



Integration for Biodiversity in Indonesia

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1. Introduction

Indonesia reported¹ on players in biodiversity management in Indonesia; the process of integrating biodiversity considerations into sectors, such as National Development System in Indonesia, integration of biodiversity considerations into the national development plan, mainstreaming of biodiversity considerations into sectoral strategic planning, mainstreaming of biodiversity considerations into local government coordination, the integration of biodiversity consideration into national strategies and programs (Millennium Development Goals (MDGs), PNPM Mandiri (National Program on Community Empowerment), United Nations Framework Convention on Climate Change (UNFCCC), Indonesia National Strategies and Action Plan on Wetland Management 2004, environmental impact assessment (AMDAL), strategic environmental assessment (SEA), incentive Program, contribution of biodiversity integration into the implementation of IBSAP.

2. Players in biodiversity management in Indonesia

In order to protect and preserve the richness of Indonesia's biodiversity, Indonesia had ratified the UNCBD in 1994. As the Party to the Convention, Indonesia has the obligation to achieve the objectives set in the UNCBD. In implementing the UNCBD, The Ministry of the Environment (MoE) is appointed as National Focal Point (NFP). However, in 2006 eight task forces were formed to assist MoE in managing the broad issues of biodiversity. Among the tasks to the Task Force were to monitor the implementation of the UNCBD, to support and to give inputs to MoE as the National Focal Point in formulating policies and to integrate programs related to the implementation of UNCBD, including preparing the National Report, and setting Indonesian position for COP and SBSTTA. Thus far the activities that have been carried out related to the Task Forces are UNCBD program dissemination from MoE to the task forces (Ministry of Marine and Fisheries, Ministry of Agriculture), taxonomy need assessment which was done by Task Force Global Taxonomy Initiative (GTI) and dissemination of COP decisions.

Sectors that are examined in this chapter are the sectors that identified in the IBSAP. In managing biodiversity, especially in implementing UNCBD, the roles of institutions have been identified in IBSAP.

Thus, to simplify the study, the sectors/institutions' role were divided into: 1) institutions that have direct relations with the management of natural resources/biodiversity, or that have the role to achieve more than 4 objectives identified in IBSAP, and (2) institutions that do not have direct relations with the management of natural resource/biodiversity, or that have the role to achieve less than 4 objectives identified in IBSAP.

The first group was identified as Ministry of the Environment, Ministry of Agriculture, Ministry of Forestry, Ministry of Marine and Fisheries, local governments, and The Indonesian Institute of Sciences

¹ Indonesia (2009). Fourth National Report: the Convention on Biological Biodiversity, Ministry of Environment, 2009, 113 pp.

(LIPI). The second group are Ministry of Energy and Mineral Resources, The National Development Planning Agency, State Ministry of Research and Technology/ The Agency For the Assessment and Application Technology-BPPT, Ministry of Finance, Ministry of Home Affairs, Indonesia Central Bureau of Statistics, Ministry of Public Works, Ministry of Justice and Human Rights, Ministry of National Education and Indonesia Investment Coordinating Board. This chapter only focuses on institutions that already integrate the biodiversity aspects into their strategic plans.

The process of integrating biodiversity considerations into sectors.

3. National Development System in Indonesia

National Development System in Indonesia is designed in the Long Term National Development Plan (RPJPN). RPJPN aimed at the integrated development directions and priorities that will be implemented step by step through National Mid Term Development Planning (RPJM). The implementation of RPJM is translated into strategic plans of each sectors /departments which include vision, missions, objectives, goals, and work plans. Current RPJPN is RPJPN 2005 – 2025, which is referred in drawing up the local RPJP, 5-year RPJM, Sectoral Strategic Planning, and Government Work Planning (RKP).

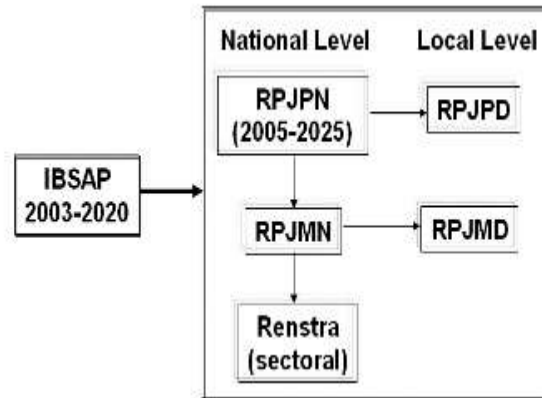
4. Integration of biodiversity considerations into the national development plan.

As a country with abundant biodiversity, Indonesia needs to plan the management of biodiversity holistically through comprehensive, effective, and participative strategies and action plans. The strategies and action plans are described in IBSAP which was issued in 2003. IBSAP aims to direct and nationally synergize the formulation of policies and activities related to biodiversity. IBSAP document is expected to be used as foundation for activities related to biodiversity in every sector sustainably, among others through the integration of IBSAP into RPJPN.

Considerations on sustainable use of biodiversity are integrated in one of RPJPN's missions. The mission is reflected in the first, second, third, and the fourth of RPJM, where biodiversity will continuously be preserved and used in order to maintain nation's value added and competitiveness, thus it could increase future national development capital.

Biodiversity as one of Indonesia resources has given significant contribution to development capital and to national gross domestic product and labor creation. However, natural resources including biodiversity are not yet managed in a sustainable way. The increasing threats toward biodiversity has been the focus in RPJM I (2004-2009), which is described in the goals of environmental development, that is preservation and sustainable use of biodiversity as directed in IBSAP 2003-2020. The goals were then detailed into protective and conservative natural resources programs and other related programs. Eight MDGs objectives are also the foundation in designing RPJMN 2004-2009.

Figure 1. Integration IBSAP into Indonesian Development Plan.



RPJPN : National Long-Term Development Planning

RPJPD : Local Long-Term Development Planning

RPJMN : National Mid-Term Development Planning

RPJMD : Local Mid-Term Development Planning

Renstra : Strategic Planning

5. Mainstreaming of biodiversity considerations into sectoral strategic planning

In implementing national development plan, each ministry need to design a five-year strategic plan which covers vision, mission, objectives, goals, and sectoral programs. In the context of sectoral and crosssectoral integration of biodiversity considerations, the grouping of departments/institutions, as previously mentioned, is applied. The first group of institutions have included biodiversity consideration into their strategic plan. In some of institutions, they have integrated biodiversity consideration consistently, reflected from their organizational vision and missions, and even to their programs. However, there is currently no mechanism exclusively designed to ensure whether the implementation of strategic planning contributes in avoiding and reducing adverse impacts on biodiversity. Existing mechanism is generally aimed at monitoring, evaluating and reporting on the performance of the strategic planning.

The Ministry of Marine Affairs and Fisheries has consistently integrated biodiversity consideration. The Ministry has included biodiversity consideration into the Strategic Plans of Marine Affairs and Fisheries 2005 – 2009. The considerations are included in the objectives, goals, programs, and organizational policies. In their vision and missions, the ministry has defined that there should be a sustainable balance between the use and the preservation of biodiversity. The vision and missions are then translated into the ministry's objectives and goals that also included sustainable use and conservation of biodiversity. The objectives and goals were then translated into programs.

One of the programs directly related to the above objective is the conservation and the supervision of marine and fish resources. The program aims to ensure a good quality of maritime and fishery resources

by decreasing the use of them. From the above objectives, goals, programs, and policies, it is obvious that the ecosystem approach has been used. As an example, the strategic plan includes fishermen empowerment in order to increase their income and to increase marine contribution to national economy while still conserving the marine and fishery resources.

Another example of complete integration of biodiversity consideration into sectors is from The Ministry of Forestry. Until the end of 2004, the policies, and program activities in the ministry were not only referring to Act No. 41/1999 on Forestry, but also referring to Act No. 5 1990 on Conservation on Biodiversity Resources and The Ecosystem.

In carrying out their role in directing forestry development, The Ministry of Forestry has designed Strategic Plan 2005 – 2009. Among priority policies, there is one policy related with the rehabilitation and conservation of forest resources. Other policy related to the ecosystem approach is empowerment of people's economy within and surrounding the forest areas. The objective of the Strategic Plan is to achieve harmony between forestry development plan with those of other sectors. Thus, vision for forestry development is to achieve forestry management to ensure forest sustainability and to increase community wellbeing equally and sustainably. Mid term priority targets are then defined which include implementation of sustainable forest management as well as development of several self-managed National Parks. The Ministry of Forestry has also defined the mission of forestry development which is to optimize various functions of forests and water ecosystem which cover the function of conservation, protection, timber and non-timber production, and environmental services, in order to achieve a balanced and sustainable social, environmental, cultural, and economic benefits, and to ensure equal distribution of benefit sharing . These goals are in line with the objectives of the Convention and apply the ecosystem approach.

According to its vision, mission, objectives, goals, and policies, The Ministry of Forestry defined 6 (six) forestry development programs 2005-2009 which was integrated into National Mid Term Development Plan (RPJMN) 2004-2009. The main programs with biodiversity considerations are the Use of Forestry Resources Program and Natural Resources Protection and Conservation Program. These programs were then further elaborated into several main activities.

Institutionally, in order to implement sustainable forestry development, a unit under the Ministry of Forestry was created, which is called Directorate General of Forest Protection and Natural Conservation, and several Conservation Bodies of Natural Resources and National Park Offices at the local level. One of the examples of the integration of biodiversity considerations into The Ministry of Forestry's activities are shown in Table 1.

Table 1. Integration of biodiversity considerations into The Ministry of Forestry's activities

Objective	Biological resources and its ecosystem are used based on conservation principle.
Strategy	Develop and strengthen management of conservation area.
Target (Strategic)	Optimize the management and utilization of conservation area in 200 units of Conservation Area (KSA)/Natural Preservation Area (KPA)
Indicator	- Decreasing number of illegal logging in 200 KSA/KPA to 90% - Increasing number of private investment in natural

(Strategic)	tourism to 20% - Population and habitat of rare species are effectively conserved in 200 KSA/KPA. - Management in 200 KSA/KPA is optimized with increasing number of workforce and sectoral income at the minimum of 10% - Up scaling the status of National Park (technical management unit)
Policy	Forest resources rehabilitation and conservation.
Programme	Natural resources protection and conservation.
Main Activity	- Strengthening management of conservation area in 200 KSA/KPA. - Setting up management planning in 200 KSA/KPA. - Development of regulations to support management of conservation area - Reforming investment regulation of natural tourism.
Executor	Directorate General of PHKA, Secretary General, Research and Development Agency

In Strategic Plan 2005-2009, Agricultural Research and Development Agency under The Ministry of Agriculture has defined research and development's vision and missions, objectives and goals. The Strategic Plan focuses at several aspects among others conservation of agricultural genetic resources.

The balanced use of biodiversity and sustainability of resources have been considered by the R & D Board of Agriculture by defining sub-programme on research and development on biotechnology and agricultural genetic resources. The main activities under this sub-programme include enrichment, management, the use, and preservation of agricultural genetic resources that include crops, horticulture, spices and medicines, state and agricultural microbe. The conservation consideration is reflected in the strategy of Agricultural Research and Development Agency under the National Commission on Agricultural Genetic Resources in collaboration with Regional Commissions. There are 19 Regional Commissions, including those in North Sumatera, West Sumatera, Riau, Jambi, South Sumatera, Lampung, Banten, Central Java, DI Yogyakarta, East Java, South Kalimantan, Central Kalimantan, West Kalimantan, South Sulawesi, South East Sulawesi and Bali at provincial level, and in Tasikmalaya at city and district level.

Several other agencies under The Ministry of Agricultural, such as R & D Board of Agriculture, Agricultural Quarantine Agency, The Office of Medical and Aromatic Plantation Research have the role in the conservation of genetic resources conservation.

Some work units under the Indonesian Institute of Sciences (LIPI) have core competency related to soil biodiversity (i.e. Biological Research Centre, Centre for Plant Conservation of Bogor Botanical Garden, and Limnologi Research Centre, Technical Development Unit of Plant Conservation Agency- Cibodas Botanical Garden, Purwodadi and Eka-Karya, Bali), and marine biodiversity (i.e. Oceanography Research Centre and Technical Management Unit Balai Konservasi Biota Laut Ambon, Technical Management Unit Loka Konservasi Biota Laut Bitung, Biak, Tual).

Research programmes under LIPI were focused on National Research Agenda and four additional areas as LIPI's priorities including Natural Resources and Environment. Under its main tasks and functions, LIPI has four main activities including Basic Research and Applied Research in biodiversity. LIPI acts as scientific authority in biodiversity and CITES as it has reference collections including living plantations

and herbarium, international scale animal specimen as well as microbe. Exploration activities to enrich these collections have been undergoing both funded by the government and in cooperation with other local and international institutions.

LIPI organizes several programmes related to biodiversity i.e. Indonesian Biodiversity Network (NBIN), PROSEA (Plant Resources of South East Asia), and MAB (Man and the Biosphere) Programme Indonesia. NBIN is an integrated agency under the Clearing House Mechanism established by the Ministry of the Environment as the National Focal Point to the biodiversity implementation in Indonesia. PROSEA is an international cooperation programme aimed to document information on plant resources in South East Asia and make available for education, research, industry and end user.

2003-2007 Programme of the Indonesian National Committee for MAB Programme under the Division of Bioscience-LIPI was focused to respond to the challenge of harmonizing biodiversity interest with economic development in local autonomy and reform era.

The second group that have one to three objectives in IBSAP such as The Ministry of Energy and

Mineral Resources, National Development Planning Agency, The Ministry of Research and Technology, The Ministry of Finance, The Ministry of Home Affairs, Indonesia Central Bureau Statistics, The Ministry of Public Works, The Ministry of Justice and Human Rights, The Ministry of National Education, and Investment Coordinating Board, have included the environmental considerations into their strategic plans. Some of the integrations are indirectly aimed at biodiversity conservation, and the others directly aimed at natural resources conservation activities. As an example, Ministry of Finance in achieving target on national economy programme has defined attempts to develop foundation for sustainable economic growth by giving priority to education and health sectors as well as to environmental rehabilitation. In the same manner, The Ministry of Energy and Mineral Resources, as stated in its mission, objectives, and strategic goals, urges the actualization of the optimum, effective, efficient, environmentally-sound, and sustainable conservation principles in managing geological resources.

Even though not directly related to biodiversity conservation, other institutions that have indirect relation with the use of natural resources, have also integrated environmental preservation into their strategic plans. The Department has an authority to define a guideline on management and protection of natural resources related to trade sector. However, this authority has not further translated into objectives, targets or programmes of the Department's strategic planning.

Department of Cultural and Tourism in its Strategic Planning on National Cultural and Tourism Development 2005-2009 defined national tourism development targets, including increasing environmental conservation and community empowerment. Nevertheless, The Ministry of Trade and The Ministry of Culture and Tourism are not included as sectors that have the role in achieving IBSAP's objectives.

6. Mainstreaming of biodiversity considerations into local government coordination

Although not specifically referring to biodiversity conservation, Act No.32/2004 regarding Local Government stipulates that environmental control is under the authority of provincial government for provincial level, and county/city government for county/city level. In relation to local autonomy, each region is responsible for conserving the environment. The tasks for this environmental conservation are under the responsibility of regional vice-governor. Further, environmental conservation should be taken into account in rural development carried out by county/city level and or the third party by involving rural government and rural assembly. Further based on Government Regulation No. 38/2007 regarding Division of Governance among the Government, Provincial Government and Regency/City Government, biodiversity is under the responsibility of all levels of government.

With regard to the form of care from the government towards biodiversity, regencies that have most of the areas as conservation areas, and have a vital role in regional development are designated as conservation regencies. There are several regencies that are designated as conservation district. They are among others conservation districts in Kapuas Hulu, Malinau, Kuningan, and Pasir. Regional development through the Conservation County is expected to create foundation on sustainable balance use, protection and conservation of natural resources in district area, and to clearly define the local development direction related to natural resources conservation. The development program should be followed by real activities. As Conservation district, every single activity within those regencies should always refer to the principle of the rational and optimum use of natural resources, as well as to environmental conservation. In addition to this, conservation efforts should be carried out to protect ecosystem balance in the county areas, and to avoid activities carried out by other parties, whether they directly or indirectly affect the ecosystem and environmental degradation.

Another form of government care towards rescuing the ecosystem, especially in Sumatra, is the commitment to conduct ecosystem-based spatial planning, restoration of critical areas to protect the life system, protection to the areas that have vital role in the life system, biodiversity, and climate change. This commitment is expected to commence in 2009.

7. The integration of biodiversity consideration into national strategies and programs.

Millennium Development Goals (MDGs)

Eight of MDGs objectives are used as the basis in designing 2004-2009 Mid Term National Development Plan (RPJMN) and RKP. Among the problems and challenges identified in RPJMN in the environmental issue is the vested interest between natural resources economy (mining and forestry) with the environmental conservation. Biodiversity conservation considerations are included in the goals, targets, and indicators of Indonesia MDGs (goal no. 7, target no. 9) which is as follows:

Ensuring environmental conservation with the target to integrate sustainable development principles with national policy and programmes and to restore degraded environmental resources. Indicators used in achieving such targets are:

1. The ratio between tree-covered areas based on Landsat satellite images to total land areas (%);
2. The ratio between tree-covered areas based on total forest area, preservation areas, and conservation areas, including agricultural areas and community forest to total land area (%);
3. The ratio between preservation areas to total land area (%);
4. The ratio between marine protected areas to total land area (%).

PNPM Mandiri (National Program on Community Empowerment)

Indonesia has been implementing a policy towards eradicating poverty. The policy is implemented through a program that aims to increase the effectiveness of poverty eradication and workforce creation. The program which is called National Program on Community Empowerment was launched in 2007 by The President of Republic of Indonesia. The main objective of the program is to increase community involvement in the development, to increase community independency, especially to the poor community. The implementation of PNPM Mandiri also aims to help achieve MDGs' targets.

One of the local programs under PNPM Maritime and Fishery is the program of coastal community empowerment, which is integrated with The Ministry of Marine and Fishery' program. Under this program, biodiversity considerations have been included which is the monitoring of marine and fishery resources.

United Nations Framework Convention on Climate Change (UNFCCC)

Indonesia had ratified the Climate Change Convention on 1994 and Kyoto Protocol in 2004. Thereby, Indonesia has committed to undertake various activities related with climate mitigations and adaptations. In 2007, a National Climate Change Action Plan was issued.

In the activity of forestry mitigation (included in Land Use Land Use Change and Forestry) during 2005-2009, forestry mitigations were focused on five priority policies. Even though the considerations of conservation and the sustainable use of biodiversity are not directly included, however, among the priority policies, there is conservation related policy, which is land and forest rehabilitation, and forest conservation. This conservation activity aims to increase carbon sequestration and to maintain carbon stock. Forest conservation is also contributing in resilience and adaptability towards extreme climate events.

One of the incentive mechanisms which has been put into trial related to climate change mitigation was to grant a reward to regencies that could protect the vegetation in the conservation area and increase the land coverage. Besides, other positive incentives that support the prevention of forest destruction are also covered in the National Action Plan on Climate Change (RAN PI).

One activity in in climate change adaptation related with biodiversity in 2007-2009 was biodiversity inventory in Indonesia, and preservation efforts towards forest ecosystem. Climate change adaptation agenda included in National Action Plan of Climate Change which is expected to be able to decrease

ecosystem pressures, i.e. pollution and excessive utilization of natural resources, so that it could lower system devastation and species extinction.

Indonesia National Strategies and Action Plan on Wetland Management 2004

Management of wetlands in Indonesia is heavily intertwined with biodiversity considerations as they are rich with biological content. Thus, the management should be supported by various biodiversity-related laws, among others the Law on Biodiversity Convention, the Law on Bio natural resources and ecosystem, and other related regulations. In order to protect the biological richness and other uses contained in the wetland, the government has identified important wetland areas protected by the nation as conservation areas. This is also reflected in national policy on wetland management as the basis on National Strategies and Wetland Management Action Plan. These policies are also reflecting the use of the ecosystem approach in wetland management in Indonesia.

Environmental Impact Assessment (AMDAL)

Biodiversity has been considered in AMDAL. Act No. 5/1990 on Conservation of Biological Resources and its Ecosystem is used in considering types of activities that are requiring AMDAL. These considerations are legally binding through Environmental Ministerial Decree. Sectors that are requiring AMDAL such as mining and energy, health, public works, agriculture, tourism, transmigration and forest-cleared settlement, industries, transportation, trade, defence, nuclear development, forestry, and hazardous control. In addition, based on Government Regulation No. 27/1999 on Environmental Impact Assessment and Ministerial Decree No. 08/2006, one of the environmental components that should be evaluated in determining the importance of impact is biodiversity.

Strategic Environmental Assessment (SEA)

Biodiversity is considered in SEA implementation, among others in the part of analysis, and in the time when SEA is integrated with the process of spatial regional planning. In the analysis phase in SEA, several analytical frameworks of spatial planning process have been adopted. One of the frameworks is on sustainability and potentials of biodiversity. The analytical framework approach is based on ecosystem with the emphasis that there should be room for protection to maintain the availability of biodiversity as future life reservation.

In the process of integration, in order to ensure that biodiversity considerations are included in the SEA, sustainability principles fulfilment list is used, where the ecosystem borders (small islands, river area, etc.), and wetlands have been identified in the spatial planning. In addition, in the list model of sustainability indicator fulfilment, the position of planning area in the ecosystem should also be identified so that through SEA the region could be harmonized with the regional spatial planning.

Incentive Program

There are several incentive programs related with biodiversity preservation, including Kalpataru Program, Kehati Awards, and Towards Green Indonesia Program. Kalpataru is awarded to individuals or group of community that play active roles in environmental conservation efforts. Kehati Awards, which

is the initiative of Kehati Foundation (an NGO), is awarded for activities in biodiversity conservation. Towards Green Indonesia Program which is still in the stage of development, is an incentive program to local government with good performance in natural resources conservation, and the government in doing some recovery efforts towards the environmental damages (including the damage of biodiversity).

Contribution of biodiversity integration into the implementation of IBSAP

In the IBSAP 2003, many related parties in implementing biodiversity management action plan have been identified in accordance with their tasks and functions. The Objectives of Biodiversity Management Action Plans

1. To develop the quality of Indonesia individuals and society who are concerned with the conservation and sustainable use of biodiversity;
2. To strengthen resources for supporting the development of science, technology, and the application of local knowledge for the conservation and sustainable use of biodiversity;
3. To reduce and stop the rate of biodiversity degradation and extinction at the national, regional, and local levels within the 2003-2020 period, along with rehabilitation and sustainable use efforts;
4. To empower institutional, policy and law enforcement arrangements at the national, regional, local, as well as at customary level so as to be effective and conducive for the management of biodiversity in a synergic, responsible, accountable, fair, balanced, and sustainable manner;
5. To achieve fair and balance of roles and interests of Indonesian society, as well as to reduce conflict potentials among all relevant sectors in a conducive, synergic, responsible, accountable manner in the sustainable use and conservation of biodiversity.

Based on the coordination matrix concluded from the IBSAP 2003-2020, several ministries have the role in achieving objectives in biodiversity action plan. Based on literature study on several strategic plans identified in IBSAP, the Ministry of Marine and Fisheries, the Ministry of Forestry, and the Ministry of Agriculture have included biodiversity considerations into their strategic plans. The Ministry of Marine and the Ministry of Forestry have also been consistently including biodiversity considerations into their vision, mission, objectives, goals, and programs in their strategic planning.

From the analysis of sectoral strategic planning, whether it from the first or the second group of institutions, it is observed that not all sectors have integrated biodiversity considerations into their strategic planning yet. However, in the sectors that directly related with natural resources/biodiversity management, the integration of biodiversity into their strategic planning and sectoral program is assumed to give contribution to the status and trend of biodiversity, especially in the marine sector. For example, until 2008 the Ministry of Marine and Fisheries had defined 32 Local Marine Conservation Areas with the total of 3.9 million hectares through Head of Regency Decision. In addition to that, there have been some efforts to manage the conservation areas through the Technical Implementation Units /UPT that already have put in place management plans. Until 2008 there have been 105 conservation

areas with approved management plans, while 87 conservation area management plans are not approved.