

## Annexes

### Annex 1. Production and export of forest products in ASEAN

#### Annex 1A. Production and export of select plantation crops in ASEAN between 2000–2010 and 2011–2013.

Major Crops	Production				Export Quantity				Export Value			
	Ave. Qty./Yr. (million mt)		Ave. Growth Rate/Year (%)		Ave. Qty./Yr. (million mt)		Ave. Growth Rate/Year (%)		Ave. Qty./Yr. (million mt)		Ave. Growth Rate/Year (%)	
	2000-2010	2011-2013	2000-2010	2011-2013	2000-2010	2011-2013	2000-2010	2011-2013	2000-2010	2011-2013	2000-2010	2011-2013
Oil Palm	29.50	46.20	8.31	6.13	22.62	34.73	10.28	5.33	12.59	32.52	24.37	5.16
Coconut	35.56	37.32	1.55	0.26	2.18	2.39	2.68	0.02	1.37	2.66	13.86	1.15
Rubber	6.80	8.75	4.34	5.29	6.08	7.47	3.58	4.89	9.23	24.64	27.19	4.68
Coffee	1.82	2.34	2.40	6.60	1.39	1.91	4.11	5.75	1.66	4.24	14.72	15.53
<b>All major crops</b>	<b>73.68</b>	<b>94.62</b>	<b>4.33</b>	<b>3.62</b>	<b>32.27</b>	<b>46.50</b>	<b>7.66</b>	<b>4.85</b>	<b>24.85</b>	<b>64.06</b>	<b>14.72</b>	<b>15.53</b>

Source of base statistics: FAO Statistics, 2000-2013, retrieved from [www.faostat3.fao.org](http://www.faostat3.fao.org) on 9 June 2016.

#### Annex 1B. Production and export of timber and fuel products in ASEAN from 2000–2010 and 2011–2013

Products	Production				Export Quantity				Export Value			
	Ave. Qty./Yr. ('000 cu m)		Ave. Growth Rate/Year (%)		Ave. Qty./Yr. ('000 cu m)		Ave. Growth Rate/Year (%)		Ave. Val./Yr. (USD million)		Ave. Growth Rate/Year (%)	
	2000-2010	2011-2013	2000-2010	2011-2013	2000-2010	2011-2013	2000-2010	2011-2013	2000-2010	2011-2013	2000-2010	2011-2013
Wood Fuel	185,247	161,433	(1.9)	(1.7)	12	35	120	123	2	5	64	20
Industrial Roundwood	108,401	127,402	2.6	1.6	4,882	20,685	23	9	280	1,403	26	10
Sawnwood	17,408	20,288	2.2	1.9	6,825	6,458	5	3	1,939	2,558	7	13
<b>All products</b>	<b>311,055</b>	<b>309,123</b>	<b>(0.2)</b>	<b>(0.1)</b>	<b>11,719</b>	<b>27,178</b>	<b>13</b>	<b>7</b>	<b>2,221</b>	<b>3,966</b>	<b>10</b>	<b>12</b>

Source of base statistics: FAO Statistics, 2000-2013, retrieved from [www.faostat3.fao.org](http://www.faostat3.fao.org) on 9 June 2016.

**Annex 1C. Production and export of timber and fuel products in ASEAN Region from 2000–2010 and 2011–2013**

Products	Production				Export Quantity				Export Value			
	Ave. Qty./Yr. (million MT)		Ave. Growth Rate/Year (%)		Ave. Qty./Yr. (million MT)		Ave. Growth Rate/Year (%)		Ave. Val./Yr. (USD billion)		Ave. Growth Rate/Year (%)	
	2000-2010	2011-2013	2000-2010	2011-2013	2000-2010	2011-2013	2000-2010	2011-2013	2000-2010	2011-2013	2000-2010	2011-2013
Wood Charcoal	2.52	3.09	2.45	2.80	0.34	0.55	7.27	13.73	0.08	0.22	9.16	20.71
Woodbased Panel	36.97	41.33	1.95	2.63	25.02	24.48	1.23	4.45	8.29	10.96	2.88	2.27
<b>All products</b>	<b>39.49</b>	<b>44.42</b>	<b>1.97</b>	<b>2.64</b>	<b>25.37</b>	<b>25.02</b>	<b>1.29</b>	<b>4.67</b>	<b>8.37</b>	<b>11.18</b>	<b>2.93</b>	<b>2.62</b>

Source of base statistics: FAO Statistics, 2000-2013, retrieved from [www.faostat3.fao.org](http://www.faostat3.fao.org) on 9 June 2016.

**Annex 1D. Production and export of pulp and paper and paper products in ASEAN, 2000– 2010 and 2011–2014**

Products	Production				Export Quantity				Export Value			
	Ave. Qty./Yr. (million MT)		Ave. Growth Rate/Year (%)		Ave. Qty./Yr. (million MT)		Ave. Growth Rate/Year (%)		Ave. Val./Yr. (USD billion)		Ave. Growth Rate/Year (%)	
	2000-2010	2011-2014	2000-2010	2011-2014	2000-2010	2011-2014	2000-2010	2011-2014	2000-2010	2011-2014	2000-2010	2011-2014
Wood Pulp	18.13	25.04	4.87	0.45	5.61	8.27	6.08	9.31	2.25	4.09	10.16	8.38
Paper and Paper Products	24.04	30.87	4.77	0.68	5.83	7.10	3.48	5.57	4.27	6.75	9.98	2.60
<b>All Products</b>	<b>42.17</b>	<b>55.91</b>	<b>4.66</b>	<b>0.57</b>	<b>11.45</b>	<b>15.37</b>	<b>4.31</b>	<b>7.41</b>	<b>6.52</b>	<b>10.83</b>	<b>9.07</b>	<b>4.09</b>

Source of base statistics: FAO Statistics, 2000-2013, retrieved from [www.faostat3.fao.org](http://www.faostat3.fao.org) on 9 June 2016.

## Annex 2. Role of partner organizations in coastal and marine conservation

Organization / Website	Role/s
<p>BirdLife International</p> <p><a href="http://www.birdlife.org">http://www.birdlife.org</a>; <a href="http://www.birdlife.org/asia/partnership">http://www.birdlife.org/asia/partnership</a></p>	<p>BirdLife International is one of the world's largest nature conservation partnerships. BirdLife believes that connecting local people and working for nature through national and international partnerships are key to conserving biodiversity. Rigorous science informed by practical feedback from projects on the ground in important sites and habitats enables BirdLife International to implement successful conservation programmes for birds and all nature. BirdLife International provides both practical and sustainable solutions significantly benefiting nature and people.</p> <p>The BirdLife Partnership works with governments, regional fisheries management organizations, international conventions and fishing fleets around the world to reduce seabird mortality through fishing “bycatch”, which has made seabirds the most threatened of all groups of birds. BirdLife Partners have also been engaged in mapping the most important marine areas (including coastal waters and the high seas) for seabirds. More than 3,000 marine Important Bird and Biodiversity Areas have so far been recognized, the largest network of sites of importance for marine biodiversity.</p>
<p>Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)</p> <p><a href="http://www.pemsea.org/about-pemsea">http://www.pemsea.org/about-pemsea</a></p>	<p>PEMSEA is an intergovernmental organization operating in East Asia to foster and sustain healthy and resilient oceans, coasts, communities and economies across the region. PEMSEA serves as the regional coordinating institution for the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) adopted by 14 countries (Brunei Darussalam, Cambodia, China, DPR Korea, Indonesia, Japan, Lao PDR, Malaysia, Philippines, RO Korea, Singapore, Thailand, Timor Leste and Viet Nam). For over 20 years, PEMSEA has made significant contributions and tangible benefits for coastal and ocean ecosystems and coastal communities in East Asia through partnerships and integrated solutions.</p> <p>Building on practical experience gained in the application of integrated coastal management (ICM), PEMSEA has developed an ICM system that addresses complex coastal management concerns covering governance and various sustainable development aspects including habitat protection, restoration and management. Recognizing the changing and emerging issues in ocean governance, countries of the region have adopted the SDS-SEA 2015 to contribute in meeting new global commitments on sustainable development. One of these is the Aichi Biodiversity Targets. In 2015, the CBD released a publication highlighting the benefits of ICM processes in addressing biodiversity conservation and its sustainable use, and provided guidance on how ICM application helps achieve the Strategic Plan for Biodiversity 2011–2020 and its Aichi Biodiversity Targets. To date, PEMSEA continues to scale up ICM implementation in the region. Notably, about 17 percent of the region's coastline is covered by ICM programs, creating important impact to more than 31,000 km of coastline and over 146 million people living in coastal and watershed areas. A set of PEMSEA services (advisory, project, knowledge, certification and secretariat services) have also been developed to support the unique needs of governments, companies, communities and other organizations operating in the coastal and marine environment .</p>
<p>Southeast Asian Fisheries Development Center (SEAFDEC)</p> <p><a href="http://www.seafdec.org/about/">http://www.seafdec.org/about/</a></p>	<p>SEAFDEC is a regional treaty organization that promotes fisheries development in ASEAN. Member Countries comprise the ASEAN Member States and Japan. Its mandate is “to develop and manage the fisheries potential of the region by rational utilization of resources for providing food security and safety to the people and alleviating poverty through transfer of new technologies, research and information dissemination activities”.</p> <p>SEAFDEC operates through the Secretariat located in Thailand and has five departments that focus on different aspects of fisheries development: Training Department in Thailand; Marine Fisheries Research Department in Singapore; Aquaculture Department in the Philippines; Marine Fishery Resources Development Management Department in Malaysia; and Inland Fishery Resources Development and Management Department in Indonesia. SEAFDEC conducts research and development activities in AMS under interdisciplinary approaches covering responsible fisheries and aquaculture technologies and practices, post-harvest technology and practices, fisheries management concepts and approaches, and policy and advisory services. These contribute to designing strategies for sustainable resource use.</p>

Organization / Website	Role/s
<p>The East Asian-Australasian Flyway Partnership (EAAFP)</p> <p><a href="http://www.eaaflyway.net/">http://www.eaaflyway.net/</a></p>	<p>The EAAFP is an informal and voluntary initiative, launched on 6 November 2006, that protects migratory waterbirds, their habitat and the livelihoods of people dependent upon them. The 35 Partners include 17 national governments, as well as intergovernmental agencies, international non-government organizations and international business organizations.</p>
<p>ASEAN Mangrove Network</p> <p><a href="http://www.amnetsec.org">www.amnetsec.org</a></p>	<p>The ASEAN Mangrove Network was established to improve the livelihood and environment of people living along the coastal areas of the ASEAN region. The network aims to share good practices, lessons learned, collaboratively develop conservation practices and empower stakeholders on sustainable mangrove ecosystem management.</p>
<p>Conservation International (CI)</p> <p><a href="http://www.conservation.org">www.conservation.org</a></p>	<p>CI's mission is to build upon a strong foundation of science, partnership and field demonstration and empower societies to responsibly and sustainably care for nature and global biodiversity, for the well-being of humanity.</p> <p>CI's ultimate goal is to improve human well-being, particularly in ways that are most dependent on the essential services that nature provides: fresh water, food, health, livelihoods, and climate resilience. It undertakes conservation work involving local governments and other partners to promote the protection of terrestrial and coastal ecosystems through science, policy, and partnerships with countries, communities and companies.</p>
<p>International Union for Conservation of Nature (IUCN)</p> <p><a href="http://www.iucn.org/backup_iucn/iucn.org/what/index.html">http://www.iucn.org/backup_iucn/iucn.org/what/index.html</a></p>	<p>IUCN is a membership union uniquely composed of both government and civil society organizations. It provides public, private and non-governmental organizations with the knowledge and tools that enable human progress, economic development and nature conservation to take place together. As the world's largest and most diverse environmental network, IUCN harnesses the experience, resources and reach of its 1,300 member organizations and the input of some 15,000 experts. The ability to convene diverse stakeholders and provide the latest science, objective recommendations and on-the-ground expertise drives IUCN's mission of informing and empowering conservation efforts worldwide.</p> <p>IUCN's work is focused on three priority areas: 1) valuing and conserving nature implemented through biodiversity conservation, emphasizing both tangible and intangible values of nature; 2) effective and equitable governance of nature's use consolidates IUCN's work on people-nature relations, rights and responsibilities, and the political economy of nature; and 3) deploying nature-based solutions to global challenges in climate, food and development, tackling problems of sustainable development, particularly in climate change, food security and social and economic development.</p> <p>In Asia, IUCN's flagship coastal conservation initiative Mangroves for the Future is currently in its 10th year of operation. With a presence in 11 countries, the programme promotes an integrated ocean-wide approach to coastal management and to building the resilience of ecosystem-dependent coastal communities.</p>
<p>The Nature Conservancy (TNC)</p> <p><a href="http://www.nature.org/ourinitiatives/regions/asiaandthepacific/coraltriangle/overview/index.htm">http://www.nature.org/ourinitiatives/regions/asiaandthepacific/coraltriangle/overview/index.htm</a></p>	<p>TNC works with partners to create lasting conservation results that benefit marine life, local communities and economies. TNC is supporting the Coral Triangle Initiative, specifically supporting species conservation through community programs, engaging locals in making their lands and waters more resilient to the effects of climate change and establishing MPAs and MPA networks.</p>
<p>World Wide Fund for Nature (WWF)</p> <p><a href="http://www.worldwildlife.org/">http://www.worldwildlife.org/</a></p>	<p>WWF's mission is to conserve nature and reduce the most pressing threats to the diversity of life on Earth. WWF's oceans work focuses on healthy and resilient marine ecosystems that support abundant biodiversity, sustainable livelihoods, and thriving economies. In the ASEAN Region, WWF is most active in the Sulu-Sulawesi Marine Ecoregion and participates in the trinational sea turtle initiative, and promotes sustainable fisheries, MPA networks and policy development.</p>

### Annex 3. Organizations in ASEAN that work on taxonomy

Regional Organizations
1. Southeast Asian Regional Centre for Tropical Biology (SEAMEO BIOTROP) – conducts activities emphasizing the empowerment of human resources in ASEAN covering research, training, networking, personnel exchange, and information dissemination on tropical biology.
2. Flora Malesiana Foundation – has the most extensive work on plant taxonomy in the region. Since 1938, it has described and published more than 6,000 plant species in the Malesian region or almost all AMS. The foundation deals with international working groups on specific groups of plants at all taxonomical levels. It regularly holds an international symposium every three years to evaluate the progress of taxonomic work in the region. One of the main concerns of the foundation is capacity building in collaboration with international experts. The Flora Malesiana publication complements other publications on local flora such as <i>Flora of the Philippines</i> , <i>Flora of Malaya Peninsula</i> , <i>Flora of Indonesia</i> and others.
3. Plant Resources of South-East Asia (PROSEA) – is an international and interdisciplinary program focused on documenting information on plant resources in agriculture, forestry, horticulture, and botany. PROSEA synthesizes information on around 7,000–8,000 useful plants in ASEAN, which can be freely used for education, extension work, research, and industry purposes. Its main office is at the Research Center for Biology-LIPI, Bogor, Indonesia with representative institutional members in Malaysia, Philippines, Thailand, and Viet Nam.
Government Institutions
1. Indonesian Institute of Sciences (LIPI) – serves as the scientific authority on biodiversity in Indonesia and is the country's focal point for CITES; collection and conservation center of plants; management authority for botanic gardens; center for national scientific documentation and information; national focal point of international scientific organizations; and houses the National Education Center for Indonesian Researchers; among others. LIPI conducts various studies and programs on themes such as food and health; environment and biodiversity; policy and good governance; population and society; earth science, aquatic systems, and energy; product, commodity and technology; new energy and renewable energy resources; marine life census; post genomic molecular farming; and genetic materials for pharmaceuticals; among others.
2. Herbarium Bogoriense (BO) – is the old and biggest herbarium in ASEAN with a million sheets of herbarium specimens. It has experts on various plant groups, modern taxonomic facilities, and a living collection. It is ideal for taxonomic work and training courses related to biodiversity.
3. Forest Research Institute Malaysia (FRIM) – conducts research and training activities that are organized into the following areas: forestry and environment, forestry biotechnology, forest products; forest biodiversity, natural products, and economic and strategic analysis.
4. Office of the Forest Herbarium, Royal Forest Department, Thailand – undertakes research on plant and fungal taxonomy, forest ecology, ethnobotany, and conservation biology under the auspices of the Department of National Parks, Wildlife and Plant Conservation of Thailand. Its activities include botanical inventories, plant specimen collection, plant taxonomic research, survey and classification of forest types, and collaborative research.
Academic Institutions
1. Universiti Brunei Darussalam (UBD) – conducted studies under the biodiversity and environmental studies theme including: Multifaceted Study of Invasive Acacia Species in Brunei; Conservation and Phytobiochemical Studies of Plants and Herbs from Brunei, Studies on Scleractinian Corals, Studies on Parasitic Flies in Brunei Darussalam, Chemical Ecology of the Brunei Estuarine System, and Molecular Phylogenetics of Commercially Important Fishes.
2. National University of Laos – collaborates on taxonomic research and activities with various international universities.
3. Universiti Sains Malaysia – offers courses and research in taxonomy, particularly on marine organisms such as corals and giant clams.
4. Universiti Malaysia Sabah (UMS) – does extensive work on taxonomy with research units and centers of excellence that aim to increase awareness and manage the natural resources and development needs of Sabah. UMS Centers of Excellence include the Borneo Marine Research Institute; Institute for Tropical Biology and Conservation; and Small Island Research Centre.
5. University of the Philippines System – conducts taxonomic research through various units. The Institute of Biology of the University of the Philippines Diliman provides courses and conducts research in taxonomy. The College of Forestry and Natural Resources (CFNR) in the University of the Philippines Los Baños (UPLB) is a center of excellence in forestry education and is at the forefront of teaching, research, and extension in ecology, biodiversity, physiology, and agroforestry in the Philippines, and has its own herbarium. The Institute of Biological Sciences in UPLB manages its own herbarium as well. The UPLB Museum of Natural History is a center for documentation, research, and information with a collection of more than 200,000 preserved Philippine animals and plants, cultures of living microorganisms, and other biota that showcase the country's rich biodiversity.

### Regional Organizations

6. Silliman University – is recognized as a Center of Excellence in Coastal Resource Management (CRM) by the United States Agency for International Development (USAID) for its research on coastal and marine species. The university has helped establish Apo Island, located off the town of Dauin, Negros Oriental, Philippines as a model marine reserve.
7. Central Mindanao University – conducts taxonomic research through the Forest Resources Development Division to ensure the sustainable management of the forest resources of the university.
8. National University of Singapore – conducts various research relevant to taxonomy.
9. Kasetsart University – conducts taxonomic research through the Faculty of Forestry and Fisheries and the Faculty of Sciences (Botany).

### Botanical Gardens

1. LIPI operates four Botanic Gardens in Indonesia, specifically Bogor Botanic Garden, Cibodas Botanic Garden, Purwodadi Botanic Gardens, and Bali Botanic Gardens.  
  
Bogor Botanic Gardens – is known as Kebun Raya Bogor, covers 0.87 sq km and contains 13,983 different kinds of plants. The garden is ideal for the cultivation of tropical plants as it rains almost daily in Bogor, even in the dry season. The garden thrived under the leadership of renowned botanists such as Johannes Elias Teijsmann, Rudolph Herman Christiaan Carel Scheffer, and Melchior Treub. Established on 18 May 1817, it is the oldest botanical garden in ASEAN and continues to serve as a major research center for agriculture and horticulture.  
  
Cibodas Botanical Garden – lies between Mt. Gede and Mt. Pangrango-West Java at an altitude of 1,300–1,425 meters above sea level. It has a humidity of 80-90 percent and an average rainfall of 3,000-4,000 millimeters annually. The garden covers 1.25 sq km and contains about 1,600 plant species from the mountains. The garden was established by Johannes Elias Teijsmann in 1852.  
  
Purwodadi Botanic Garden – covers 0.85 sq km with 14,500 living collections of 3,770 plant species from dry climate regions. Located at 300 meters above sea level, it was established on 30 January 1941 and is located in Purwodadi Village, Purodadi-Pasuruan, East Java, about 65 km south of Surabaya.  
  
Bali Botanic Garden – covers 1.57 sq km and houses 2,000 species of plants, such as orchids, ceremonial plants, medicinal plants, cacti, ferns, aquatic plants, and trees, all coming from montane areas of eastern Indonesia such as Bali, Nusa Tenggara, Sulawesi, Maluku, and Papua. Its main functions are exploration, inventory, research, conservation, recreation, and education. The institution offers a number of scientific services and facilities, including a herbarium, seed bank, library, glasshouses, nursery, and plant database, to support plant research and conservation
2. Singapore Botanic Gardens – plays an important role in fostering agricultural development, orchid breeding and hybridization, and development of horticultural and botanical plants. It continues to be a leading tropical botanical institute, and has been inscribed as the first and only tropical botanic garden on the UNESCO World Heritage List.
3. Queen Sirikit Botanic Garden (QSBG) – aims to conduct and promote research in the study and conservation of Thai flora. It has a glasshouse complex, some of which are dedicated to specific types of plants; an orchid breeding center; and trails to areas of climber and medicinal plants. The Botanic Gardens Organization, under the Ministry of Natural Resources and Environment, oversees five other botanic gardens throughout Thailand. They are Romklao Botanic Garden (Phitsanulok province), Rayong Botanic Garden (Rayong province), Koa Ra Botanic Garden (Phangnga), Meaung Pon Botanic Garden (Khon Kaen), and Phra Mae Ya Botanic Garden (Sukhothai).

### Natural History Museums

1. National Museum of Brunei Darussalam – features an expansive natural history research and collection through the Natural History Gallery to provide understanding of the people and natural environment of Brunei Darussalam.
2. National Museum of the Philippines – acquires, documents, preserves, exhibits, and fosters scholarly study and appreciation of specimens and artifacts representing the Philippines' unique natural heritage. It manages national reference collections in natural history and permanent research programs in biodiversity.
3. Lee Kong Chian Natural History Museum – is a specimen-based biodiversity research institute under the National University of Singapore with a strong emphasis on taxonomy, systematics, and conservation. It aims to nurture interest in biodiversity and associated environmental issues; maintain and grow a natural heritage knowledge base; and support research in Singapore and with regional and international partner institutions.