts
For more information about the NTFP-EP, get in touch via:

- www.ntfp.org
- facebook.com/ntfpep
- @ntfp_ep
- info@ntfp.org

Thank you for your kind attention
Overview:
ASEAN Cooperation on Environment Framework

ASEAN Secretariat

ASEAN Multi-sectoral Workshop on Mainstreaming Biodiversity for Food and Agriculture
4-6 December 2018
Bangkok, Thailand

- Charts the path for ASEAN Community building over the next ten years
- A roadmap for ASEAN to realise further consolidation, integration and stronger cohesiveness as a Community
RECENT INTERNATIONAL FRAMEWORKS AND GLOBAL DISCOURSES HAVE INFORMED THE DEVELOPMENT OF THE ASCC BLUEPRINT

SUSTAINABLE DEVELOPMENT GOALS

UN World Conference on Disaster Risk Reduction 2015 Sendai Japan

PARIS2015 COP21·CMP11

WORLD HUMANITARIAN SUMMIT

ASEAN 2025: FORGING AHEAD TOGETHER
The ASEAN Socio-Cultural Community (ASCC) is committed to lifting the quality of life of its people by putting their welfare and well-being at the heart of its activities. To promote better quality of life for the peoples and their communities in ASEAN, the Member States cooperate on a wide range of areas such as:

- Culture and Information
- Education, Youth and Sports
- Social Welfare and Development
- Gender
- Labour
- Civil Service
- Rural Development and Poverty Eradication
- Environment
- Disaster Management
- Humanitarian Assistance
- Health

ASCC SECTORAL BODIES

Sectoral Bodies under ASCC:
- 15 Ministerial Bodies
- 16 Senior Officials Bodies
- Working Groups /Technical Working Groups/ Task Forces

Created Platforms:
- ASEAN Children’s Forum
- ASEAN Social Work Consortium
- ASEAN Woman Entrepreneurs’ Network
- ASEAN University Network

ASEAN Centres and Partner Institutions
- ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Partnership Group (www.aademrpartnership.org)
- ASEAN Centre for Biodiversity (www.aseanbiodiversity.org)
- ASEAN Specialised Meteorological Centre (ASMC) (asmc.asean.org/home/)
- ASEAN Resource Centres under ASEAN Cooperation on Civil Service Matters (ACSM) (www.acsm.org)
- ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (www.ahadcm.org)
- ASEAN Risk Assessment Centre for Food Safety (ARAC)
- ASEAN Risk Assessment and Risk Communication Resource Centre (ARARC)
- China-ASEAN Environmental Cooperation Centre (chinaaseanenv.org/eng)
- ASEAN University Network (www.ausnet.org)
- ASEAN Quality Assurance Network (AQAN)
- Committee for ASEAN Youth Cooperation (CAYC)
- Southeast Asia School Principals Forum (SEASPF)
- Southeast Asian Ministers of Education Organization (SEAMEO)
- ASEAN Youth Forum
- ASEAN Coordinating Centre for Transboundary Haze Pollution
In the ASCC Blueprint 2025, ASEAN environmental cooperation is guided towards the realisation of ASCC Vision 2025 and a sustainable environment in the face of social changes and economic development through achieving 4 Key Result Areas and 27 strategic measures:

- Conservation and Sustainable Management of Biodiversity and Natural Resources (10 strategic measures)
- Environmentally Sustainable Cities (6 strategic measures)
- Sustainable Climate (8 strategic measures)
- Sustainable Consumption and Production (4 strategic measures)
Overview:
ASEAN Cooperation on Environment Framework

ASEAN Secretariat

ASEAN Multi-sectoral Workshop on Mainstreaming Biodiversity for Food and Agriculture
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RECENT INTERNATIONAL FRAMEWORKS AND GLOBAL DISCOURSES HAVE INFORMED THE DEVELOPMENT OF THE ASCC BLUEPRINT
<table>
<thead>
<tr>
<th>Subsidiary Body of ASOEN</th>
<th>Chairmanship</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASEAN Working Group on Climate Change (AWGCC)</td>
<td>Singapore</td>
</tr>
<tr>
<td>ASEAN Working Group on Coastal and Marine Environment (AWGCME)</td>
<td>Philippines</td>
</tr>
<tr>
<td>ASEAN Working Group on Chemicals and Waste (AWGCW)</td>
<td>Thailand</td>
</tr>
<tr>
<td>ASEAN Working Group on Environmental Education (AWGEE)</td>
<td>Brunei Darussalam</td>
</tr>
<tr>
<td>ASEAN Working Group on Environmentally Sustainable Cities (AWGESC)</td>
<td>Cambodia</td>
</tr>
<tr>
<td>ASEAN Working Group on Nature Conservation and Biodiversity (AWGNCB)</td>
<td>Indonesia</td>
</tr>
<tr>
<td>ASEAN Working Group on Water Resources Management (AWGWRM)</td>
<td>Malaysia</td>
</tr>
</tbody>
</table>
Mandate

- The 26th Meeting of ASEAN Senior Officials on Environment (ASOEN) in September 2015 endorsed the development of working group action plans and ASEAN strategic plan of action on environmental cooperation in line with the ASEAN Vision 2025 and the new ASCC Blueprint.

Draft of ASEAN Strategic Plan on Environment (ASPEN)

- The ASEAN Strategic Plan on Environment (ASPEN) will serve as a blueprint for action of ASOEN and its subsidiary bodies in addressing common environmental problems in the ASEAN region and ensuring effective cooperation among AMS towards the achievement of the ASEAN Community Vision 2025.

- ASPEN will consist of a number of strategic priorities with agreed activities and outputs that will serve as working group action plans.
ASEAN Strategic Plan on Environment (ASPEN) (under consideration)

Strategic Priority 1: Nature Conservation and Biodiversity
Strategic Priority 2: Coastal and Marine Environment
Strategic Priority 3: Water Resources Management
Strategic Priority 4: Sustainable Cities
Strategic Priority 5: Climate Change
Strategic Priority 6: Chemicals and Waste
Strategic Priority 7: Environmental Education & SCP

Strategic Priorities and Programmes at A Glance
### Strategic Priority 1: Nature Conservation and Biodiversity
**(as at November 2018)**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Main Implementing Body(ies)</th>
<th>Programme Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To ensure that by 2023, ASEAN's biodiversity is valued, conserved, restored, wisely used and delivers benefits essential for its people.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. To promote natural resilience and use of integrated ecosystem-based approaches (to climate change adaptation and disaster risk reduction).</td>
<td>AWGNCB / ACB</td>
<td>a) Projected Areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) Ecosystem Services</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) Species Conservation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d) Invasive Alien Species</td>
</tr>
<tr>
<td></td>
<td></td>
<td>e) <strong>Mainstreaming Biodiversity in different sectors</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>f) Ecosystem Restoration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>g) Urban Biodiversity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>h) Access and Benefit Sharing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>i) Communication Education and Public Awareness (CEPA) (including Biodiversity Information Management)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>j) Knowledge Management for Biodiversity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>k) ASEAN Centre for Biodiversity</td>
</tr>
</tbody>
</table>

### e) Mainstreaming Biodiversity in different sectors

Biodiversity mainstreaming efforts undertaken, including mainstreaming into climate change issues and business decisions in the following key sectors:
- Agriculture
- Fisheries
- Health
- Tourism
- Manufacturing and Processing
- Education

1. Develop guidelines for biodiversity mainstreaming in key sectors
2. Document best practices and case studies
3. Coordinate with relevant sectors
Series of workshops on mainstreaming biodiversity:

(i) Asia Multi-ACTOR Dialogue Seminar to Build Social-Ecological Resilience through the Incorporation of Ecosystem-based Solutions in Nationally Determined Contributions on 3-4 October 2018 in Manila, Philippines

(ii) Regional Workshop on Mainstreaming Biodiversity into Development Sectors in ASEAN Member States on 15-17 October 2018 in Manila, Philippines

(iii) Regional Workshop to Address Inter-linkages between Human Health and Biodiversity in the ASEAN Region on 5-7 November 2018 in Manila, Philippines

(iv) ASEAN Multi-sectoral Workshop on Mainstreaming Biodiversity for Food and Agriculture on 4-6 December 2018 in Bangkok, Thailand

Thank you
ASEAN Guidelines for Agroforestry Development

Dian Sukmajaya
FAFD, ASEAN Secretariat

Outline

- ASEAN Policy Framework in FAF Sector
  - AEC Blueprint
  - CSAP (bried)
  - SP-FAF
  - SPA for ASEAN Cooperation in Forestry
- Overview of the ASEAN Cooperation in Food Agriculture and Forestry (AMAF Structure)
- ASEAN Guidelines for Agroforestry Development
ASEAN 2025: Forging Ahead Together

- AEC by 2025:

  "highly integrated and cohesive; competitive, innovative and dynamic; with enhanced connectivity and sectoral cooperation; and a more resilient, inclusive, and people-oriented, people-centred community, integrated with the global economy."

AEC Consolidated Strategic Action Plan (CSAP)

- To complement the AEC 2025 BP → serve as single reference document intended for public on the key action lines toward economic integration (2016-2025)
- A tool to monitor and report the progress of the AEC BP 2025 → facilitate stakeholders feedback from stakeholders
- Areas on the CSAP: Trade (goods & Services), Transport, Energy, FAF, Tourism, Minerals, Science and Technology, SME’s, NDG.
What area that cut across on CSAP relevant to biodiversity?

- Climate Change $\rightarrow$ increase resilience of climate change in agriculture and forestry ((adaptation & mitigation strategy), financing mechanism)
- Food Security
- Sustainable Forest Management (SFM) $\rightarrow$
  FLEG, Social Forestry

BACKGROUND

- The ASEAN cooperation on agriculture was established in 1968, and was expanded in 1977 to include the greater area of agriculture and forestry.

- The ASEAN Food, Agriculture and Forestry (FAF) Cooperation includes food security, food handling, crops, livestock, fisheries, agricultural training and extension, agricultural cooperatives, forestry and joint cooperation in agriculture and forest products promotion scheme.
**VISION OF FOOD, AGRICULTURE & FORESTRY (FAF) COOPERATION (2025)**

- Competitive, inclusive, resilient and sustainable FAF sector
- Integrated with the Global economy
- Based on single market and production base
- Contributing to food and nutrition security and prosperity in ASEAN

**GOALS OF FOOD, AGRICULTURE & FORESTRY (FAF) COOPERATION (2025)**

1. Ensuring equitable, sustainable and inclusive growth
2. Alleviating poverty and eradicating hunger
3. Ensuring food security, food safety and better nutrition
4. Deepening regional integration
5. Enhancing access to global markets
6. Increasing resilience, and contributing to mitigation and adaptation of climate change, natural disasters and other shocks
7. Achieving Sustainable Forest Management (SFM)
Strategic Thrusts

- **Strategic Thrust 1**: Enhance quantity and quality of production with sustainable, ‘green’ technologies, resource management systems, and minimise pre- and post-harvest losses and waste
- **Strategic Thrust 2**: Enhance trade facilitation, economic integration and market access
- **Strategic Thrust 3**: Ensure food security, food safety, better nutrition and equitable distribution
- **Strategic Thrust 4**: Increase resilience to climate change, natural disasters and other shocks
- **Strategic Thrust 5**: Assist small scale producers and SMEs to improve productivity, technology and product quality, to meet global market standards and increase competitiveness in line with the ASEAN Policy Blueprint on SME Development
- **Strategic Thrust 6**: Strengthen ASEAN joint approaches on international and regional issues
- **Strategic Thrust 7**: Promote sustainable forest management

Structure of ASEAN Cooperation in Food, Agriculture and Forestry

Notes:
- AWG: ASEAN Working Group
- AMSP: ASEAN Rapid Market System on Food and Feed
- ASCP: ASEAN IP5 Contract Points
- ACCB: ASEAN Coordinating Centre for Animal Health and Disease
- ASWAG: ASEAN Working Group on Agriculture and Forestry
- AATF: ASEAN Agricultural Training and Extension
- ASSP: ASEAN Agricultural Science and Research and Development
- ASAM: Agriculture and Agro-based Industries
- PDAF: Project on Development of Agro-based Industries
- ASAM: ASEAN Agricultural and Agro-based Industries
- AMF: ASEAN Market Access Facility
- AMF: ASEAN Market Access Facility
- ADRG: ASEAN Rural Development Group
- FPM: National Food Point Working Group

ASEAN Ministry of Agriculture and Forestry (AMAF)
VISION OF ASEAN COOPERATION IN FORESTRY (2025)

- Forest resources are sustainably managed at the landscape level to meet societal needs, both socio-economically and culturally, of the present and future generations, and to contribute positively to sustainable development.

SPA for ASEAN Cooperation in Forestry

- ST 1: Enhancing SFM
- ST 2: Enhancing Trade Facilitation, Economic Integration and Market Access
- ST 3: Enhancing the Forestry Resilience and Role in Climate Change
- ST 4: Institutional Strengthening and Human Resources
- ST 5: Strengthening ASEAN’S Joint Approaches on Regional and International Issues Affecting the Forestry Sector
Key Priorities 2018-2019 (Forestry)

- ASEAN Guidelines for Agroforestry development (adopted)
- Manual for Assessing FLEG Implementation in AMS (adopted)
- Regional Community Forestry Assessment Tool drafted/developed
- Regional Agroforestry Training Manual/Modules drafted/developed
- ASEAN Guidelines for Detecting and Preventing Wildlife Trafficking drafted/developed
- Regional Voluntary Code of Conduct for Forest & Timber Companies in ASEAN drafted/developed
- Scoping Study on NTFP Standards

ASEAN GUIDELINES FOR AGROFORESTRY DEVELOPMENT
OBJECTIVES

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

Targets (for whom)

- Decision (policy) makers,
- program and/or project planners at national and sub-national levels,
- domestic and foreign investors,
- institutions for higher learning,
- local and international non-governmental organizations involved with agroforestry and development.
- civil society groups for advocacy purposes.
Guiding Principles

- **Institutional**
- **Economic**
- **Environmental**
- **Socio-Cultural**
- Technical Design
- Communication and Scaling

Institutional Principles

- **Create an Enabling Environment:**
  - abide with existing international treaty, national laws (regulations), national agroforestry programs, funding support

- **Ensure effective organisational capacity:**
  - Capacity of institution, expertise, R&D, extension, module for higher education, stakeholders analysis

- **Support effective cooperation and participative decision making:**
  - participatory approach, consider landscape approach, respect traditional knowledge
Economic Principles

• Recognise the value of goods and ecosystem services:
  – promote agroforestry goods and ecosystem services, local knowledge of agroforestry products, provide incentives

• Enabling environment for agroforestry investments and markets:
  – Develop financing schemes, policies for flexible investments, support trade promotion, marketing, direct and indirect incentives

Environmental Principles

• Maintain and enhance ecosystems services at farm and landscape scales:
  – Ensure multi-purpose benefit (economic, social, environment), enhance ecosystem services, restoration, EIA for large-scale agroforestry, biodiversity, standard practices for ecosystem services

• Understand and manage trade offs:
  – Project the magnitude of potential trade-offs and support decision-making by quantifying the economic and environmental costs and benefits of agroforestry intervention
Socio-cultural Principles

- **Recognise and Respect local knowledge, traditions and choices:**
  - Consider local knowledge and choices, address unique needs for capacity development

- **Support gender equity and social inclusion**
  - Acknowledge gender equity, ensure beneficiaries for smallholders and marginalised groups

- **Ensure safeguards and tenure rights:**
  - Understand tenure rights of stakeholders, ensure security of land tenure rights, FPIC of rights holders

Technical design principles

- **Design agroforestry options based on context**
  - Provide user-friendly, practicable decision support tools, ensure agroforestry options selected based on specific needs, consider balance economic, socio-cultural and environment benefit

- **Select agroforestry components in a participatory manner:**
  - Consider local needs and biophysical conditions, consider stakeholders preference, examine applicable techniques for specific conditions, ensure active participation
Communication and scaling

- **Effectively communicate agroforestry knowledge**
  - Provide good communication materials to better understand agroforestry, enhance communication capacity and knowledge management

- **Plan for effective scaling up and sustainability**
  - Ensure stakeholders engagement, appropriate modalities for scaling, consider local specific conditions (biophysical, socio-culture, labor, market)

What Next for Agroforestry Guidelines?

- Develop Action Plan for Its Implementation
- Support policy development (review) at AMS
- Capacity building enhancement for AMS on several areas (awareness, field tools/manuals, training, etc)
- Sharing best practices and experiences among AMS
Way forward toward Mainstreaming AgroBiodiversity in ASEAN

- Identify and Develop Joint Proposal/Initiatives/Activities to support mainstreaming agrobiodiversity at national and regional level
- Promote and enhance dialogue on Mainstreaming Agrobiodiversity across the sectors at regional level
- Stocktake on best practices, policies, strategies in addressing agrobiodiversity in AMS
- Identify relevant existing platform to discuss the issues on Agrobiodiversity; as if necessary to provide Ad-Hoc Platform to bring experts from different sectors
- Resource mobilisation and partnership

Thank you
AGROBIODIVERSITY CONSERVATION AND SUSTAINABLE USE IN ASEAN MEMBER STATES (AMS)

Preliminary National Survey Data, Regional Trends and Practical Challenges

Wayne Nelles, Ph.D. Canadian Visiting Scholar, Chulalongkorn University School of Agricultural Resources (CUSAR), Bangkok, Thailand

4 December 2018, 13:30-14:30
Key Results and Messages of the Initial Stocktaking Workshop in Chiang Mai, 2017

For:
ASEAN Multi-sectoral Workshop on Mainstreaming Biodiversity for Food and Agriculture 4 – 6 December 2018, Bangkok, Thailand

OVERVIEW

1. NATIONAL SURVEY DATA (Aug 2017) - Selected Results and Recommendations) FROM SOME (not all) AMS

2. NATIONAL REPORTS & PLANS – Selected Highlights

3. REGIONAL TRENDS (Selected Examples from ABO2 with Common themes/Issues from Survey and AMS Reports)

4. ASEAN POLICIES & PLANS for AGROBIODIVERSITY (or lack thereof)

5. CONCLUSIONS (Data/Gaps – Policy, Research and Capacity Development Needs)

6. POST-SURVEY CONCEPT NOTE (Chulalongkorn University with Partners)

7. DISCUSSION - Questions/Comments
1. NATIONAL SURVEY DATA

(Selected Results) from AMS Respondents

(August 2017)

Survey Background

ACB conducted Survey in August 2017 to collect data from all 10 AMS

Twelve main sets of Survey questions focused on:

1. COORDINATION or REPORTING FUNCTIONS (about AGROBIODIVERSITY)
2. AGROBIODIVERSITY MANAGEMENT and OVERSIGHT
3. REGULAR NATIONAL BUDGET(S)
4. EXTERNAL BUDGETS for AGROBIODIVERSITY PROJECTS
5. SCIENTIFIC DATA (Collection, Management and Analysis)
6. GENETIC RESOURCES, BREEDING PROGRAMS and SEED BANKS
7. HUMAN RESOURCE CAPACITIES
8. AGROBIODIVERSITY POLICIES, LAWS, PLANS and REGULATIONS
9. AGROBIODIVERSITY LOSS DRIVERS & THREAT PERCEPTIONS
10. PARTNERSHIPS and COOPERATION AGREEMENTS
11. AGROBIODIVERSITY EDUCATION, LEARNING and PUBLIC AWARENESS
12. AGROBIODIVERSITY CONSERVATION or SUSTAINABLE USE ACTION RECOMMENDATIONS
MAIN THEMES/QUESTION TYPES
IN AMS SURVEY

AMS REPORTING OF or PERCEPTIONS ABOUT

1. Capacities & Resources (Past and Current)
2. Enabling Environment & Tools (or inhibiting factors/drivers)
3. Needs or Recommendations (about what should be done)

.....For AGROBIODIVERSITY MANAGEMENT & SUSTAINABLE USE

Survey Responses

Responses or Completed Surveys Submitted to ACB by:

- Cambodia
- Laos (Plan Document only submitted, without Survey)
- Myanmar
- Philippines
- Viet Nam

No Completed Survey Docs submitted by:

- Brunei
- Indonesia
- Malaysia
- Singapore
- Thailand

Some Missing Data or Incomplete Questions in Some Completed Surveys

One AMS (Laos) submitted full Lao PDR national Agro-biodiversity Programme and Action Plan II (2015-2025) but no completed Survey Data
Cambodia DATA (1) – Capacities & Resources

SCIENTIFIC DATA (Collection, Management and Analysis) – YES

- Agricultural Plant & Crop Data Management (Ministry of Agriculture, Forestry and Fisheries)
- Biodiversity Species Data Management (Ministry of Environment)

BUDGETS (No Data provided)

GENETIC RESOURCES, BREEDING PROGRAMS and SEED BANKS

- YES. Some government managed, but...
- NONE by international agencies (or at least none reported in survey)

HUMAN RESOURCE CAPACITIES –

- None Reported (No dedicated Agrobiodiversity Personnel)

Cambodia DATA (2)– Enabling (or Inhibiting) Environment & Tools

AGROBIODIVERSITY POLICIES, LAWS, PLANS and REGULATIONS –

- None (or at least reported) – Deferred to Ministry of Agriculture, Forestry and Fisheries to respond

NATIONAL PLANS PERTAINING TO AGROBIODIVERSITY CONSERVATION, USE OR RESEARCH?

- YES (but principally in National Biodiversity Strategy and Action Plan theme 13 on sustainable agriculture and animal product

DRIVERS OF AGROBIODIVERSITY LOSS & THREAT PERCEPTIONS

- No answer

PARTNERSHIPS OR MOUS ON AGROBIODIVERSITY

- No/None

AGROBIODIVERSITY EDUCATION, LEARNING and PUBLIC AWARENESS (or Uni Progs)

- No/None
Cambodia DATA(3) NEEDS & RECOMMENDATIONS

Cambodia AGROBIODIVERSITY CONSERVATION or SUSTAINABLE USE ACTION RECOMMENDATIONS

- **NONE** specifically made in Survey
- (But) Suggests using recommendations already impliedoutlined in:

  5th National Biodiversity Strategy and Action Plan (NBSAP) [February 2016]
  particularly related to Theme 13: Sustainable Agriculture and Animal Production

Laos

**Background**
- First National Agro-Biodiversity Programme, running from 2005 to 2012
- In 2014, with assistance from FAO, MAF began revision of NABP II through a participatory process led by National Agricultural and Forestry Research Institute (NAFRI)
- The Agro-Biodiversity Initiative (TABI) has been donor supported by Swiss Agency for Development and Cooperation (SDC)

**Survey**
- Not Completed/No data submitted

Submitted full Background Document (Plan) to ACB

- Provides some good documentation and extensive analysis of Laos Agrobiodiversity with Relevant Action Commitments related to CBD-Aichi Targets
Myanmar DATA (1) – Capacities & Resources

SCIENTIFIC DATA (Collection, Management and Analysis) – YES

• Ministry of Agriculture Livestock and Irrigation
• Ministry of Environmental Conservation and Forestry

BUDGETS (for AGROBIODIVERSITY)

• USD 75,782 in National Budget and 5 projects (donor funded or managed) USD 45,000

GENETIC RESOURCES, BREEDING PROGRAMS and SEED BANKS

• YES. Some government managed - Germplasm conserved in Seed Bank
• YES by international agencies (reported, but NOT NAMED in survey)

HUMAN RESOURCE CAPACITIES – 19 staff

• (16 Scientists and 3 Administrative Personnel responsible for Agrobiodiversity)

Myanmar DATA (2) – Enabling (or Inhibiting) Environment & Tools

AGROBIODIVERSITY POLICIES, LAWS, PLANS and REGULATIONS –

• YES (or at least reported) in 14 separate laws/regulations (1989 to 2012) – Not Agrobiodiversity specific

NATIONAL PLANS PERTAINING TO AGROBIODIVERSITY CONSERVATION, USE OR RESEARCH?

• YES (but principally in National Biodiversity Strategy and Action Plan, (NBSAP) 2015-2020

DRIVERS OF AGROBIODIVERSITY LOSS & THREAT PERCEPTIONS

• Referred to Table 33 in NBSAP for Aichi Target 13

PARTNERSHIPS OR MOUS ON AGROBIODIVERSITY

• YES [several named]

AGROBIODIVERSITY EDUCATION, LEARNING & PUBLIC AWARENESS (or Univ Progs)

• YES (a few courses by Yezin Agricultural University and University of Forestry)
Myanmar DATA (3) NEEDS & RECOMMENDATIONS

Myanmar AGROBIO DIVERSITY CONSERVATION or SUSTAINABLE USE ACTION RECOMMENDATIONS

- **NONE** specifically made in Survey

- (But) Suggests using recommendations already implied/outlined in:

  
  Annex 1 (Summary of selected targets and associated indicators linked to Aichi Targets specifically, over 5 years to 2020, pp. 123 to 128)

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Philippines (1) DATA – Capacities & Resources

**SCIENTIFIC DATA** (Collection, Management and Analysis) – **YES**

- Department of Environment and Natural Resources (DENR); Department of Agriculture (DA); University of the Philippines (UP)- Institute of Plant Breeding; Philippine Statistical Authority (PSA); UPLB Museum of Natural History, BIOTECH

**BUDGETS** (for AGROBIO DIVERSITY related Projects)

- **USD 17,022,061** from External Donors plus at least 3 projects (donor funded/managed from UNDP, FAO/UN-GEF)

**GENETIC RESOURCES, BREEDING PROGRAMS** and SEED BANKS

- **YES.** Some government managed by UP Los Baños Institute of Plant Breeding, DA-BAR – Bureau of Agricultural Research and DA-BPI – Bureau of Plant Industry Regional Research Center

- **YES** by international agencies (particularly IRRI)

**HUMAN RESOURCE CAPACITIES**

- **None Reported** (No dedicated Agrobiodiversity Personnel)
Philippines (2) DATA – Enabling (or Inhibiting) Environment & Tools

AGROBIODIVERSITY POLICIES, LAWS, PLANS and REGULATIONS –
• YES in 4 separate laws/regulations – Some Not Agrobiodiversity specific

NATIONAL PLANS PERTAINING TO AGROBIODIVERSITY CONSERVATION, USE OR RESEARCH?
• YES (principally in Philippine Biodiversity Strategy and Action Plan (2015-2028) and plans related to land degradation)

DRIVERS OF AGROBIODIVERSITY LOSS & THREAT PERCEPTIONS
• Possible Direct: including habitat destruction/conversion of agricultural land; impacts of biotechnology; extreme weather events/climate change; invasive alien species, pests and diseases; and institutional problems (as well as several indirect)

PARTNERSHIPS OR MOUs ON AGROBIODIVERSITY
• YES (several) Academic, Government and NGO

AGROBIODIVERSITY EDUCATION, LEARNING and PUBLIC AWARENESS (or Uni Progs)
• YES: Agricultural Training Institute (ATI), UP Los Baños; Philippine Council for Agriculture, Forestry and Natural Resources Research & Development (LOST), etc.

Philippines DATA (3) NEEDS & RECOMMENDATIONS

Philippines AGROBIODIVERSITY CONSERVATION or SUSTAINABLE USE ACTION RECOMMENDATIONS

• Policy level- approval of the draft DENR-DA Biodiversity Friendly Agricultural Practices (BDFAPs) Joint Administrative Order

• Tie up BDFAPs with Biodiversity Friendly Enterprises (BDFEs)

• Follow thru activities to sustain the recognition, mainstreaming and in-situ conservation and adaptive management of potential NIABS/GIAHS

• Short courses or trainings on agrobiodiversity conservation both at the National and Field levels
Viet Nam (1) DATA – Capacities & Resources

SCIENTIFIC DATA (Collection, Management and Analysis) - YES

- Ministry of Agriculture and Rural development (MARD) and several institutes under MARD: 1. Central of plant resources (Vietnamese Academy of agricultural Sciences –VASS); 2. Institute of Livestock. 3. Institute of animal health. Research Institute for aquaculture; and 4. Research Institute for marine fisheries

BUDGETS (for AGROBIO DIVERSITY related Projects)

- USD $600,000 (approx) in National Budget and $USD 90,000 at national level (for genetic conservation programs, breeding programs). Re External Donors (details to follow)

GENETIC RESOURCES, BREEDING PROGRAMS and SEED BANKS

- YES by government (not named) and NO by international agencies

HUMAN RESOURCE CAPACITIES

- 400 government employees working for agencies under MARD related to agrobiodiversity issues (but unclear if personnel specific or dedicated)

Viet Nam DATA (2) – Enabling (or Inhibiting) Environment & Tools

AGROBIO DIVERSITY POLICIES, LAWS, PLANS and REGULATIONS –

- YES at least 15 Separate laws/regulations – Some Not Agrobiodiversity specific

NATIONAL PLANS re AGROBIO DIVERSITY CONSERVATION, USE OR RESEARCH?

- YES (principally in National biodiversity strategy to 2020 and Vision to 2030. No action plan for implementing this strategy.

DRIVERS OF AGROBIO DIVERSITY LOSS & THREAT PERCEPTIONS

- Forest, marine, soil, water habitat systems loss caused by economic development,
- Emergence of industrial livestock breeds, hybrid varieties through local extension programs and projects.
- Climate change, extreme weather as unusual cold weather, hot, dry weather caused of degradation agrobiodiversity
- Low awareness on value of agrobiodiversity of all stakeholders

PARTNERSHIPS OR MOUS ON AGROBIO DIVERSITY – NONE (reported)

AGROBIO DIVERSITY EDUCATION, LEARNING and PUBLIC AWARENESS (or Uni Progs)

- YES. Univ of VN Forestry; VN agric Acad; Univ of nat res and env; Can Tho Univ
Viet Nam DATA (2) – Enabling (or Inhibiting) Environment & Tools

AGROBIODIVERSITY POLICIES, LAWS, PLANS and REGULATIONS –
- **YES** at least 15 Separate laws/regulations – Some Not Agrobiodiversity specific

NATIONAL PLANS re AGROBIODIVERSITY CONSERVATION, USE OR RESEARCH?
- **YES** (principally in National biodiversity strategy to 2020 and Vision to 2030. No action plan for implementing this strategy.

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PARTNERSHIPS OR MOUS ON AGROBIODIVERSITY – **NONE** (reported)

AGROBIODIVERSITY EDUCATION, LEARNING and PUBLIC AWARENESS (or Uni Progs)
- **YES.** Univ of VN Forestry; VN agric Acad; Univ of nat res and env; Can Tho Univ

Viet Nam DATA (3) NEEDS & RECOMMENDATIONS

Viet Nam AGROBIODIVERSITY CONSERVATION or SUSTAINABLE USE ACTION RECOMMENDATIONS

- Develop action plans for protecting agrobiodiversity
- Enhance capacity in managing protected areas (national parks, marine protected areas, wetland) to well managed habitats for agrobiodiversity.
- Apply ecosystem services and economical tools in managing protected areas, proposal policies on finance mechanisms to create sustainable incomes for national parks to protect habitats for agrobiodiversity
- To prioritize investment in programs on surveying the current status of agricultural bio-diversity, updating, reviewing and supplementing the list of endangered precious
- Complete data base on agrobiodiversity;
- Develop science research programs on agrobiodiversity; models and projects of accessing and benefit sharing in using agrobiodiversity
- Programs on capacity building for staffs who are working in genetic resources conservation
- Enhance international and regional cooperation in agrobiodiversity.
2. RECENT NATIONAL REPORTS & PLANS

2. NATIONAL BIODIVERSITY REPORTS & PLANS –

Selected Highlights
(of Agro-biodiversity enabling Approaches, Commitments or Actions in National Plans)

Brunei Darussalam

Brunei References to CBD/Aichi targets (with selected responses)

- **Target 7** - By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

- **Target 8** - By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

The use and importation of **inorganic fertilizers** in the country is **highly regulated**. The country has set its sustainable target for agriculture purposes of not more than 1% of the country’s land area and thereby **controls the leaching of important nutrients to adjacent ecosystems**. The **use of organic fertilizers** is also **encouraged** for use in the country.

**Source**

- National Biological Resources (Biodiversity) Policy and Strategic Plan of Action (nd)
Cambodia

Cambodia References (selected) re CBD/Aichi targets and complementary assumptions/recommended actions

- Cambodia Target 5 (Aichi Target 7): By 2020 the majority of areas under agriculture, animal production, aquaculture and forestry are managed sustainably;

- 2.6 Adopt farming systems (e.g. multiple cropping systems, use of biomass mulching, low greenhouse gas emission agriculture and animal production) that are more resilient to climate change and that emit less greenhouse gases

- The Government’s agricultural strategy promotes diversified farming systems, agro-forestry and protection, and the management of critical watersheds...Link to the maintenance of protected areas and biodiversity are considered critical to maintaining stability in agricultural systems and in ensuring food security.

- Agricultural productivity can be promoted and maintained in the longer term if organic agricultural practices are promoted

Source


Indonesia

Indonesia References (selected) re CBD/Aichi targets and associated actions

National targets for biodiversity management 2015-2020, include, amongst others:

- 6. Ensure policy for sustainable management and harvest;

- 7. Increase agriculture area, plantation and animal farming managed in sustainable manner;

- 8. Reduce pollution level that destroy natural resources and ecosystem function;

By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

- Up to 2013, 8 organic certification institutions established in Indonesia. In 2011 certified organic agriculture area reached 90,135.30 ha and the ongoing certification process

Source:

The fifth national report to the convention on biological diversity
Lao PDR

Laos References (selected) re CBD/Aichi targets and associated actions

- **Objective 10:** Support the conservation of biodiversity through ecologically sustainable agriculture...CHAPTER 6: IMPLEMENTING 2020 AICHI BIODIVERSITY TARGETS

- ...number of steps that have been made towards the use of natural resources in a sustainable way, particularly related to organic agriculture

- **Integrated Pest Management** has been carried out and farmer field schools...with the view to optimize the use of local biodiversity, including natural pest enemies, organic fertilizers, and bio-insecticides

**Aichi Target 17. NBSAP Implementation**

- A Sub-Sector *Working Group on Agro-biodiversity* has been developed with a multi-sectoral approach and with recommendations...to...top level government

Source(s)


Ministry of Agriculture and Forestry, Dec 2016

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Malaysia (1)

Malaysia References (selected) re CBD/Aichi targets and associated actions

- **Target 4:** By 2025, our production forests, agriculture production and fisheries are managed and harvested sustainably.

- **Target 13:** By 2025, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives is adequately conserved

- **Key indicator 4.2:** By 2025, 50% of all agricultural areas are sustainably managed (i.e. certified under schemes such as MSPO, RSPO, MyGAP, etc.).

- **Key indicator 4.4:** By 2021, perverse subsidies in the agriculture, forestry and fisheries sectors have been identified and rationalized

- **Action 13.1** Support the implementation of the National Strategies and Action Plans on Agricultural Biodiversity Conservation and Sustainable Utilisation

Source

*National Policy on Biological Diversity 2016 – 2025*
Malaysia (2)

- National Strategy and Action Plan on Agrobiodiversity Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture (NSAP)

(Reported by Dr. Rosliza Binti Jaiuli Senior Scientist, Center of Agrobiodiversity and Environment Research, Malaysia at Chiang Mai ACB-SEARCA Workshop, Sept 2017)

Myanmar

Myanmar References (selected) re CBD/Aichi targets and associated actions

- Target 7. By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

- Target 8 By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity

- 5.13 Aichi Target 13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity

- Myanmar’s draft national seed policy recognizes the rights of farmers... to cultivate diverse landraces and participate in seed saver networks and exchanges... However, while most of the seeds used in Myanmar are produced by farmers, the extension services promote the use of commercial seeds. This is a barrier to preserving on-farm genetic diversity.

Source
Phillippines

Philippines References (selected)

- Agrobiodiversity has been developed through the application of the knowledge and skills of farmers, herders and fisherfolk in a wide range of agroecosystems. The knowledge it has produced is key to global food security because of their wild relatives.

Organic Agriculture Act of 2010 (RA 10068)

- 1) policy formulation on on regulation, registration, accreditation, certification and labeling on organic agriculture; 2) development and extension of appropriate sustainable environment and gender-friendly organic agriculture; 3) accelerate the production and commercialization of organic fertilizers, pesticides, herbicides and other appropriate farm inputs; and 4) implementation of organic agricultural programs, projects and activities.

Target

- 11 By 2028, there will be a 10% increase in agricultural areas devoted to all types of biodiversity-friendly agriculture.
- 15 By 2028, there will be at least 10 nationally recognized agricultural heritage systems.
- Agrobiodiversity Guidelines for LGUs

Source
2015-2028 Philippine Biodiversity Strategy and Action Plan (PBSAP)

Singapore

Singapore References (selected)

Refers to (for informational or analytical purposes only):

- Target 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

- Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem

But explanation is as follows:

- “Not relevant for Singapore. Singapore has limited agriculture and aquaculture, and no forestry sector.”

Source
Thailand

Thailand References (selected)

Strategic goal B: Reduce the direct pressures on biodiversity and promote sustainable use

- 7. Areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity
- 3.1) Manage agricultural areas, aquaculture, and forestry in a sustainable manner, with responsibility for the environment to assure conservation of biodiversity and ecosystems and incorporate biodiversity issues into relevant environmental standards.

Measure 2 Promote sustainable utilization of biodiversity

- 2.1) Develop and promote implementation of good practices for sustainable production and consumption in order to ensure food and health security and community strength.
- 8. Pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity

Source

Viet Nam

Viet Nam References (selected)

- 3.1.3. Sustainable use, fair and equitable access, and sharing of benefits derived from ecosystems and biodiversity
- Develop and implement policies to support...agricultural, forestry, and fisheries products that meet international standards for conservation and sustainable use of biological resources;
- ...Conservation and development of agricultural biodiversity... Announce and complete conservation system to effectively conserve crop varieties, animal breeds, native agricultural microorganisms, etc. that are rare, valuable and possess high socioeconomic values.
- ...Ensure 100% genetically modified organisms and their products and goods which are placed on the market have passed risk assessments in Vietnam, and that they are tagged, monitored and supervised as prescribed by law

Source
Vietnam National Biodiversity Strategy - to 2020, Vision to 2030
3. SOUTH EAST ASIAN REGIONAL ASSESSMENT (Preliminary)

3. SOUTH EAST ASIAN REGIONAL ASSESSMENT
Key Themes and Highlights

from

ASEAN Biodiversity Outlook (ABO2), 2017
ASEAN Centre for Biodiversity

Key Regional Themes/Challenges
(within or across several AMS)

- **Genetic erosion** reported in 5 National Biodiversity Reports where several AMS identified recent introduction of new, modern, and high-yielding varieties as one of the causes of genetic erosion of native crop varieties of rice and other cereals. Similarly, for livestock, high-yielding imported breeds were preferred to meet high demands and increase profitability not possible with some local breeds.

- **Conversion of agricultural lands** for increasing urban populations for residential areas and industrial uses and even golf courses near cities while the proportion of arable area to total agricultural area decreases.

- **Decline in pollination services** from bees, butterflies, wasps, birds, and bats which provide essential services for sustaining biodiversity as well as food production recognizing that the ASEAN region is among the top producers and exporters of re pollination-dependent crops.

- **Invasive alien species (IAS)**, associated sometimes with increasing trade in the region while potential for IAS incursions has become increasingly important with many noxious weeds especially impacting a range of sectors, including crops and pasture production.

(ABO2, ASEAN Centre for Biodiversity, 2017, pp. 51-52).
Measuring Regional Progress on CBD Obligations (YELLOW LIGHT - TARGET 7)

Measuring regional progress on SUSTAINABLE USE

Re: Strategic Aichi Goal B: “Reduce the direct pressures on biodiversity and promote sustainable use” and meeting Target 7 the ABO2 suggests:

- Forest encroachment, agricultural land conversion and heavy reliance on chemical production inputs threaten ecosystem services essential to the conduct of agriculture in the ASEAN region...the proportion of agricultural land to total land area declines as the urban population of the region increases. There is a need to support and promote agro-ecological farming practices and initiatives

(YELLOW LIGHT, ASEAN Centre for Biodiversity, 2017, p. 24)

The YELLOW LIGHT means “at least half of AMS have reported they have mobilized necessary actions...”

Measuring Regional Progress on CBD Obligations (RED LIGHT TARGET 13)

Measuring regional progress SAFEGUARDING DIVERSITY

Concerning Strategic Goal C: To improve the Status of biodiversity by safeguarding ecosystems, species and genetic diversity re meeting Target 13 the ABO2 suggests:

In-situ and ex-situ efforts are in place to conserve native and wild varieties of crops and livestock. Several gene banks have been established for important crops and livestock species. Out of 7.4 million accessions of plant genetic resources for food and agriculture maintained globally, eight percent are safely stored in gene banks in the ASEAN region. Moreover, evaluation and characterization of these accessions are also being done. There is a need to, establish an interoperable database platform to ensure the safety of these genetic resources and regularly monitor storage facilities (RED LIGHT, ASEAN Centre for Biodiversity, 2017, p. 26)

The RED LIGHT means “less than half of AMS have mobilized initiatives leading towards achievement of this Aichi Target and have not demonstrated positive impacts”
Measuring Regional Progress on CBD Obligations (YELLOW LIGHT - TARGET 20)

Measuring regional progress AVAILABLE RESOURCES

Although there has been some recognition of the importance of biodiversity conservation with financial allocations for various activities from local to the national level this has been

“…not always in an organized fashion nor streamlined with National Plans and Programmes and the Strategic Plan for Biodiversity.” (yellow light, ASEAN Centre for Biodiversity, 2017, p. 27)

Again...The YELLOW LIGHT means “at least half of AMS have reported they have mobilized necessary actions…”

Suggested “Ways Forward” (from ABO2)

Overall the ABO2 suggests that we need to better provide genetic diversity to enhance and sustain agricultural productivity

This is an essential part of the “Ways Forward” it recommends in particular (and minimally) as follows:

• Better Ex-Situ and In Situ Conservation
• Making crucial Information available
• Establishment of an ASEAN Regionally Important Heritage System (ARIAHAS)
• Improving the ASEAN Policy framework for Agricultural Biodiversity

(ASEAN Centre for Biodiversity, 2017, pp. 49-55)
4. ASEAN POLICIES & PLANS

4. ASEAN POLICIES & PLANS for AGROBIODIVERSITY ("Missing in Action")

What Relevant ASEAN Policy frameworks exist?

QUESTIONS TO BEGIN

• What do we Know?

• Where do we start to move forward?

............To IMPROVE the ASEAN POLICY FRAMEWORK FOR AGRICULTURAL BIODIVERSITY (called for ASEAN Centre for Biodiversity, 2017, in ABO2)

PRELIMINARY (but incomplete) ANSWERS

1. FIRST. Evaluate all Existing National Biodiversity Reports and Plans of AMS (noted above) for agrobiodiversity commitments and content

2. SECOND. Look at Existing Agriculture-Associated ASEAN Plans (and gaps)

>>>>> NEXT......
AGROBIODIVERSITY Commitments (or Gaps) in ASEAN Plans

1. ASEAN Socio-Cultural Community Blueprint 2025 - **NONE**

2. ASEAN Integrated Food Security (AIFS) Framework and Strategic Plan of Action on Food Security in the ASEAN region (SPA-FS) 2015-2020 - **NONE** - No strategy for Agricultural Biodiversity or Food-Related Biodiversity in ASEAN

3. ASEAN Strategic Plan of Action for Cooperation on Livestock (2015-2020) - **INDIRECT** - Promote policies to minimise negative externalities of livestock on biodiversity

4. Strategy and Action Plan for Sustainable Management of Peatlands in ASEAN Member States 2006-2020 **NONE** - No Agricultural Biodiversity or Food-Related Biodiversity strategy in Peatlands

5. Strategic Plan of Action for ASEAN cooperation on Crops (2016-2020) **NONE** - No strategy on Agricultural biodiversity or Food-Related Biodiversity crops


7. ASEAN Plan of Action on Science, Technology and Innovation (APASTI) 2016-2025 - **MINIMAL/INDIRECT** - BUT No clear strategy for Agricultural Biodiversity specifically associated with STI

8. Vision & Strat Plan for ASEAN Cooperation in Food, Agric, Forestry 2016-2025 (SP-FAF) **INDIRECT** - Strengthen ASEAN joint approaches on international and regional issues...developing ASEAN common positions on relevant issues on trade, climate change, forestry, BIODIVERSITY CONSERVATION

Implications from ACB-SEARCA Survey, ABO (1&2) and Initial Background Study for ACB-SEARCA

**Main Implications (From AMS Survey and Background Study)**

- **AGROBIODIVERSITY** is “MISSING IN ACTION” (or at most a tangential consideration) in many ASEAN Regional Agriculture-related ASEAN Policies & Plans

- Agrobiodiversity **NEEDS TO BE MAINSTREAMED** across

  1. All existing ASEAN Plans associated with Food and Agriculture (AND)

  2. Different Ministries/Departments (Agriculture, Environment, Science, Education, Commerce, Trade, etc.)

- Agrobiodiversity needs to be better documented scientifically in local and agro-ecological contexts and properly assessed for multiple values in the ASEAN region

- **ACTION RECOMMENDATION**: ASEAN should have a **Regional Action Plan (RAP) on Agrobiodiversity Mainstreaming, Conservation and Sustainable Use (AMCSU)**. Process and agreement should be led by ACB-SEARCA with AMS and key partners.
Regional Issues/Challenges (Analysis by Nelles, 2018)

MAIN ISSUES/CHALLENGES (overview)

- KEY AGROBIODIVERSITY THEMES, DEBATES & ASSUMPTIONS
- AGROBIODIVERSITY & SDGs
- AGROBIODIVERSITY IN CBD PLANNING & AICHI TARGETS
- AGROBIODIVERSITY IN SOUTHEAST ASIAN & ASEAN CONTEXTS
- CLIMATE CHANGE & AGROBIODIVERSITY IN SOUTHEAST ASIA
- AGROBIODIVERSITY IN ASEAN PLANS & STRATEGIES
- NEW RESEARCH NEEDS, GUIDING QUESTIONS, & FUTURE WORK
- CONCLUSIONS & ACTION RECOMMENDATIONS

TWO KEY RECOMMENDATIONS

1. Agrobiodiversity in ASEAN must be systematically documented and studied through a scientific regional assessment.

2. National and ASEAN Regional Scientific, Technical and Professional Capacities and Resources need strengthening for Agrobiodiversity Mainstreaming, Conservation, and Sustainable Use to meet SDGs and CBD/Aichi Targets

Reference

5. CONCLUSIONS

5. CONCLUSIONS/IMPLICATIONS

(Summary of AMS & ASEAN Themes, Priorities, Data/Gaps – Research, Planning and Capacity Development Needs)
Selected Issue Highlights
from 2017 ACB Survey and National Reports or Plans

National Agrobiodiversity Resources, Documentation and Planning in AMS
- Largely Absent or Small budget commitments (except LAOS and PHILIPPINES)
- Mostly External Project Driven (not mainstreamed well in national budgets)

Threat Driver/Mitigation or Adaptation Debates and (unresolved) Policy Conflicts
- Climate Change (CAMBODIA; PHILIPPINES and VIET NAM)
- Farmer Rights/Seed saving policy - Commercial vs local seed saving (MYANMAR)
- Impacts or Risks of biotechnology or GMO regulation (PHILIPPINES and VIET NAM)
- Perverse agriculture (or other) subsidies (MALAYSIA)
- Pollution or its mitigation/prevention (BRUNEI and THAILAND)

GENERAL - Conservation or Sustainable Use Strategies Mentioned (current/needed)
- Multiple cropping or Diversified Farming Systems (CAMBODIA);
- Integrated Pest Management (IPM) with Other approaches (LAOS)

SPECIFIC - Organic Approaches or Certification Systems (a theme in several AMS)
- Mentioned by BRUNEI, CAMBODIA, INDONESIA, LAOS, PHILIPPINES & VIET NAM

CORE THEME - Need to Integrate Future ASEAN Planning with
CBD Programme of Work on Agricultural Biodiversity
(Next Steps >>>>> WAYS FORWARD)

CBD Programme of Work on Agricultural Biodiversity based on four elements:

1. Assessments
2. Adaptive management
3. Capacity-building
4. Mainstreaming

Ways Forward and Recommendations (in CBD contexts)

- Discuss CBD Work Programme Issues/Gaps and Needs among AMS in 4 dimensions
- Suggest specific goals, targets and activities on how to “Improve the ASEAN Policy framework for Agricultural Biodiversity” (called for in ABO2) for AMS in CBD
IN SUMMARY – Main Challenges for AMS, ASEAN and Partners
(Reflecting on preliminary survey data, ABO2 & ASEAN Plans)

1. Limited Survey Reporting
   • Survey data so far is incomplete (not submitted from all AMS)
   • Reported data requires follow-up to better clarify gaps

2. Data, Knowledge Management and Science Gaps in AMS
   • Some already identified Data, Knowledge Management and Science Gaps

3. Policy Concerns (Development, Analysis, Reform and Coherence)
   • New work is needed to develop, strengthen and align AMS (and ASEAN-level) policies with CBD reporting and other international processes (re SDGs and more)

4. Lack of Independent Monitoring and Evaluation
   • Self-reporting by AMS not adequate. Independent/peer-review analysis is essential for based on good scientific research to inform policy and practice
   • More should be done with partners/scientists and regional/international agencies

5. New Research and Capacity Development Needed
   • Should be part of new National and ASEAN Regional Action (Planning)
   • Technical Cooperation with partners and Donor Support is essential to assist

6. POST-SURVEY CONCEPT NOTE & CONSULTATION
   (Chulalongkorn University Initiated with Partners)

6. POST-SURVEY CONCEPT NOTE (DRAFT) & CONSULTATION
   (Chulalongkorn University Initiated Regional Research and Capacity-Building Proposal with Partners)
Project Concept (DRAFT Proposed/Discussed)

WORKING TITLE:  Mapping and Assessing Agrobiodiversity in Southeast Asia (MAASEA), 2018-2021

Initial Partners Consultation in Bangkok (Hosted 7 March by IUCN Regional Office and by Skype)

- ASEAN Centre for Biodiversity (ACB)
- Asia Pacific Association of Agricultural Research Institutions (APARRI), Bangkok
- Biodiversity Finance Initiative (BIOFIN)
- CGIAR Consortium of Agricultural Research Centers
- Chulalongkorn University School of Agricultural Resources (CUSAR)
- Food and Agriculture Organization of the United Nations (FAO)
- International Center for Tropical Agriculture (CIAT), Asia Office, CGIAR
- International Union for Conservation of Nature (IUCN)
- Rural Ecological Agriculture for Livelihood (REAL) Field Alliance/Thai Education Foundation (TEF)
- SEAMEO Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA)
- Stockholm Environment Institute (SEI), Asia Centre
- The Agrobiodiversity Initiative (TABI), Laos
- United Nations Development Programme (UNDP)
- United Nations Economic and Social Commission for Asia and the Pacific (UNESCAFP)
- United Nations Educational, Scientific and Cultural Organization (UNESCO)

Concept Submitted Initially to One Donor (French Agency for Development/AFD)

- Some initial interest (at national level in Laos) but no funding due to prior commitments (now stalled)
- Need to update concept and follow-up with other potential donors
- Seed funding and strategic cooperation still needed with additional partners

Proposed Project Concept
(Main Objectives and Outputs)

MAIN OBJECTIVES

- **DESIGN/IMPLEMENT IN-DEPTH MAPPING AND INVENTORY PROCESS.** Conduct in-depth data collection (Interviews, Field Visits and National Consultations) building on key themes, elements and guiding questions from the preliminary 2017 ACB-SEARCA survey and ABO Recommendations

- **PILOT an ASEAN Regional Agrobiodiversity index (building on Biodiversity’s conceptual work) combined with TABI’s scoreboard model across Southeast Asia. Test both methodology in 5 to 12 selected study sites that could be compared with/scaled up in other regions - cooperating with CGIAR, NARO’s and other experts

PROPOSED MAIN PROJECT OUTPUTS

- Ten national Baseline Surveys providing comparable Uniform Data-sets on scope and types of agrobiodiversity and science, knowledge and management capacities of AMS.

- Ten state of Agrobiodiversity Country Reports informed by national meetings, technical stakeholder consultations and drafted by Multi-disciplinary Scientific Committees;

- An open source Agrobiodiversity Data-base with a searchable index freely shared with academics and utilized by farmers, governments and policy makers as a public good;

- Ten National Agrobiodiversity Policy Briefs for each ASEAN country;

- A final Synthesis Report (Multi-disciplinary Scientific Assessment) on the State of Southeast Asian Agrobiodiversity (in 2020) including policy and programme recommendations submitted to the CBD in coordination with ACB and SEARCA
7. End

Thank you

***

DISCUSSION Comments/Questions?
Annex 4B. Regional Workshop on Agrobiodiversity: Summary Results

Mainstreaming Biodiversity in Agriculture for Sustainable Development and Food Security in Southeast Asia

REGIONAL WORKSHOP ON AGROBIODIVERSITY

12-14 September 2017
Maejo University
Chiang Mai, Thailand

SUMMARY RESULTS

- Organized by ACB and SEARCA
- Hosted by Maejo University
- Supported by the EU-BCAMP Project, ACB, SEARCA, Nagoya University, International Center for Tropical Agriculture, World Agroforestry Center, and Bioversity International
- Gathered more than 60 experts and representatives from the ministries of environment and agriculture of the governments of 10 AMS, academic and research institutions, and international organizations all over Southeast Asia
- Inputs from 16 speakers
Objectives:

1. sharing and reporting the status of, trends, and issues on agrobiodiversity in the region;
2. level-off understanding on agrobiodiversity, its concept, related processes, and cross-cutting concerns;
3. facilitate the exchange of knowledge, lessons learned, best practices, and innovative ideas
4. identify and recommend regional mechanisms and platforms to strengthen cooperation within Southeast Asia for an effective response to challenges and drivers of change in agrobiodiversity.

Workshop Components

• Thematic sessions tackled governance, policies, and relevant legal instruments on agrobiodiversity; conservation and sustainable use; and gender and social contexts.
• Technical discussions focused on the elements of the CBD Programme of Work on Agrobiodiversity: assessment, innovations and best practices, capacity building, and mainstreaming.
Lessons and Insights

• Significance of agrobiodiversity
  • Its conservation and management are dynamic, multi-faceted, multi-dimensional
  • Approaches should consistently sustain life

• Policies, strategies and legal frameworks
  • Conservation of rural landscapes should mainstream agrobiodiversity
  • Many mainstreaming efforts but not concerted, not lobbied to be included in regional strategic plans

• Linking agrobiodiversity with other sectors and issues
  • Interactions and links between agrobiodiversity and other issues should be emphasized to underscore its importance
  • “other concerns” include food systems, nutrition, ecosystem services, sustainable production & consumption, among others

Lessons and Insights

• Capacity Building
  • An inter-sectoral approach (covering forests, agriculture and conservation sectors) is necessary to emphasize the need for cooperation
  • Plenty of disconnect in relation to collective efforts and methods

• Learning from successful initiatives
  • Learn from successful models

• CEPA
  • Raise awareness on importance of agrobiodiversity since it impacts on the well-being of the people
Highlighted Recommendations for advancing the Agrobiodiversity agenda in ASEAN

- Draft ASEAN RAP on Agrobiodiversity Mainstreaming, Conservation and Sustainable Use 2017-2020
- Implement the RAP approved by AMS under the CBD Programme of Work on Agrobiodiversity
- Design and secure funding for at least 4 major interrelated projects to support CBD PoW on Agrobiodiversity
- Support integration and cross-sectoral and interdisciplinary collaboration among intergovernmental, academic, CSOs, and communities
- Link to possible initiatives under the ASEAN Work Plan on Education (AWPE) 2016-2020

Highlighted Recommendations for advancing the Agrobiodiversity agenda in ASEAN

- Facilitate interdepartmental institutional linkage at the higher level
- Include in the curriculum on agrobiodiversity in the school system
- Create activities to attract the younger generation and involve them in agrobiodiversity
- Develop materials that highlight agrobiodiversity preferably in the local language
- Mobilize other networks and partners
Thanks for listening
Annex 5. Country Presentations

Cambodia

Mainstreaming Biodiversity for Food and Agriculture

Agrobiodiversity in Cambodia

Case study on Giant Ibis Rice

Presented by: Mr. Sophanna Ly

Ministry of Environment, Cambodia

General Directorate of Administration for Nature Conservation and Protection

Bangkok, 04th Dec 2018

Outline

• Project History
• Terms and Conditions of the Project
• Implementation processes
  - Contract with farmers
  - Internal control system implementation
  - Non-technical conformity control
• Results
• Conclusion

Ministry of Environment, Cambodia
Project History

Ibis Rice project was established in 2009:
- to improve local villagers’ livelihoods living within the protected area;
- to encourage farmers in conservation work

*The project has been implemented by Sonsom Mlup Prey (SMP) in partnership with Wildlife Conservation Society (WCS) and Department of Environment of Preah Vihear province.*
Terms and Conditions

Members of the Ibis Rice project has to comply with:

- Principle of saving wildlife
- Principle of organic practice
Implementation processes

Agricultural contract
Non-technical conformity control

- List of farmers able to sell rice to the project

- WCS (non-technical conformity control team)
  - Meeting with relevant stakeholders in target areas for non-technical conformity confirmation
  - Land use monitoring and control
  - Internal control so as meet the principle of organic practice

Land use monitoring and control

Ministry of Environment, Cambodia
Internal control system

Result
Among 498 membership farmers in 2017:
- 30 were non-technical conformity;
- 72 didn’t have enough land use data

<table>
<thead>
<tr>
<th>Type of certified paddy</th>
<th>Amount of paddy (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic</td>
<td>298,662</td>
</tr>
<tr>
<td>Adhoc</td>
<td>165,127</td>
</tr>
<tr>
<td>Ibis 1</td>
<td>140,433</td>
</tr>
</tbody>
</table>
Products from the project


Thank you for your listening!
ASEAN Multi-sectoral Workshop on Mainstreaming Biodiversity for Food and Agriculture

4-6 Bangkok, Thailand

Agrobiodiversity is Uniquely Lao

- Laos is considered a mega-divers country and point of origin
- Support developing a healthy, resilient and sustainable food system in Laos
Initiative of Mainstreaming agrobiodiversity in agriculture and food

Purpose:

• To save existing genetic resources of these diversities for sustainable use;

• To develop and improve locally available species of genetic resources to increase productivity to meet the Lao government strategy for external/internal market demand;

Agro-Biodiversity and Sustainable Food systems – two competing visions

Industrial food system

Leads to high input mono-cropping excessive pesticide use

Imported, processed, mass produced, low nutritional value food

Healthy, resilient landscape

Balanced diet, high nutrition based on local biodiversity
ABD Hypothesis

Agro-biodiversity based development with a focus on multi-functional landscapes offers a more viable alternative to improve upland livelihoods and food security than large scale mono-culture cropping systems.

TABI is an initiative

- Initiative working with multiple partners and government agencies – cross sector – multi-disciplinary

[Logos of various organizations]
Agrobiodiversity Knowledge Platform (PhaKhaolao)

- NAFRI, under the SSWG-ABD developing web-based platform to capture knowledge and link new and old generations

Value Added
- Provide a one-stop shop for information on ABD to range of stakeholders
- Repackage already existing information in formats that can be used by different actors
- Ensure local knowledge on ABD is documented and not lost
- Link Lao information to global datasets and knowledge
- Tap into and promote increasing interest in Lao food and products

PhaKhao Lao represents a new way of thinking and working

- Inspirational new ideas (business, careers, etc.)
- Entertaining stories, recipes, how to video
- High quality info about ABD products and usage
- State of the art technology
- Appeals to Lao national pride
- Partnerships with restaurants, private sector and farmer groups
PhaKhao Lao gets to important Food system themes

- **Contribute to food security and nutrition sensitive agriculture**: Improve diets based on local Lao products that are readily available

- **Contribute to growing awareness about food**: Lao Farmers, Urban people and youth are more connected, linked and social
  - Promote high value nice market products
  - Interested in healthy diets, food sources
  - Lao Pride

- **Indigenous knowledge and products**: Focus on linking generations – we have incredible knowledge base that is quickly getting lost

- **Changing the way we thinking about food**: To promote ABD need to change perceptions and attitudes and need to look beyond technical information.

---

**Outcome:**

- **Website Traffic**
  - 59,272 Page Views
  - 37,701 Unique Page Views
  - 7,050 Unique Users
  - 54% Bounce Rate

- **Demographic**
  - Between 18-34: 50% of users
  - 53% Women, 47% Men
  - Users from Laos: 78%
  - Mobile Usage: 80%

- **Top 5 Pages**
  1. Homepage
  2. Knowledge Base
  3. Inspire
  4. Contribute
  5. Publications

- **Social Media**
  - Facebook: Phakaolao
  - Twitter: @Phakaolao
  - YouTube: phakhao lao

---

**Come Join Us**

Discover new ideas and contribute to a new movement to celebrate Lao food and natural products.

Get involved by providing: comments, photos, documents or information on profiles or suggestions for new profiles.
Key Takeaway for Phakhaolao

- The main demographic is young people (18-34) who are actively using the platform, particularly the Facebook page. Both men and women are actively participating.
- The bounce rate is at 54% showing that users are not staying on the site.
- Mobile usage is high highlighting the need to make Phakhaolao more accessible through a mobile application.
- The homepage remains an important entry point.
- Facebook is an important conversation space and can be used to promote products, themes or entrepreneurship.
- Documents and publications are popular and should be featured more prominently.

Moving forward

- Develop thematic Mini-sites on specific themes in partnership with other partners:
  - Impacts on Pesticides on agrobiodiversity
  - Agrobiodiversity and nutrition
  - Business Support services
  - Food safety
  - Agrobiodiversity and Agro-ecology
- Develop livestock, fish and aquatic species and insect categories in knowledge base.
- Improve Document repository.
- Further improve the Mobile app to provide services to young.
- Building the Agrobiodiversity importance and encourage youth to get involved.
- Collaborate and coordinate with relevant agencies such as ASEAN Member States, FAO, INGOs, Projects on bio-diversity, etc.
Thank you
The Current Status of Plant Genetic Resources in Myanmar

- Largest country in SEA - 676,577 sq km
- Located at junction of three different ecoregions: Sino-Himalayan, Indochinese region, Malayan Peninsular region
- High variation in rainfall, temperature, topography – created diverse agroecosystem
- Diversity of tropical, subtropical and temperate species are distributed - PGR serves as foundation for further agricultural development.
Threats to Agrobiodiversity

- In Myanmar, ecosystems and biodiversity face threats from a range of underlying causes.

**Major Threats**

- Replacement of local landraces with modern varieties,
- agricultural area expansion,
- overgrazing,
- dams and canal construction and urbanization are major threats to biodiversity
- Climate change- further threatens the future biodiversity

To sustain biodiversity, a wide variety of projects- implemented by national staff and collaboration with international organizations.

---

**National Biodiversity Strategy and Action Plan (NBSAP)**

- Since 2009, NBSAP was developed by Forest Department
- Finalized in 2011 and approved by Union Government in 2012
- Disseminated to relevant organizations and sectors
Mainstreaming Biodiversity into Agricultural sector

- Ministry of Agriculture, Livestock and Irrigation is implementing PGR conservation
- Seed Bank (1990) - affords to expand existing ex situ conservation and enhance utilization of different crop species and their wild relative species.
- PGR at Seed Bank - sharing to local and international organizations for research

How Myanmar Conserve its Diversity?

Five Activity of Seed Bank

Exploration, collection and introduction

Characterization, multiplication and regeneration

Pre-breeding

Conservation

Data management
Crop germplasms in Myanmar Seed Bank (March 2017)

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Crop group</th>
<th>No. accession</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rice</td>
<td>7757</td>
</tr>
<tr>
<td>2</td>
<td>Wild rice</td>
<td>180</td>
</tr>
<tr>
<td>3</td>
<td>Legume</td>
<td>1578</td>
</tr>
<tr>
<td>4</td>
<td>Cereal</td>
<td>2233</td>
</tr>
<tr>
<td>5</td>
<td>Oilseed</td>
<td>797</td>
</tr>
<tr>
<td>6</td>
<td>Other</td>
<td>125</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>12670</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Short-term Storage</th>
<th>Medium-term Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10°C</td>
<td>- 5°C</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>30 - 40%</td>
<td>30 - 40%</td>
</tr>
<tr>
<td>Conservation Life</td>
<td>3 - 5 Years</td>
<td>20 - 30 Years</td>
</tr>
<tr>
<td>Container</td>
<td>Polystyrene bottle</td>
<td>Aluminium foil</td>
</tr>
<tr>
<td>Storage Seed Weight (gm)</td>
<td>300 - 500</td>
<td>40 - 100</td>
</tr>
<tr>
<td>Storage Capacity (Accession)</td>
<td>21600</td>
<td>20000</td>
</tr>
</tbody>
</table>

Collaborative activities with international institutions

- Cooperation on biotechnology and PGR with **RDA**, Korea
- Regional information network system for PGRFA with **FAO**
- Characterization and regeneration of some crop species in collaboration with **global crop diversity trust, Italy**.
- Accessing discovery and bio-prospecting the rice biodiversity in the **GMS countries**
- Collaborative research project on Genetic Resource for Food and Agriculture with **NARO, Japan**
- Project for Strengthening Rice Breeding System based on Genomic and Information in Myanmar with **JICA and JST**
Recent Evaluation Research Activities

- Evaluation and of core-collected rice germplasm for biotic/abiotic and quality traits
- Evaluation of lowland rice germplasm for bacterial blight disease resistance
- Evaluation of Myanmar Rice germplasm for nitrogen use efficiency
- Assessment of genetic variability among rice germplasm (Glutinous rice, Pawsanhmwe)
- Assessment of yield and yield components characters of Myanmar rice germplasm (Namathalay, Inmayebaw)
"Morphological characterization of Namathalay rice accessions"

Introduction

- *Namathalay*, Myanmar local variety may be a specialty rice.
- An **ancient rice** variety – popular for good quality
- It is said the grain is small and **easy to digest** that it can be specialty for sick and aged people.
- Although limited literature has pointed out, a common belief says “**Thalay** rice was known since Buddha time”.
- Some evidences also indicate the **long history** of *Namathalay* rice in Myanmar.
- By oral history, this rice was specially served to the **royal kings** just after harvesting and later on consumed according to **royal officials**, **rich men** serially and **normal people** at last.
Introduction (continued)

- It has abiotic stress tolerance ability that can be grown in water logged area where modern variety cannot.
- Less requirement of nitrogen fertilizer means environmentally sound rice variety.
- In 1990, the Seed Bank was established and many collecting missions have conducted exploration and collection on multi-crop genetic resources.
- Among collected samples Namathalay rice landraces are included and conserved in the Seed Bank.
- The value of conserved germplasm lies in the contribution to crop improvement program, and the primary objective of the genebank is to conserve and safeguard genetic diversity for potential future use in research and breeding programs.

Introduction (continued)

- So, assessment of genetic variation and characterization, and evaluation in Namathalay rice become important.
Objectives

Therefore this study was carried out

- 1) to characterize genetic variation and
- 2) to evaluate agronomic traits in *Namathalay* rice accessions.

Material and method

At experiential field of Seed Bank of Department of Agricultural Research, Myanmar
Since 2015

Photo - A collection of 26 *Namathalay* rice accessions
Findings (continued)

- Too short grain length and narrow width, were 5.6 mm and 2.1 mm, and 1000-grain weight was interestingly 2.5~3 times lower than normal rice varieties.
- On the basis of morphological characters, Namathalay accessions could be classified into 3 groups.
- Some rare genotypes could be existed in the germplasm.

Since grain yields were greater than mean, the two accessions, Acc. 1214 and Acc. 1719 may be important for further varietal improvement for development of Namathalay rice.

Intersectoral Collaboration

- Initial part of project- implemented by only DAR
- Later, implementing varietal improvement project- collaborate with Department of Agriculture(DOA) in various regions- conducting research – to know regional adaptability
- Interministerial linkage with Ministry of Commerce – export certificate
How the project move forward

• Implementing varietal improvement program for development of Namathalay rice through breeding program
The Philippines initiatives on mainstreaming biodiversity for food and agriculture

ASEAN Multi-Sectoral Workshop on Biodiversity for Food and Agriculture
4-6 December 2018 Amari Watergate Bangkok, Thailand

Outline of the Presentation

I. The Department of Agriculture – Department of Environment and Natural Resources (DA-DENR) Partnerships for Biodiversity Conservation: Mainstreaming in Local Agricultural Landscapes/Biodiversity Partnership Project (BPP)

   1. Objective
   2. Strategy
   3. Relevant Project Outcomes

II. Intersectoral linkages and collaboration

III. Lessons Learned

IV. Sustaining or moving forward
**Objective**

The Department of Agriculture – Department of Environment and Natural Resources (DA-DENR) Partnership for Biodiversity Conservation: Mainstreaming in Local Agricultural Landscapes/BPP

- To demonstrate how Local Government Units (LGUs), with enhanced capacities, and working together with local and national partners, can plan and manage economic activities and growth in ways that meet landscape-level biodiversity conservation and sustainable use objectives in critical biogeographic regions.

**Strategy**

- Programmatic approach

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**Project Outcomes**

1. **National level systems, policies, tools and capacities are in place to support Local Government Unit (LGU)-level biodiversity conservation efforts**

2. LGUs have the tools and capacities to integrate sustainable management into decentralized government structures

3. Systems, policies, tools and capacities for landscape-level biodiversity conservation and sustainable development are applied at eight pilot sites
**Linkages/Collaboration**

- Strong partnership within the DA Technical Working Group.
- Established linkage between/among the national government, NGOs and the local/community partners.

**Lessons Learned**

- Differences in soil and climatic condition, topography, etc
- Interventions must be area-specific
- Continues support both financial and technical

**Moving Forward**

- Assist the LGUs in crafting their local ordinance and provide guidance on how they can incorporate biodiversity-friendly programs in their CLUP
- Encourage the adoption and implementation of biodiversity-friendly agricultural practices (BDFAPs)
- Expedite the approval of the Philippine National Standard for BDFAPs
- Continue the conduct of Training of Trainers (ToT)
Thank you!
ASEAN Multi-sectoral Workshop on Mainstreaming Biodiversity for Food and Agriculture

Country Sharing - Singapore

Table of contents

- About Us: Agri-Food & Veterinary Authority of Singapore (AVA)
- Local Production
- Project Highlight
About Us

**OUR VISION**
Safe food, healthy animals and plants for Singapore; trusted and respected globally.

**OUR MISSION**
Ensure a resilient supply of safe food.
Ensure the health and safeguard the welfare of animals.
Safeguard the health of plants.
Facilitate agri-trade.
Nurture and inspire staff to be the best we can be!

Local Production

| 3 Egg Layer Farms | >50 Vegetable Farms | >120 Coastal & Land-Based Fish Farms |

| CURRENT PRODUCTION AS A % OF CONSUMPTION (CURRENT TARGETS) |
|------------------|---------------------|-------------------------------------|
| EGGS             | LEAFY VEG           | FOOD FISH                           |
| 24% (30%)        | 12% (10%)           | 10% (15%)                           |
Local Production

Local farms are adopting technologies to enhance productivity and sustainability

- Composting
- Bio-fertiliser and soil amendment
- Climate appropriate varieties

Project Highlight

Novel Integrated Agrotechnologies, Plant Nutrients, and Microbials for Improved Production of Green Leafy Vegetables in Singapore

Collaborative research between local university, research institute, farm and government to develop novel technology platforms

- Beneficial microbial consortia to improve defence against pests
- Novel soil substitute from food waste
- Nutritional value and growth properties of Asian vegetables
Thank you
Thailand

Agrobiodiversity Management of DOA Thailand for Sustainable Agriculture and Conservation

Kunyaporn Pipithsangchan
Director of Genebank Research and Development Group
Department of Agriculture, Ministry of Agriculture and Cooperatives, Thailand

What is Agrobiodiversity?

Agrobiodiversity or Agricultural biodiversity includes all components of biological diversity of relevance to food and agriculture: the variety and variability of plants, animals and micro-organisms at genetic, species and ecosystem level which are necessary to sustain key functions in the agro-ecosystem, its structures and processes.

CIP-UPWARD, 2003
Why is Agrobiodiversity important?

- Provides humans with food, clothing, shelter, fuel, medicines, and with incomes and livelihoods
- Sustains the food and nutrition security
- Performs ecosystem services which are essential to human survival
- Enhances the ability to adapt to changing environment
- Encompasses socio-cultural, economic and environmental elements

https://www.cbd.int/agro/whatis.shtml
Ministry of Agriculture and Cooperatives

- Office of the Permanent Secretary for Ministry of Agriculture and Cooperatives
- National Bureau of Agricultural Commodity and Food Standards
- Office of Agricultural Economics
- Rice Department
  - Department of Fisheries
  - Department of Livestock Development
  - Department of Agriculture
    - The Queen Sirikit Department of Sericulture
- The Royal Irrigation Department
  - Department of Royal Rainmaking and Agricultural Aviation
  - Land Development Department
  - Agricultural Land Reform Office
- Cooperative Auditing Department
  - Department of Agricultural Extension
  - Cooperative Promotion Department

Public Organizations
- Agricultural Research Development Agency
- Highland Research and Development Institute
- The Golden Jubilee Museum of Agriculture Office

State Enterprises
- Marketing Organization for Farmers
- Dairy Farming Promotions Organization of Thailand
- Fish Marketing Organization
- Rubber Authority of Thailand


The 20-Year MOAC Strategy (2017-2036)

Strategy 1: Strengthening the Farmers and Farmer Institutions

Strategy 2: Increasing the Productivity and Quality Standards of Agricultural Commodities

Strategy 3: Increasing Competitiveness in the Agriculture Sector through Technology and Innovations

Strategy 4: Balanced and Sustainable Management of Agricultural Resources and the Environment

Strategy 5: Development of Public Administration System
The 20-Year MOAC Strategy (2017-2036)

Strategy 1: Strengthening the Farmers and Farmer Institutions

Strategy 2: Increasing the Productivity and Quality Standards of Agricultural Commodities

Strategy 3: Increasing Competitiveness in the Agriculture Sector through Technology and Innovations

Strategy 4: Balanced and Sustainable Management of Agricultural Resources and the Environment

Strategy 5: Development of Public Administration System

---

The 20-Year MOAC Strategy (2017-2036)

**Strategy 4: Balanced and Sustainable Management of Agricultural Resources and the Environment**

**Directions**

- To rehabilitate and conserve agricultural resources
- To promote environmental friendly agriculture
- To manage water resource
- To manage agricultural land
- To build immunity in agriculture against climate change
Department of Agriculture

Project: Agrobiodiversity Management

Policy 9: Maintaining stability of the resource base and balance between conservation and sustainable use

Objective: To promote the conservation and sustainable use of biodiversity and biological resources

Indicator 2.5.1 - Number of plant and animal genetic resources for food and agriculture secured in medium or long term conservation facilities

https://www.moac.go.th/performance-files-402891791798
Department of Agriculture

Project: Agrobiodiversity Management

The 20-Year National Strategic Plan (2017-2036)
Strategy 5: Creating growth on the basis of quality of life that is friendly to the environment

The 12th National Economic and Social Development Plan (2017-2021)
Strategy 4: Strategy for environmentally-friendly growth for sustainable development

The 20-Year Strategic Plan for the Ministry of Natural Resources and Environment (2017-2036)
Strategy 1: Forest and Biodiversity Management

The 20-Year Ministry of Agriculture and Cooperatives Strategy (2017-2036)
Strategy 4: Balanced and Sustainable Management of Agricultural Resources and the Environment

Department of Agriculture

Director General

Deputy Director General

Senior Experts

Internal Auditor Group

Public Sector Development Group

Administration
1. Office of the Secretary
2. Personnel Division
3. Planning and Technical Division
4. Information Technology Center
5. Agricultural Regulatory Office

Research and Applied Research Department
1. Plant Protection Research and Development Office
2. Agricultural Production Sciences Research and Development Office
3. Biotechnology Research and Development Office
4. Postharvest and Products Processing Research and Development Office
5. Plant Varieties Protection Office
6. Plant Standard and Certification Office

Production Research and Development
1. Field Crop and Renewable Energy Crops Research Institute
2. Horticultural Research Institute
3. Rubber Research Institute
4. Agricultural Engineering Research Institute

Regional Research and Development
Office of Agricultural Research and Development Region 1-8

Department of Agriculture

Project: Agrobiodiversity Management

Conservation

Local Wisdom

Research

ORDPB & RSPG

Office of the Royal Development Projects Board (ORDPB)
Plant Genetic Conservation Project Under the Royal Initiation of Her Royal Highness Princess Maha Chakri Sirindhorn (RSPG)

Conservation

Cassava Germplasm Bank

> 800 accessions

Rayong 11 cultivar
Conservation

**DOA Genebank**

- 32,866 accessions 163 species at seed genebank
- *In vitro* conservation and cryopreservation at research stage
- Plant regeneration and evaluation at Biotechnology Research and Development Office, Office of Agricultural Research and Development Region 1-8
Conservation

Bangkok Herbarium > 100,000 specimens

Voucher specimens in 2017

- 887 dried specimens, 195 spirit specimens, and 103 dried fruits/seeds specimens

Conservation

Insect Museum

- Sample of insect more than 8,000 species (520,000 Samples)
- Insect type specimen > 100 specimens
Conservation

Field Collection

- 69 regional crop research centers and stations throughout the country
- Over 5,800 accessions of field collection

Local Wisdom

Project: Traditional knowledge and plant resources biodiversity conservation in local communities

- Food, clothing, medicine, dyeing color, and rite

Source: Monitoring and Evaluation Group, Planning and Technical Division, DOA
Research

Research and development on conservation and utilization of plant and microbiological biodiversity to add value and innovation

- 12 Projects (2016-2021)
- Mrs. Khanitha Wongwathanarat, Expert of Genetic Conservation, BIRDO
Ultimate Goal

To develop the personnel and plant genetics resources for the maintenance of plant varieties and for the development to be advantageous for the farmer and business section of the country.

Activities of Projects

1. Protection of plant genetic
2. Exploration and collection of plant genetic
3. Planting and preservation of plant genetic
4. Conservation and Utilization of plant genetic
5. Plant germplasm database center
6. Planning of plant varieties development
7. Creating the awareness of the population in plant genetic
8. Special activities for supporting plant genetic conservation

http://www.rspg.or.th/rspg_eng/index.htm

3. Planting and preservation of plant genetic

- Responsible Agencies: 21 agricultural center/stations under DOA

- Chiang Rai
- Phetchabun
- Loei
- Nakhon Nayok
  (Canarium pimela)
- Olive
  (Olea europaea)
- Ye Man
  (Amidolum chathalycanum)
- Trang
- Phrae
- Narathiwat
- Banana
  (Musa spp.)
- Pak Plung-Deang
  (Baselia rubra)
- Shampoo Ginger
  (Zingiber zerumbet)

Source: Office of the Royal Development Projects Board (ORDPB), Department of Agriculture
NPGRC is the integrated project under the collaboration of 17 organizations in order to conserve the PGRs diversity and provide the plant genetic database of Thailand.

- Ministry of Agriculture and Cooperatives (MOAC): DOA, RD, GSDES
- Ministry of National Resources and Environment (MONRE): RDF, DNP
- Ministry of Science and Technology (MOST): NSTDA
- Universities: KU, KKV, MU
- Companies: Advanta Pacific Seeds, East West Seed
- Other Organizations: STI, BEDD, TDI, NESDB, PBMAT, RSPG
Collaboration: Overseas

1. Collaboration for Achievement and Development of Genebank Management
   - Phase I-II (2017): Knowledge and technology exchanges
   - Phase II (2016): Genebank Management for Sustainable Utilization

2. Collaboration of Scientists Exchange between DOA Genebank and NARO

Collaboration: Overseas

Thailand-Sweden Joint Project (NordGen-DOA)
   - Phase I (2015): Plant Genetic Resources (PGR) Database Management
   - Phase II (2016): Genebank Management for Sustainable Utilization

10 YEARS 2008–2018
Safeguarding seeds for the future

Sign an agreement for new depositor

Seed deposit at SGSV
**Challenges**

- Inadequate
- Need to update skills & knowledge
- Inadequate & Out of date
- Not suitable for specific works

**Overcoming**

- Strengthen HR to become smart officer (e.g. training & workshop)
- Construction
- Share among organizations

**Challenges**

- Omit unutilized crop wild relatives
- Participate in biodiversity conservation

**Overcoming**

- Strengthen to become smart farmers
- Concern their roles in conservation

**Human Resources**

**Infrastructure**

**Farmers & Local Communities**

**Climate Change**

- Extinction risk of native & wild species
- Loss of natural habitats

- Extinction risk assessment & Back-up
- Ex situ conservation
Move Forward...

- Conserve the viability of plant genetic resources in DOA Genebank and develop techniques for long-term conservation
- Maintain plant genetic resources both in situ & ex situ for conservation and sustainable use
- Develop human resources to become smart farmers, researchers and officers
- Back-up seeds from DOA Genebank to deposit at Svalbard Global Seed Vault
- Carry on the missions corresponding to Convention on Biological Diversity's Targets

Thank you very much
Mainstreaming Biodiversity in Agriculture

Environment perspective

Mainstreaming Biodiversity in Agriculture

- the Integrating of two concepts between sustainable agriculture and biodiversity conservation

Agrobiodiversity

- approaches on food production that underpins biodiversity conservation in existing agricultural landscapes
Classification of Agrobiodiversity

National Activities of Agriculture in Environment Sector
Thailand Master Plan for Integrated Biodiversity Management 2015-2021 (B.E. 2558-2564)

01. Integrate biodiversity value and management with participation at all levels

02. Conserve and restore biodiversity

03. Protected country’s right and enable management to enhance and share benefits from biodiversity in line with green economy

04. Develop biodiversity knowledge and database systems to be consistent with internationally recognized standards

Conserve and protect genetic diversity of agricultural plants, livestock, aquatic and domesticated animals, wild and native varieties, microorganisms, including other species that have economic, cultural, social and ecological values.

Manage agricultural areas, aquaculture, and forestry in a sustainable manner, with responsibility for the environment to assure conservation of biodiversity and ecosystems.

Develop and promote implementation of good practices for sustainable production and consumption in order to ensure food and health security and community strength.
On Going Project

The Economics of Ecosystems and Biodiversity (TEEB):

Supporting Biodiversity and Climate Friendly Land Management:

Mainstream biodiversity conservation and sustainable use into agricultural landscape, by following TEEB approach

• Donor: International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)

• Partner Institution: ONEP

• Implementing organization: UN Environment – TEEB Office
International Activities of Agriculture in Environment Sector

Mainstreaming Biodiversity

2016

Agricultural Forestry
Fisheries Tourism

2016-2025

ASEAN Strategic Plan on Environment 2016-2025
Strategic Priority 1 National Conservation and Biodiversity
Programme 3: Agricultural Biodiversity
ASEAN Region

- First Activities: Regional Workshop on Agrobiodiversity in September 2017, Chiang Mai, Thailand
- Key recommended:
  1. Draft ASEAN Regional Action Plan on Agrobiodiversity
  2. Collaboration for Agrobiodiversity in ASEAN
  3. Develop and Secure funding
  4. Mainstreaming into education sector

Thank you
Khob-Khun-Ka
Mainstreaming Biodiversity for Food and Agriculture in ASEAN: The Need for Effective Inter-Sectoral Linkages and Collaboration

Some Options and Recommendations for Discussion

Percy E. Sajise
Senior Fellow, SEARCA
Honorary Research Fellow, Biodiversity International
Adjunct Professor, UPLB School of Environmental Science and Management

A. What is Biodiversity for Food and Agriculture and Why is it Important
B. Some Practices of Biodiversity Deployment for Food, Agriculture, and Ecosystem Services
C. Context of Mainstreaming Agricultural Biodiversity Cooperation for Food and Nutrition Security in Pursuit of Sustainable Development
D. Some Ideas on Basic Guiding Principles for Inter-Sectoral Linkages and Collaboration to Mainstream Agrobiodiversity
E. List of Possible Areas for Action and Collaboration at National and Regional Levels
F. Monitoring for Assessment of Progress and Feedback for Improvement
Agricultural Biodiversity or
AGROBIODIVERSITY

• Biodiversity for food and agriculture includes all the components of biological diversity of relevance to food and agriculture together with the components of biological diversity that constitute the agro-ecosystem: the variety and variability of animals, plants and micro-organisms, at the genetic, species, and ecosystem levels, that sustain the functions, structure, and processes of the agro-ecosystem (CBD 2008).

Agricultural Biodiversity or
AGROBIODIVERSITY

... a sub-component of total biodiversity modified and managed by human beings to generate the needed requirements for food, clothing, and shelter, as well as ecosystem services
Agro-ecosystems are known for their multi-functionality and not just production.

**Some High-biodiversity agro-ecosystems:**

1. Mixed Cropping System
2. Crop-livestock production
3. Crop-fish production and
4. Forest-crop-livestock production system

![Figure 1. Summary of benefits derived from deployment of biodiversity for food and agriculture in various types of agro-ecosystem](image)
The use of multi-species and multi-breed of crops and animals is one strategy that many traditional farmers, including those in AMS, use to maintain high diversity in on-farm niches, and to buffer against climatic and economic adversities. Known for their use in:

• Integrated Pest Management Practices (IPM)
• Increasing yield - both in the kinds and quality of products
• Risk management in response to fluctuations in market demands and prices
• Climate Change Adaptation
• Efficient nutrient and mineral cycling for sustainability
• Pollination Management

Mainstreaming - defined

“... the integration of the conservation and sustainable use of biodiversity in cross-sectoral plans such as poverty reduction, sustainable development, climate change adaptation/mitigation, trade and international cooperation, as well as sector-specific plans such as agriculture, fisheries, forestry, mining, energy, tourism, transport, and others ...”
Agrobiodiversity is also a key element in some areas of the existing blueprints of the ASEAN pillars:

- **ASEAN Economic Community (AEC) [B.8, C.5, C.6].** Sustainable economic development (i.e., FAf), good agricultural and forestry management practices, ensuring food security, food safety and better nutrition, increasing resilience to climate change, natural disasters and other shocks, tourism science, and technology for environmental protection and climate change;

- **ASEAN Socio-Cultural Community (ASCC) [C.1, C.4, D.3].** Conservation and sustainable management of biodiversity and natural resources, environmental education, green lifestyle, public-private partnership, enhanced capacities for climate change, sustainable management of biodiversity for marine, coastal, wetlands and peatlands, policy, capacity building, attainment of Aichi targets, and regional and global networking;

- **ASEAN Political-Security Community (APSC) Blueprint 2025 [B6.2, B3.1].** Maritime cooperation in protection of marine resources, biodiversity, and combatting transnational crimes, i.e., wildlife and timber.

SDG 2030 goals that these ASEAN Community Blueprints are related to are the following:

- **Goal 2:** Zero Hunger
- **Goal 6:** Clean Water and Sanitation
- **Goal 12:** Sustainable Consumption and Production
- **Goal 13:** Climate Action
- **Goal 14:** Life below Water
- **Goal 15:** Life on Land
- **Goal 17:** Partnership for the Goal
A regional workshop on **Mainstreaming Biodiversity in Agriculture for Sustainable Development and Food Security in Southeast Asia** was held at Maejo University, Chiang Mai, Thailand on 12–14 September 2017. Organized by the ASEAN Center on Biodiversity (ACB) and the Southeast Asian Ministers of Education-Regional Center for Graduate Study and Research in Agriculture (SEAMED-SEARCA), it was attended by 64 experts and representatives from different sectors in the AMS working around the theme of agrobiodiversity, as well as representatives from the academe and international organizations.
Participants from this regional workshop identified actions needed for this mainstreaming process based on stated aims and the various elements of the CBD Program of Work on Agrobiodiversity. These aims and elements were transformed into strategies needed to attain the overall goal “to conserve and sustainably utilize biodiversity for food and agriculture, together with its associated knowledge system, to ensure the attainment of the ASEAN Vision of sustainable and resilient communities.” These components, strategic thrusts, and identified activities/actions from the regional workshop can provide the elements of the suggested Regional Action Plan for Mainstreaming, Conservation, and Sustainable Use of Agrobiodiversity (RAP-AMCSU).

The goal of the RAP-AMCSU is to “Conserve and sustainably utilize biodiversity for food and agriculture, together with its associated knowledge system, to ensure the attainment of the ASEAN Vision of sustainable and resilient communities.” The output of the regional workshop was used to identify the components, strategic thrust and list of activities/actions for the RAP-AMCSU. It also identified possible collaborative and follow-up activities (Tables 1 and 2) in selecting the strategic thrust and activities to prioritize for regional collaboration, some key considerations are the following:

- Already an existing and on-going concern in the region; with passionate "nodal champions"
- Promotes understanding of the importance and values of agrobiodiversity in promoting sustainability and multifunctionality of agroecosystems for through evidence-based good practices
- Leverage for wide scaling and up scaling (national, regional)
MONITORING FOR ASSESSMENT OF PROGRESS AND FEEDBACK FOR IMPROVEMENT

1. Need to set up a multi-hierarchical monitoring and evaluation system;
2. System must include feedback mechanisms at all hierarchical levels;
3. Identify [key] institutional, economic, socio-cultural, and communication and scaling indicators;
4. Baseline information on the indicated monitoring and evaluation indicators must be established before these indicators can be used for monitoring and evaluation (M&E).

Thank You
For Your Attention