

# The Biodiversity Finance Initiative – BIOFIN INDONESIA

## Policy and Institutional Review (PIR)





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INDONESIA

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# ABBREVIATIONS

AMDAL	Analisa Mengenai Dampak Lingkungan
APBD	Anggaran Pendapatan dan Belanja Daerah
APBN	Anggaran Pendapatan dan Belanja Negara
BAU	<i>Business as Usual</i>
BRK	Badan Restorasi Gambut
BIG	Badan Informasi Geospasial
Biofin	<i>Biodiversity Finance Initiative</i>
BLU/D	Badan Layanan Umum/Daerah
BUMD	Badan Usaha Milik Daerah
BUMN	Badan Usaha Milik Negara
CBD	<i>Convention on Biological Diversity</i>
CI	<i>Conservation International</i>
CSR	<i>Corporate Social Responsibility</i>
DAK	Dana Alokasi Khusus
DAS	Daerah Aliran Sungai
DNS	<i>Debt for Nature Swap</i>
DPR	Dewan Perwakilan Rakyat
DPRD	Dewan Perwakilan Rakyat Daerah
FFI	Fauna Flora Indonesia
IBSAP	<i>Indonesia Biodiversity Strategic and Action Plan</i>
ICCTF	<i>Indonesia Climate Change Trust Fund</i>
IDA	<i>International Development Agency</i>
ISPO	<i>Indonesia Sustainable Palm Oil</i>
JAI	Jenis Asing Invasif
K/L	Kementerian / Lembaga
Kehati	Keanekaragaman Hayati
Kemendagri	Kementerian Dalam Negeri
Kementan	Kementerian Pertanian
KKP	Kementerian Kelautan dan Perikanan
KLHK	Kementerian Lingkungan Hidup dan Kehutanan
KLHS	Kajian Lingkungan Hidup Strategis
LIPI	Lembaga Ilmu Pengetahuan Indonesia
LPP	Lembaga Pengkajian dan Pengembangan
LSM	Lembaga Swadaya Masyarakat
LAPAN	Lembaga Penerbangan dan Antariksa Nasional
MPR	Majelis Permusyawaratan Rakyat
NBSAP	<i>National Biodiversity Strategy Action Plan</i>

PDB	Produk Domestik Bruto
PEMDA	Pemerintah Daerah
PNPB	Penerimaan Negara Bukan Pajak
PPLH	Perlindungan dan Pengelolaan Lingkungan Hidup
RPJM	Rencana Pembangunan Jangka Menengah
RPJP	Rencana Pembangunan Jangka Panjang
RPJPD	Rencana Pembangunan Jangka Panjang Daerah
RPJM	Rencana Pembangunan Jangka Menengah
RPJMN	Rencana Pembangunan Jangka Menengah Nasional
RPJMD	Rencana Pembangunan Jangka Menengah Daerah
REKI	Restorasi Ekosistem Indonesia
RKP	Rencana Kerja Pemerintah
RKPD	Rencana Kerja Pemerintah Daerah
RENJA K/L	Rencana Kerja Kementerian/Lembaga
RENJA SKPD	Rencana Kerja Satuan Kerja Pemerintah Daerah
RKA K/L	Rencana Kerja dan Anggaran Kementerian/Lembaga
RKA SKPD	Rencana Kerja dan Anggaran Satuan Kerja Pemerintah Daerah
RAPBN	Rencana Anggaran Pendapatan dan Belanja Negara
RAPBD	Rencana Anggaran Pendapatan dan Belanja Daerah
RSPO	<i>Roundtable on Sustainable Palm Oil</i>
RTRWN	Rencana Tata Ruang Wilayah Nasional
TFCA	<i>Tropical Forest Conservation Action for Sumatera</i>
TPB	Tujuan Pembangunan Berkelanjutan
UNDP	<i>United Nations Development Program</i>
UNEP	<i>United Nations Environment Program</i>
UNFCCC	<i>United Nations Framework Convention on Climate Change</i>
UU	Undang-Undang
WII	<i>Wetland International Indonesia</i>
WWF	<i>World Wildlife Fund</i>



# FOREWORD

By the grace of God Almighty for His guidance, the Policy and Institutional Review documents has been successfully completed. The Policy and Institutional Documents that have been prepared are based on studies and analyzes related to institutional policies and actors expenditures related to Biodiversity. This document is prepared to reach the Aichi Target 20, namely the implementation of resource identification and budget effectiveness in the implementation of sustainable forest management.

Biodiversity has a relation with development and contributes directly to efforts to reduce poverty and economic growth. A balance is needed between development and sustainability of biodiversity and taking into account the factors of sustainable development, namely social, economic and ecological factors. The documents that have been compiled at this time are strived to be easily understood by the parties so that it is expected to make it easier for stakeholders to get guidance in policies and institutions that contribute to the management of biodiversity in a comprehensive and sustainable manner. Collaboration with various parties and mainstreaming of biodiversity between related sectors is a top priority that needs to be implemented in order to protect the sustainability of biodiversity in Indonesia.

We are the Directorate of Biodiversity Conservation, Directorate General of Natural Resources Conservation and Ecosystems, Ministry of Environment and Forestry expressing appreciation and gratitude for the active contributions of relevant Ministries or Institutions in the preparation of this document so that the biodiversity management process is well identified. In addition we also thanks to BIOFIN Indonesia for providing facilitation support in the preparation and implementation of the meeting activities that have been carried out.

Director of Biodiversity Conservation,

**Drh. Indra Exploitasia**



# 1

# INTRODUCTION



# 1

## Introduction

In order to achieve “Target 20” of the Strategic Biodiversity Plan, UNDP is implementing an initiative entitled BIOFIN - Biodiversity Finance Initiative, a global partnership initiative aims to raise and managing capital and using financial incentives to support sustainable biodiversity management and ecosystem.<sup>3</sup>

The BIOFIN Approach Framework is now being implemented to achieve and develop NBSAP document (National Biodiversity Strategy Action Plan). In Indonesia, the document is known as the Indonesia Biodiversity Strategy Action Plan (IBSAP). The Biofin Approach framework is developed based on studies and analysis related to institutional policies and expenditures of actors associated with biodiversity.

The objective of BIOFIN is to assist participating countries in planning biodiversity budgets to implement and achieve goals within the NBSAP. Indonesia is one of the participants in BIOFIN activities in addition to 31 other countries, including Belize, Bhutan, Botswana, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Fiji, Georgia, Guatemala, India, Kazakhstan, Kyrgyzstan, Malaysia, Mexico, Mongolia, Mozambique, Namibia, Peru, Philippines, Rwanda, Seychelles, South Africa, Sri Lanka, Thailand, Uganda, Vietnam and Zambia.

The BIOFIN process actively seeks buy-in from finance and environmental stakeholders and decision makers (e.g. ministries of finance, business organization, ministries of environment and NGOs) to identify and mobilize policies, resources and institutional capacities to implement biodiversity finance solutions. The concept of BIOFIN approach and outcomes can be seen in Figure 1.<sup>4</sup>

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<sup>3</sup> UNDP, *BIOFIN Workbook* (New York, 2016), Op.cit, 11

<sup>4</sup> UNDP, *BIOFIN Workbook* (New York, 2016), Op.cit, 12

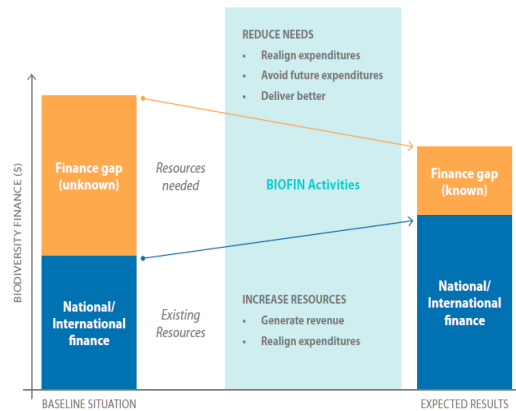


Figure 1. BIOFIN conceptual model

## Why is Biofin needed?

Currently 189 countries already have NBSAP or are in the process of revising the NBSAP.<sup>5</sup> One of the biggest challenges in NBSAP improvement is that NBSAP does not clearly identify strategies to mobilize funding resources required to implement strategies and actions. Therefore, BIOFIN is needed to help participating countries identify and develop action plans in assessing and mobilizing funding sources to finance the implementation of NBSAP.

## Review of BIOFIN Policy, Institution and Context in Indonesia

Biodiversity is closely related to development. Biodiversity provides the foundation of life on earth and contributing directly to poverty reduction, economic sustainability and the full range of Sustainable Development Goals (SDGs). The sustainability of biodiversity depends on its utilization and management. To maintain a harmonious relation between development and biodiversity, it is necessary to take into account sustainable development factors: social, economic and ecological considerations.

The impacts of development on biodiversity must also be taken into account, whether positive or negative. For example, the need for urban expansion into mangrove forest areas should take into account the impacts of physical, economic and cultural damage to local communities and the general public. By taking these factors into consideration, we can ensure a better biodiversity management.

The status of biodiversity has undergone many changes due to development. Several scientific studies have suggested that human activities put pressure

<sup>5</sup> Lihat : <https://www.cbd.int/nbsap/>

on the sustainability of biodiversity <sup>6</sup>, for example in the form of biodiversity utilization that does not pay attention to sustainability, pollution, loss of habitat. The government is one of the main actors in the conservation of biodiversity. Therefore, policies and legal frameworks, government-issued development plans and government budgets and expenditures influence the existence of biodiversity.

To ensure that the strategies and measures are implemented, all the actors involved in the business process of biodiversity management must be identified. The interaction between these actors will describe the context of biodiversity management in Indonesia. Description of policies which provide authorities and limitations on each actor will then provide an understanding of biodiversity financing in a comprehensive manner. These aspects become part of the purpose of this policy and institutional review (PIR). The PIR becomes important to help analyze the context of biodiversity financing.

The role of each actor in biodiversity management is explicitly stated in the IBSAP document. Meanwhile, the variation of the Indonesian Biodiversity trend that includes ecosystems, flora and fauna are mainly included in several sectors among others, environment, forestry, agriculture, plantation and fisheries. Nevertheless, in its development, there are several other sectors related to the three main sectors such as the tourism sector.

Three ministries, namely the Ministry of Environment and Forestry (KLHK), Ministry of Marine Affairs and Fisheries and the Ministry of Agriculture serve as regulators. Having the mandate as technical regulator in the sectors, the ministries play a dominant role in this study. The three ministries have the capacity to justify the need for biodiversity management. Therefore, in this study the three ministries are actively involved in explaining the institutional aspect of biodiversity management in Indonesia.

The data obtained using secondary and primary data collection methods provide basic information to develop this study. An overview of the needs of biodiversity management inherent in the policy and institutional context is shown in detail in several chapters. These chapters include: (i) Foreword; (ii) Vision, Strategy and Biodiversity Trends; (iii) Economic Drivers and Sectoral Linkages; (iv) Landscape of Biodiversity Financing; (v) Institutional Analysis; and (vi) Conclusion and Recommendation..

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<sup>6</sup> Millennium Ecosystem Assessment Reports (2005). Available from: <http://www.millenniumassessment.org/en/index.html>.





# 2

## VISION, STRATEGY, POLICY AND TRENDS OF BIODIVERSITY



## 2

# Vision, Strategy, Policy and Trends of Biodiversity

The substance of international targets on sustainable biodiversity management under the Aichi targets have been included in the IBSAP. In the IBSAP vision, the utilization of biodiversity includes maintenance and development efforts to improve the welfare of the community in a sustainable manner. This position also confirms that biodiversity management is consistent with the direction of government policy. Development is an approach that is required to improve the welfare of society.

IBSAP technical document embodies the Indonesian government's commitment to implement the biodiversity conventions previously ratified into laws in Indonesia<sup>7</sup>. Law serves as a legal framework to ensure that development is in line (*compatible*) with biodiversity protection measures.

In general, Indonesia has set policies on biodiversity management. This policy is concerned with the protection, recovery and utilization of biodiversity. Several key policies, among others, Law No. 5 of 1990 on the Conservation of Biological Resources and Ecosystems, Law No. 5 of 1994 on the Ratification of the *United Nations Convention on Biological Diversity*, Law No. 41 of 1999 on Forestry, Law number 1 of 2014 on the Management of Coastal Areas and Small Islands, Law No. 31 of 2004 on Fisheries and many others.

These laws are then translated into implementing regulations, ie government, ministerial regulations which are normally implemented per sector. The policies serve as a guide for the implementation of biodiversity management related to recovery, protection and utilization. The implementation of these policies is sometimes limited. The impact on biodiversity depends on the implementation of the policies by various sectors. Another important aspect is the monitoring of the implementation of these policies.

Although many policies govern biodiversity management, Indonesia still faces threats to the survival of its biodiversity including as a result of forests and land fire, illegal forest clearing for plantations, illegal fishing, environmental pollution and the introduction of invasive alien species. In terms of policy, threats to

<sup>7</sup> The United Nations Convention on Biodiversity is ratified in Law No.5 / 1994; The Cartagena Protocol was ratified in Law No.21 / 2004; The Nagoya protocol was ratified

biodiversity still need to be addressed by laws and regulations. This policy analysis shows laws and regulations that have negative impacts on biodiversity and those needed to support biodiversity conservation in Indonesia.

Laws that have negative impacts on biodiversity include:

1. Government Regulation no. 75 of 2001 on the Second Amendment to Government Regulation No. 32 of 1969 on the basic provisions of mining. This regulation authorizes the Governor / Regent / Mayor to issue mining rights in the region. This regulation causes the issuance of numerous mining concessions over forest areas. For example, data from Walhi Kaltim in 2010 shows that in Kutai Kartanegara District there are at least 41 mining permit holders in 49,575.12 Ha forest area, in addition there are 16 mining concession holders in Eco-Tourism Park (conservation area) with an area of 1426.23 hectares).<sup>8</sup>  
This condition changed with the enactment of Law No.23 of 2014 on Local Government, the implementation of government affairs in the field of mineral resources is divided between the national government and the provincial government. Thus, the Regent / Mayor can no longer issue mining concessions.
2. Presidential Decree No. 52 of 1995 on the reclamation of the north coast of Jakarta which resulted in the loss of mangrove forests on the north coast of Jakarta.
3. Regulation of Minister of Marine Affairs and Fisheries No. Per.06/Men/2008 on the Use of Fishing trawler in the northern water of East Kalimantan, meant to rival the rampant practice of *illegal fishing* and the entry of Malaysian fishermen and fishermen from other areas to East Kalimantan. However, the use of trawls resulted in the destruction of the marine environment, the loss of small fish stocks and the exclusion of small fishermen. In 2015, Regulation of Minister of Marine Affairs and Fisheries No. 2/Permen -KP/2015 on the Prohibition of the Use of *trawls* and *Seine Nets* in the Republic of Indonesia was issued.
4. Regulation of Minister of Agriculture No. 14/Permentan/PL.110/2/2009 Concerning Guidelines for the Utilization of Peat Land for Oil Palm Cultivation that allows conversion of peatlands for oil palm cultivation. In addition, this ministerial regulation requires palm oil companies that open plantations on peat land to construct canal as a plantation boundary. The construction of the canal results in the dryness of peatlands and in case of burning or fires, the fire would be difficult to extinguish.

Laws and regulations needed to support biodiversity include:

1. Regulation to support the conservation of peatlands and primary forests.  
Indonesia has had three moratoriums on new permits in peatlands and primary forests based on Presidential Decree No. 10 Year 2011 jo. Presidential Instruction No. 6 of 2013 jo. Presidential Decree No. 8 of 2015 on Moratorium

<sup>8</sup> Antara, Kukar Daerah Terparah di Kaltim Perusakan Lingkungan (August 6, 2016). See: <http://m.antarakaltim.com/berita/3263/kukar-daerah-terparah-di-kalimantan-perusakan-lingkungan>

of New Licenses and Improving Governance of Primary Natural Forest and Peatland. However, these three regulations are only limited to moratorium of new licenses. A law is needed to continue protecting peatlands and primary forests which is not only limited to moratorium of new licenses, but actually protects peatlands and primary forests.

2. Regulation to support the protection of high conservation value areas.  
RSPO (*Roundtable on Sustainable Palm Oil*) initiative, which requires palm oil companies that wish to obtain RSPO certification to protect high conservation value areas, still does not have a strong legal framework in Indonesia. Recognition of high conservation value areas is only contained in the decree on the release of forest areas for plantations and the Circular Letter of the Minister of Agraria and Spatial Plan/ Head of the National Land Agency No. 10 / SE / VII / 2015 on the issuance of permits in high conservation value forest areas.
3. Regulation to support the application of access and benefit sharing of biodiversity.  
Indonesia has ratified the Nagoya Protocol through Law No. 11 Year 2013, but there is still a need for implementing regulations for the realization of access and benefit sharing of biodiversity in Indonesia.
4. The revocation of regulations on collaborative management in forest areas has also generated anxiety about the collaborative management system that has been developed. This collaborative management has established a joint management system that reduces conflict, ensures joint monitoring and collaboration of activities that ultimately reduce management costs.

In addition to the above normative limits, biodiversity management action plan and strategies in IBSAP are attached to the macro system of development planning in Indonesia<sup>9</sup>. Several IBSAP action plans are in accordance with Indonesia's development planning document which includes long-term, medium and short-term planning and includes the central government and local governments.

Although not explicitly mentioned, the inclusion of the main development targets in the long-term development plan in Indonesia indicate that biodiversity is one of the priorities. Several indicators for the realization of a sustainable Indonesia show that biodiversity is one of Indonesia's development priorities. These indicators include:

- Improvement of natural resources management and utilization and preservation of environmental functions reflected by the maintenance of environmental functions, carrying capacity and restoration capabilities in support of harmonious, balanced and sustainable quality of social and economic life.
- Preservation of richness of species diversity and uniqueness of natural resources to realize added value, competitiveness as well as national development capital.

<sup>9</sup> Law Number 25 Year 2004 regarding Development Planning System

- Increased awareness, mental attitude, and community behavior in the management of natural resources and conservation of environmental functions to maintain the comfort and quality of life.

IBSAP integration in national planning system is crucial. This shows the role of the state and the state's commitment in biodiversity management. When the action plan contained in the IBSAP has been integrated into the country planning document, Law No.17 / 2003 ensures that the implementation of the plan will be financed through the state budget (APBN) or sub-national government budget (APBD).

IBSAP has been integrated in the national planning strategy for several development planning periods. IBSAP 2015-2020 as a revision of IBSAP 2003-2020 has not only been integrated into national planning (RPJMN) but also in the strategic plans of Ministries/Agencies<sup>10</sup>. In contrast to other countries that internalize National Biodiversity Strategies and Action Plans (NBSAP) in regulatory structure, IBSAP remains to be used as a reference in planning. This is different from other issues such as climate change<sup>11</sup> and sustainable development (SDG'S)<sup>12</sup>. Currently these two issues have been integrated into development priorities and mainstreamed in development sectors in RPJMN 2015-2019.

The intersection of biodiversity issues in climate change action plan (both adaptation and mitigation aspects) serves as a process for its integration in RPJMN 2015-2019. In general, there is a shift in development approach at this time. The government would prioritize bottom-up approach as part of efforts to improve the quality of development by reducing inequality. This has implications for the direction of biodiversity management which is attached to various regional development in Indonesia.

As part of regional development, biodiversity management is directed to serve as one of the sources of public welfare. Referring to the priority, the direction of sector development in RPJMN 2015-2019 associated with biodiversity is also inclusive. This is indicated by the involvement of local communities in the management of forest areas, coastal areas or in the issue of agrarian reform. In addition, in macro terms, the government has used several environmental targets to control overexploitation of biodiversity resources for development.

The intersection of Indonesia's development priorities with SDG's targets and the alignment of Indonesia development approach and biodiversity management makes it easier for the government to develop programs and allocate budgets. This

<sup>10</sup> In Bappenas Review, at least 26% of RPJMN 2010-2014 program activities are in accordance with IBSAP and there are five strategic plans of ministries/agencies which are in accordance with IBSAP. In RPJMN 2015-2019, several programs related to IBSAP are included in the priority on area and region development (specifically mainstreamed in natural resources and the environment). Due to the merger of the Ministry of Environment and Forestry, currently there are four ministries/agencies which are in accordance with IBSAP 2015-2020

<sup>11</sup> Presidential Regulation 61/2011 on the National Greenhouse Gas Action Plan (RAN-GRK)

<sup>12</sup> Presidential Regulation 59/2017 on Achieving Sustainable Development Goals

is not separate from the inclusion of issues of biodiversity conservation, climate change, achievement of SDG's targets and poverty alleviation in the government economic development programs.

Development planning approach is based on the *money follows program* principle, to facilitate programs and activities tagging related to climate change and biodiversity. Because BIOFIN is an investment which does not only target two outputs simultaneously ie preservation and utilization of biodiversity. Biodiversity investments contribute to the achievement of climate change outcomes while enhancing equity of development in Indonesia. Under these circumstances BIOFIN is of real value in addition to encouraging a sustainable Indonesia environment, a more resilient Indonesian society for climate change, a low-carbon economy, as well as a solution to equitable development through regional development throughout Indonesia.

It is not separate from how biodiversity contributes as one of the basic capitals for development. Biodiversity contributes many benefits to humans. These benefits can then be capitalized into welfare for society. Based on the categories of benefits, the important values of biodiversity include existence value, environmental services, option, consumption and production (IBSAP 2015-2020).

## 2.2. Contributions and Trends of Biodiversity in Indonesia

Biodiversity is defined as all living beings on earth, including all plant species, animals and microbes. The existence of biodiversity is interconnected and requires one another, to grow and multiply to form a living system).<sup>13</sup> Biodiversity is grouped into three levels: ecosystem, species, and genetic. These three levels of biodiversity are interconnected with each other. Areas that have high ecosystem diversity, usually also have high species diversity with high genetic variation as well.

### A. Ecosystem diversity

Indonesia is a country with a large ecosystems diversity. These types of ecosystems include marine ecosystems that include coral reefs, seagrass and mangroves; freshwater ecosystems covering river and lake ecosystems; terrestrial ecosystems including coastal ecosystems, lowlands and mountainous ecosystems. The ecosystem diversity includes:

- Indonesia's 39.538 km<sup>2</sup> coral reefs, of which 21% is in good condition, 42% is in relatively good condition and 34% is in critical condition (Burke et al 2012).
- The total area of seagrass in Indonesia is 31,000 km<sup>2</sup>. Currently in Indonesia there are about 20% of species from 60 species of seagrasses in the world.
- The Geospatial Information Agency (BIG) noted Indonesian mangrove forests is approximately 2,5 million ha and is declining due to the

<sup>13</sup> IBSAP 2015-2020. *Strategi dan Rencana Aksi Keanekaragaman Hayati Republik Indonesia*.

conversion of mangrove land (5<sup>th</sup> National Report on Biodiversity).

- The total karst area in Indonesia is 154,000 km<sup>2</sup> with unique biodiversity and landscape which are highly sensitive and fragile. The main threat to this ecosystem is mining activity, such as mining for marbles and cement raw materials.
- Plants have quite a high number of critical species (115 species) compared to fauna (69 species), whereas endangered species for fauna (197 species) is higher compared to flora (77 species). Similarly, the number of vulnerable flora (212 species) is lower than the number of vulnerable fauna (536 species)

#### B. Species diversity

Species diversity include marine and terrestrial biota. Both types are divided into 4 main categories namely flora, fauna, microbes and algae. With the vast sea area coverage and limitations of marine taxonomists, the identification of marine species are not as complete as terrestrial biota species. Based on the IBSAP 2015-2020 document, at least 6396 species of marine biota are identified. This number is much less than the type of terrestrial biota that have been identified. At least about 60,312 species of terrestrial biota are identified.

#### C. Genetic Diversity

Genetic diversity is a level of biodiversity that refers to the total number of genetic variation in the entire species. The sources of genetic diversity are derived from any biological organism (plant, animal and microbial) containing functional units of heredity that have real value and potential).<sup>14</sup>

The land fishery sector has the advantage and uniqueness to be developed to improve community livelihood, given the high potential with varieties that are endemic which blend in with the local communities. Its distinctive habitat is the source of its genetic resources. The endemic species has the advantages of being able to adapt to local ecosystems. The genetic sources can be used for further development, especially in aquaculture, in order to have a higher economic value.

<sup>14</sup> LIPI, *Kekinian Keanekaragaman Hayati Indonesia*, Lembaga Ilmu Pengetahuan Indonesia, Kementerian PPN/ Bappenas, Kementerian Lingkungan Hidup. (Jakarta:2014).



# 3

## ECONOMIC DRIVERS AND SECTORAL LINKAGES



# 3

## Economic Drivers and Sectoral Linkages

### 3.1. The Importance of Biodiversity in the Indonesian Economy

The sustainability of biodiversity is highly dependent on natural and human factors. This section discusses both positive and negative changes, which include an overview of the driving factors, the sector that leads to the change, the causes of change and policy factors as well as market forces that cause changes in biodiversity. Negative trends or negative biodiversity changes are trends that cause biodiversity damage. The positive trend is a positive change for biodiversity management. Discussion of the positive and negative trends of biodiversity status is divided into land and sea groups for each of discussion.

Such trends occur because of the incentives of the benefits of biodiversity resources in Indonesia. The ecosystem service values and economic contribution of biodiversity are assessed based on the following approach:

- a. Provisioning services such as food, water, raw materials, genetic resources, medicinal resources, ornamental resources species, human habitat and transport.
- b. Regulating services such as air quality regulation, climate regulation, moderation of extreme events, regulation of water flows/hydrological regimes, water purification/detoxification and waste treatment/pollution control, erosion prevention, soil formulation/conservation, pollination, biological control, biodiversity and nursery service, gene pool protection/endangered species and nutrient cycles
- c. Cultural services such as aesthetic, recreation & tourism/ecotourism, wilderness (remote-non-use), educational, spiritual & artistic inspiration, cultural heritage and identity and information for cognitive development
- d. Supporting services such as nutrient cycling and maintaining the condition of earth.<sup>15</sup>

The significance of biodiversity in economic development is represented by its contribution to Gross Domestic Product (GDP). The figure below shows the condition. Time series data (2010-2016) show that the extractive sectors, which is a combination of agriculture, livestock, forestry and fisheries on average accounts

<sup>15</sup> Badan Pusat Statistik (BPS), *Statistik Indonesia*. (Jakarta:2014)

for 14% of total GDP .<sup>16</sup>

In addition to the extractive sectors, the tourism sector that heavily utilize environmental services of biodiversity contributes significantly to the GDP. Sectors which include hotel businesses, restaurants, transport, construction and communications, during this period accounted for an average of 3% of GDP.

The average accumulation of agricultural sector and the provision of accommodation and food and beverage reaches 17% per year. Trends indicate that these two sectors will have a significant role in the Indonesian economy. This is not separate from the declining contribution of mining and quarrying sectors to the GDP.

The total of economic value of Indonesia's forest is USD 24.7 billion. With an area of 81,964,217 hectares, the economic value per hectare is USD 301.85.<sup>17</sup> Meanwhile, the economic value of the mangroves in the Mahakam Delta is Rp 503 billion in 2012<sup>18</sup> with an area of 29,600 ha in 2009. If this is the basis for calculation, the total area of Indonesia mangrove forest is 3,244,018, 46 ha with an economic value of Rp 55 trillion per year.

Marine ecosystems also have enormous economic value. According to Burke (2012), the economic value of Indonesia's coral reefs per year is USD 2 billion, including the value of coral reefs in Raja Ampat of USD 9.5 million.<sup>19</sup> The economic value of some of these ecosystems has become a catalyst in producing value added economy, especially in the agriculture and tourism sectors.

In addition, biodiversity also contributes to the processing industry, especially in the drug industry subsector. This is not independent of the direct utilization of biodiversity into traditional medicine. The export value of traditional medicine is USD 113 million/per year. The economic contribution of biodiversity to Indonesia amounted to USD 329.9 billion per year.<sup>20</sup> The value of economic contribution mentioned above can give an idea on the importance of biodiversity for development.

<sup>16</sup> Badan Pusat Statistik (BPS), *Statistik Indonesia*. (Jakarta:2014)

<sup>17</sup> Ministry of Environment and Forestry, *Strategi Nasional Pengelolaan Ekosistem Mangrove*. (Jakarta: 2013)

<sup>18</sup> Wahyuni, Y. Puteri, E.I.K. Simanjuntak, S., *Valuasi Total Ekonomi Hutan Mangrove di Kawasan Delta Mahakam*. Jurnal Penelitian Kehutanan Wallacea. 3 (1): 1-12.

<sup>19</sup> Burke, L. Reytar, K. Spalding, M. Perry, A. *Reefs at Risk Revisited in the Coral Triangle*. (WRI:2012)

<sup>20</sup> IBSAP 2015-2020, Op. cit.,

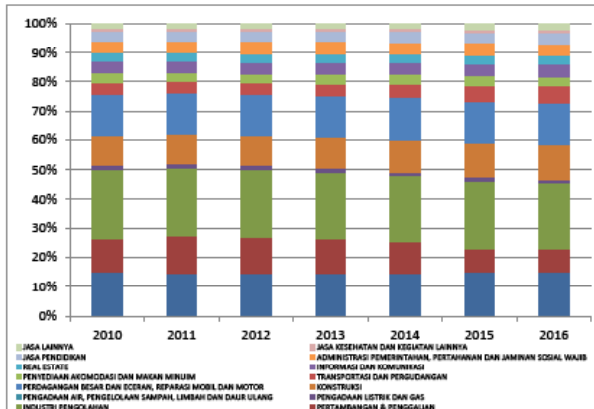


Figure 2. Sector Contribution to GDP

### 3.2. Negative Trends of Biodiversity

The negative trend of biodiversity is a negative change in biodiversity status that tends to threaten the survival of biodiversity. As written in the National Report to the Convention on Biological Diversity 5 (2015), there are several major threats that cause loss of biodiversity in Indonesia, namely:

#### 1. Habitat changes

These habitat changes result from conversion of forests to plantations, mines and aquaculture, settlements and industrial estates. Changes in habitat result not only in reduced forest cover but also cause the extinction of various species and also decrease soil microbes. In 2011/2012, land/ forest cover was reduced by 613,480.7 hectares<sup>21</sup> and the mangrove forest loss due to changes in land use resulted in 41.9% of mangrove forests to be in degraded condition.

#### 2. Increase of Invasive Alien Species

IAS which is originally introduced as ornamental plants, animal feed, horticulture, pets, often becomes invasive and will result in the loss of local species. In plants, the loss of plants due to alien species are common in Indonesia. However, there is no loss of animal species caused by the entry of IAS.

#### 3. Pollution

Air, water and soil pollution are human activities that affect the natural environment and have a direct negative impact on biota. Pollution alters the flow of energy, chemistry, and physical conditions of the environment and species abundance in an ecosystem. Forest and land fires, industrial air and water pollution and the development of transportation are the main causes of environmental pollution in Indonesia.

#### 4. Excessive exploitation

Excessive exploitation of wildlife causes several species of biodiversity to become endangered. Excessive harvesting of wild plants and wildlife solely to

<sup>21</sup> Forestry Statistics 2013

meet the demand of buyers cause of over-exploitation of wildlife in Indonesia.

5. Use of chemicals in land use  
The use of chemicals in land use, especially in agriculture and plantation can accelerate soil degradation. The degradation of land quality will further encourage the expansion of new land. Soil degradation is generally caused by excessive use of fertilizers and pesticides.
6. Climate change  
Global climate change is associated with climate dynamics that do not follow the natural patterns that have been running for hundreds of years. The cases of La Nina and El Nino show that climate has changed or shifted. These changes have an impact on changing patterns of distribution and loss of biota that are unable to adapt to the changes.

### 3.3. Positive Trends in Biodiversity Changes

Indonesia has taken various measures to address the threats to biodiversity loss, which can be categorized into three major activities: biodiversity protection, restoration and rehabilitation, and sustainable use. Several positive initiatives include:

1. Moratorium of new licenses on 64 million hectares of primary natural forest and peatlands from 2010 based on Presidential Instruction No. 10 of 2010 jo. Presidential Instruction No. 6 of 2013 on the moratorium of new licenses and the improvement of governance of primary natural forest and peatlands. This policy is part of the government's commitment to reduce greenhouse gas emissions by reducing deforestation and forest degradation.
2. Conducting in-situ conservation by increasing the terrestrial conservation area under KLHK in 2012 (to increase conservation area by 11,741,636.48 ha compared to 2007). Indonesia also sets a target of 20 million hectares of marine protected areas in 2020.<sup>22</sup>
3. Due to ex-situ conservation, up to 2013, the number of botanical gardens increased by 21, bringing the total number to 25 botanical gardens throughout Indonesia, representing 15 ecosystems, totaling 4,100,7 ha. Indonesia still has a target to develop 22 more botanical gardens that will represent 47 types of ecosystems in Indonesia (<sup>23</sup>), Presidential Regulation No. 93 of 2011 on Botanical Gardens)
4. Ex-situ and in-situ conservation initiatives are also evident in the development of the Biodiversity Park. Biodiversity Park is developed to protect local biodiversity with conservation function outside the forest area. The purpose of establishing a Biodiversity Park is to preserve rare species and local genetic resources through reservation of natural resources. Until 2013 the Biodiversity Park was established in 9 provinces, 19 districts and 10 cities in Indonesia.<sup>24</sup>

<sup>22</sup> Ministry of Environment and Forestry, *Laporan Nasional Konvensi Keanekaragaman Hayati ke 5. (Jakarta:2014)*

<sup>23</sup> Ibid

<sup>24</sup> Ibid

Minister of Environment Regulation No. 3 of 2012 on Biodiversity Parks)

5. Until 2013, ecosystem restoration permits are issued for an area of 397,058.00 hectares, Government Regulation No. 6 of 2007 on Forest Management and Preparation of Forest Management and Forest Utilization Plans). Ecosystem restoration is an effort to restore biological elements (flora and fauna) and non-biological elements (soil and water) in an area with the native species, so as to achieve a balance between the biological elements and the ecosystem. The location of ecosystem restoration is unproductive production forest.
6. Until 2014, 1.47 million hectares of palm oil plantations in Indonesia obtained RSPO (*Roundtable on Sustainable Palm Oil*) certification<sup>25</sup>. Under RSPO, plantations have to designate areas for conservation within the plantation area. This encourages palm oil plantation companies and groups of smallholders to change their plantation system to be more environmentally friendly and sustainable. Source: MoU between RSPO and the Director General of Plantations on the Implementation of Sustainable Palm Oil Production in Indonesia No. 39 / KL.410 / E.5.1 / 02/2009, RSPO Impacts Report 2014
7. 40 palm oil plantation companies received ISPO (Indonesian Sustainable Palm Oil) certificates in 2013. In contrast to the RSPO which is voluntary, ISPO must be met by palm oil companies and palm oil industries to develop plantations based on sustainable environmental principles in Indonesia. Source: Ministry of Environment and Forestry (2014), Regulation of Minister of Agriculture Number 19 / Permentan / OT.140 / 3/2011 on guidelines for sustainable palm oil plantations in Indonesia
8. Until 2011, the total area of organic farming in Indonesia was 225,062.65 hectares. The organic farming area covers lands which had been certified, those which were undergoing certification process, those which underwent organic quality assurance certification and lands which were not certified. Until 2013, there were 8 organic certification institutions established in Indonesia. In 2011, agricultural lands that had organic certification reached 90,135.30 hectares. Awareness of the dangers posed by the use of chemicals throughout the green revolution and the influence of consumer lifestyles that are beginning to take into account health and the environment encourage the development of organic agriculture. Source: Agro Economic Research Forum vol 30 No. 2 December 2012 page 91-108, Regulation of the Minister of Agriculture No. 64 / Permentan / OT.140 / 5/2013 concerning organic farming systems
9. In 2013, 664,067 hectares of land and forest areas were rehabilitated, increasing by 489,168 hectares compared to the rehabilitated land and forests in 2009. The forest rehabilitation prioritized critical and highly critical lands. Source: Forestry Statistics 2013
10. Until the year 2013 as many as 5.423 orang utans were rehabilitated and 1072 had been released into the wild. Rehabilitation was done in 7 orang utan rehabilitation sites. The ultimate goal of rehabilitation is to release orangutans back to their natural habitat. Source: Ministry of Environment and Forestry

<sup>25</sup> RSPO Impact Report 2014

(2014), Regulation of the Minister of Forestry No. P.53 / Menhut-IV / 2007 on strategy and action plan for orangutan conservation Indonesia 2007-2017

Based on the negative and positive trends above, several important sectors were identified. These sectors include:

1. Forestry sector and forestry related activities (forestry industry, small-scale forestry industry and subsistence forestry activities)
2. Agriculture
3. Marine and Fisheries
4. Tourism

The four sectors are directly related to biodiversity material. Meanwhile, there are other sectors that have indirect linkage with biodiversity such as:

1. Mining and quarrying,
2. Transportation,
3. Energy, and
4. Manufacturing and processing industries



# 4

## LANDSCAPE OF BIODIVERSITY FINANCING



## 4

# Landscape of Biodiversity Financing

The trend of positive change becomes the strength of biodiversity management in Indonesia, while the negative trend becomes the challenge faced by all stakeholders in biodiversity management. Efforts to optimize strengths to be capitalized in overcoming challenges are then translated into the needs of biodiversity management.

The needs of various stakeholders in biodiversity management need resource support. To ensure that biodiversity management can effectively achieve the Aichi (CBD) targets, resource mobilization is needed to meet the needs of stakeholders in biodiversity management.

Resource mobilization generally involves both government and non-governmental actors. They need resources to leverage positive change and to reduce the damage caused by negative trends in biodiversity management.

Expenditures of biodiversity management describes the needs of biodiversity management. On the other hand, expenditures made by various parties in fact stimulate the negative trend of biodiversity management in Indonesia.

Selain belanja, valuasi ekonomi yang layak terhadap sumber-sumber kehati dapat menjadi sumber pendanaan sendiri pengelolaan kehati, juga menjadi faktor yang menghambat eksploitasi berlebihan terhadap mereka. Sumber pendanaan sendiri bermanfaat untuk memastikan bahwa pengelolaan kehati berkelanjutan.

Sound biodiversity management can generate funding for itself and reduce excessive biodiversity exploitation. This is useful to ensure sustainable biodiversity management. In response to the need for a new approach to biodiversity finance, BIOFIN has outlined a conceptual framework based on four kinds of finance results<sup>26</sup>, namely:

1. Generate revenues, i.e. any existing or innovative mechanism or instrument that can generate and/or leverage financial resources to allocate to biodiversity. Examples include the attraction of impact investment in conservation projects, the review or introduction of green taxes (e.g. fuel taxes, taxes on chemical

<sup>26</sup> UNDP, BIOFIN Workbook (New York, 2016), Op.cit, 35

- pesticides, water fees etc.), the issuance of debt instruments such as green and blue bonds, etc.;
2. Realign current expenditures, i.e. any measure that can reorient existing financial flows towards biodiversity. This result can be achieved by phasing out and reforming fossil fuel/energy subsidies and using these freed resources to invest in renewable energy or green infrastructure instead. Another example is lobbying for changes in budget allocations towards biodiversity and livelihood programmes;
  3. Avoid the need for future biodiversity expenditures, thus freeing up future resources for investment in other areas, i.e. any measure that can prevent or reduce future investment needs by eliminating or amending existing counter-productive policies and expenditures. This can be achieved by taxes that can generate a double dividend, or by fines for stopping ecosystem contamination by alien invasive species.
  4. Deliver financial resources more effectively and efficiently, i.e. any measure or instrument that can enhance cost-effectiveness and efficiency in budget execution, achieve synergies and/or favour a more equitable distribution of resources. Examples include the establishment of biodiversity business challenge funds, the merger of national conservation funds, the establishment of central procurement units or staff incentives to increase delivery of resources.

#### **4.1. Expenditures Related to Biodiversity**

Government expenditures play an important role in fulfilling the needs of biodiversity management. This can not be separated from the government's very significant role in biodiversity management. In addition to driving positive change, the government can also drive negative trends.

Governments play a central role through active involvement in the business processes of biodiversity management. On the other hand, the role of non-government actors, largely undertaken by NGOs and sponsored by grants and loans, is limited to early initiatives to stimulate sustainable forest management. After the system installation is complete, the government becomes the party responsible for continuing the initiative.

In general, institutional analysis of biodiversity expenditure is limited to two types of government expenditures: subsidy expenditures, central government and local government. However, only central government expenditure is discussed in great details, especially expenditures of ministries/agencies. Meanwhile, subsidy expenditure and local government expenditure are explained briefly.

The focus of discussion on central government expenditures is on the consideration that these expenditures will leverage biodiversity management in the broader

sense. This situation is inseparable from the shift of authority related to ecosystem maintenance to the local government level.

Following Government Regulation (PP) on the division of authority as the implementation of Law No.23 / 2014, all local governments no longer budget for biodiversity. On the other hand, the provincial government is preparing capacity to manage this task. However, there are other expenditures, especially the Special Allocation Fund (DAK) on environmental and forestry issues, implemented by local governments. The role of central government is to determine the criteria of regions which are eligible to receive DAK.

Related to government subsidy expenditures, the main point to note is the allocation of the type of subsidy. The potential impact of energy and non-energy subsidy allocations needs to be studied in depth. In general, in the economic perspective, subsidy pushes economic prices lower than market prices. This condition has an impact on inefficiencies in subsidized product markets.

The first important point relates to energy subsidies. Currently, energy subsidies only focus on the type of diesel fuel used mostly in the transportation and distribution of goods. Direct diesel fuel subsidies to communities and industries also have a direct impact on emissions levels, especially CO<sub>2</sub> generated by diesel engines. Pollution, which is contributed by emissions from diesel-fueled engines, has the potential to drive negative trends toward biodiversity.

In addition, another type of subsidy granted by the government is non-energy subsidies. Of the several types of non-energy subsidies spent by the government, the highlight is on fertilizer subsidies. Fertilizer subsidies that impact on low fertilizer prices have the potential to provide incentive for farmers to use more fertilizers than to develop organic farming. Direct subsidies to these farmers have the potential to drive degradation of agricultural land quality. This then becomes an important point because it can contribute to negative biodiversity trend.

Nevertheless, there are several types of subsidies that support biodiversity management. Several types of subsidies on renewable energy sources are one of the forms of direct subsidies provided by the government to community. Unlike previous diesel fuel subsidies, this type of subsidy is part of the government's effort to ensure correct targeting of subsidy to effectively contribute to positive biodiversity trend.

Central government expenditures are represented by ministry/agency expenditures that contribute to the four national action plans listed in the IBSAP. This mechanism is then described in the Biodiversity Expenditure Review (workbook 1C) as a public expenditure funding for BIOFIN. A crucial aspect of public expenditures for BIOFIN is the use of a performance-based budgeting approach (PBK) as an implementation of the *money follow program* method implemented by the government.

In the public expenditure flow for BIOFIN, there are at least five ministries/agencies that have a major contribution to biodiversity management expenditure in Indonesia. The five ministries/agencies are the Ministry of Environment and Forestry (KLHK), Ministry of Agriculture, Ministry of Marine Affairs and Fisheries, Ministry of Public Works and Public Housing and the Indonesian Institute of Sciences (LIPI).

Most of the expenditures are contributed by KLHK and the least contributed by LIPI. While the other three ministries/agencies have relatively balanced contributions. Meanwhile, several efforts implemented by the government, outside the programs and activities of ministries and agencies include:

- Bank of Indonesia and AMDAL (Environmental Impact Analysis/EIA)  
Bank of Indonesia requires banks to pay attention to EIA in the process of granting credit to prospective borrowers and in assessing business prospects. Banks need to pay attention to efforts made by prospective borrowers to protect the environment.
- Corporate Social Responsibility (CSR)  
This social and environmental responsibility is binding for a Limited Liability Company (PT) through Limited Liability Company Law No. 40 of 2007 and SOE/Local Government Owned Enterprises (BUMD) through Law Number 19 Year 2003 and its implementing regulations.
- Incentives for donations in the form of reduction of the Company's Gross Income for income tax reporting with an amount of deduction not exceeding 5% of the net income of the previous Tax Year. Donations which are given incentives are in the framework of research and development through research and development institutions; donations in the form of educational facilities delivered through educational institutions and social infrastructure development costs which represent costs incurred for the purpose of constructing public and non-profit facilities and infrastructure.
- Expenditures related to biodiversity programs by NGOs
- Expenditures on programs related to biodiversity management through bilateral and multilateral cooperation
- Regulations and Policies in the Field of Energy and Mineral Resources
  - o Establishment of a Special Work Unit for Oil and Gas Upstream Activity (SKK MIGAS) and Upstream Oil and Gas Executive Agency (BPH MIGAS) as an oversight body for all investments and the implementation in the upstream and downstream oil and gas industries, including reducing the environmental impact.
  - o Law Number. 22 of 2001 and its implementing government regulations governing policies on the management of upstream oil and gas industry through the mechanism of Production Sharing Contract agreement between SKK Migas and national and foreign investors.
  - o Obligations of oil and gas investors/companies to have valid EIA certificates and to undertake continuous environmental monitoring and management (UKL/UPL).

- o Policies on mineral and coal resources including the obligations of all mining production to be processed and refined domestically (Law No. 4 of 2009 and Regulation of the Minister of Energy and Mineral Resources No. 7/2012)
- o Establishment of the Directorate General of New Energy, Renewable Energy and Energy Conservation (DG EBTKE) under the auspices of the Ministry of Energy and Mineral Resources. The Directorate General is a strategic step in accelerating the development of new energy, renewable energy and energy conservation in Indonesia, including more environmentally friendly energy, such as hydro power, solar power, bioenergy, and geothermal.

## 4.2. Revenues Related to Biodiversity

The policy discussions in this section only cover policies directly related to biodiversity finance. Each year the government sets the state revenue and expenditure budget. It is legalized by law. For example, Law No. 14 of 2015 on State Revenue and Expenditure Budget 2016. Through this law the government sets the budget for biodiversity management by sector. The law also outlines revenues that can be derived from biodiversity, for example through Non-Tax State Revenue (PNBP). PNBP is all central government revenues received in the form of revenue from natural resources, profit share of State-Owned Enterprises (BUMN), other non-tax revenues as well as revenue from Public Service Agency (BLU). Subsequently, funding sources from the state budget are listed in planning documents (Government Work Plan / RKP, and / or National / Regional Medium-Term Development Plan / RPJMN). The funding is allocated through relevant ministries/agencies. For local government, it is allocated through the relevant local government work unit (SKPD).

Limited state budget related to expenditures for rehabilitation, restoration, protection and conservation require efforts to seek support and develop modalities for investments in biodiversity. The government also undertakes efforts to mobilize funding outside the state budget. For example, Law No. 32 of 2009 on environmental protection and management sets various instruments to mobilize funding outside the state budget. Trust fund is implemented through the Government Regulation number 80 of 2011 on trust funds. In addition, Government Regulation No. 28 of 2011 regulates Ecosystem Restoration, Law No. 11 of 2013 on Ratification of Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity governs genetic and allow the sharing of access and benefits from genetic utilization. Through this mechanism, several other funding sources can be identified. Other sources of funding include grants from abroad, public and private funds. This funding source can be accessed through various mechanisms.

Dana perwalian amanah dilaksanakan melalui kebijakan Peraturan Pemerintah nomor 80 tahun 2011 tentang dana perwalian amanah. Selain itu Peraturan Pemerintah nomor 28 tahun 2011 mengatur tentang Restorasi Ekosistem, Undang-undang nomor 11 tahun 2013 tentang Pengesahan Protocol *Nagoya on Access to Genetik Resources and The Fair and Equitabel Sharing of benefits Arising From Their Utilisation to The Convention on Biological Diversity* yang mengatur keanekaragaman hayati genetik dan memungkinkan pembagian akses dan manfaat dari pemanfaatan genetik. Melalui mekanisme ini dapat diidentifikasi beberapa sumber pendanaan lainnya dengan berbagai mekanisme inovasi. Sumber pendanaan lainnya misalnya hibah dari luar negeri, dana masyarakat dan swasta. Sumber dana ini dapat diakses melalui berbagai mekanisme.

Several funding sources for biodiversity management outside the national budget are:

- a. Trust Funds from single or multilateral donors, among others:
  - o Indonesia Climate Change Trust Fund (ICCTF) – By the end of 2014, the ICCTF disbursement has reached 11.1 million USD.<sup>27</sup>
  - o Indonesian Biodiversity Conservation Trust Fund (KEHATI) – KEHATI managed a biodiversity endowment funds with a value of 16.5 million USD.<sup>28</sup>
- b. Program funding from environmental non-governmental organizations, either working with the Indonesian government or other community elements, among others:
  - o Management of conservation areas and development of essential ecosystems by KLHK in collaboration with ZSL, Walestra and Gita Buana.
  - o ecosystems restoration outside conservation areas by KLHK in cooperation with Burung Indonesia.
- c. Funding from private sector and industry, among others:
  - o Corporate social responsibility program (CSR).
  - o Payments for environmental services, including the management of the Pemuteran tourism area in West Bali National Park by private sector.
  - o The Hope Forest Initiative managed by PT. Restorasi Ekosistem Indonesia (REKI) aimed at conserving biodiversity, restoring forests, providing economic and livelihood resources to communities and producing economic value and environmental services.
  - o The deposit of mandatory fund by each oil company in a joint account with the Oil and Gas Special Unit for closure and restoration of a joint oil/gas exploration/exploitation area.
- d. *Debt for Nature Swap* (DNS)  
As mandated in the Stipulation of the People's Consultative Assembly (MPR) Decree Number. X / MPR / 2001 on the Report of the Implementation of the Decision of the People's Consultative Assembly of the Republic of Indonesia by the State Higher Institution at the Annual Session of the People's Consultative

<sup>27</sup> <http://icctf.or.id/icctf-disbursement-2010-2014/>

<sup>28</sup> <https://www.kehati.or.id/pengelolaan-dana-abadi/>



Assembly of the Republic of Indonesia of 2001. The Decree assigned the President as follows: “Indonesia’s Foreign Debt shall be paid but the Government needs to restructure foreign debt through rescheduling of debt (principal and interest), swap relatively expensive debt with very soft loans (IDA / International Development Agency), program debt to poverty swap and debt to nature swaps in order to reduce the burden on the state budget “.

Implementation of DNS in Indonesia: Tropical Forest Conservation Action for Sumatra (TFCA-Sumatra) or also called Real Action of Sumatran Tropical Forest Conservation since 2009. This environmental debt transfer scheme is based on the agreement between the Government of Indonesia and the United States to conserve tropical forest areas in Sumatra where deforestation rate is very high. Second TFCA agreement was signed in 2011 where conservation focus to the island of Kalimantan. In total, the TFCAs will reduce Indonesia’s debt to the U.S. Government by 71.2 million USD.<sup>29</sup>

e. Green banking funding

It was initiated by various national banks both state-owned and private. Most have thoroughly audited the prospective borrowers and required them to undertake study and obtain EIA certificate. Debtors must also report eco labeling on its products. This practice is also implemented by the Capital Market Supervisory Agency (BAPEPAM) for companies who wish to be listed in the stock exchange. Furthermore, several financial institutions are beginning to issue financial instruments that support biodiversity conservation, such as loans provided by Bank Exim Indonesia on Blue Economy investments.

These policies should be continuously improved including implementation and coordination among agencies in implementation, monitoring and evaluation and law enforcement. The next section discusses the policies as a whole, policies that can threaten biodiversity sustainability and policies which are needed to preserve biodiversity.

<sup>29</sup> <https://www.usaid.gov/biodiversity/TFCA/programs-by-country>



# 5

# INSTITUTIONAL ANALYSIS



# 5

## Institutional Analysis

The main challenge of the effectiveness of biodiversity management policy lies in the implementation, both in formal and informal institutions in Indonesia. In addition to the gap (time lag) between the implementation of a policy and its implementation, the balance between biodiversity management and development (economic) is a challenge.

The discussion of the role of every actor or institution can not be separated from the characteristics of biodiversity as a public good that concerns the livelihood of the people. The main implication of this is the role of the government that holds a dominant share in biodiversity management. However, to ensure sustainable biodiversity management, a mechanism that will generate revenues from biodiversity is needed.

Although the characteristics of biodiversity are in line with the Coase theory's perspective on maximal resource exploitation, not all initiatives come from the government. A number of current public and private initiatives are also included in this section to illustrate how future biodiversity management will provide greater portion to the non-government sector.

For now, the foundation of interaction between actors and institutions is developed from the role of every actor and institution in biodiversity management. The role is built from the scope of responsibility of each party in biodiversity management. The need for resources while performing roles in biodiversity management has consequences on the distribution of financing for biodiversity management.

In addition, the identification of those roles will also include what actors or institutions are responsible for positive and negative trends in biodiversity management. This section then discusses the capacity of actors or institutions in contributing to biodiversity financing.

Based on the identification in the previous section, there are at least several negative drivers that affect biodiversity management in Indonesia, among others, land use change, invasive alien species (IAS), excessive resource exploitation and pollution. The situation is inseparable from the main focus of Indonesia's economic

growth that relies on the extractive sector over the past decade. High commodity prices boost the expansion of the extractive sector through expansion of mining and plantation land and exploitation of forests and marine resources.

In addition, another factor that drives the economy is consumption. Efforts of this sector impact on pollution and potential entry of IAS through the transportation of goods and services coming into Indonesia. Efforts to reduce price to encourage consumption have an impact on the low commitment for waste management. This situation certainly has a major impact on the management of pollutants that pollute the ecosystem and affect biological sustainability.

The catalysts of economic growth in the extractive sector are divided into several sectors, namely agriculture, environment and forestry, fisheries and tourism sectors. In terms of business development, most companies in these three sectors have the same strategy, that is expansion of land by converting conservation area into production area.

Especially in the agricultural sector, the low price of fertilizer encourages farmers to be inefficient in providing fertilizer. This certainly contributes greatly to declining soil quality.

In addition to companies, the community is an important actor in the extractive sector expansion scheme. Several community involvement schemes in extractive resource management led to a shift in the livelihoods of the community. They become workers or plasma farmers<sup>30</sup>, especially in the plantation and forestry sectors.

In the tourism sector, tourism business schemes involving the community also have a similar impact, that is shifting people's livelihoods into workers in the tourism sector. In this condition, the community is the main supporting actor for company expansion. This shift of livelihood is driven by the huge economic benefits that community gains.

Other context that needs to be considered although not a major determinant is the division of central and local government affairs under Law No.23/2014, which is currently in the process of implementation. The local government apparatus restructuring based on PP No.18/2016 as a reference for the implementation of Law No.23/2014 was completed by the end of December 2016.

Under Law No.23/2014, the division of roles between the central government and regional government is conceptually based on the division of tasks with an ecosystem perspective. In general, most ecosystem related tasks such as those related to forestry, environment, energy and mineral resources, marine affairs and fisheries are now managed by the provincial government. However, affairs in

<sup>30</sup> Farmers working on plasma plantation, known as contract farming.

the agriculture and plantation sectors are still under the authority of the district government. This poses a challenge for the province in preparing its capacity to manage it.

Although the span of control to monitor ecosystem management has been narrowed down at the provincial level, the central government needs to pay attention to structure of political institution in Indonesia which is similar at the district/city and provincial levels. It is important to anticipate the behavior of provincial governments that have the potential to take similar action as the district/city governments. The huge benefit of the extractive sector is an incentive for local governments to freely issue expansion licenses for companies in the extractive sector.

To anticipate this, the government has also restricted land management through Spatial Plans (RTRW). Up to 2015, there are about 413 local governments that have ratified the RTRW law. Attention needs to be given in several provinces that still have quite a lot of lands. Most districts/municipalities in provinces with significant natural resources such as Riau Province, Central Kalimantan, West Kalimantan and West Papua still do not have RTRW.

On the other hand, the central government through related sectoral ministries has a major role in planning, protection and rehabilitation based on the above-mentioned division of tasks. This is done by the Ministry of Environment and Forestry which conducts forest management planning, watershed management and forest protection and rehabilitation.

In addition to boosting economic growth in the extractive sector, Indonesia's economy is also sustained by household consumption and exports. The reliance of economic growth on household consumption and exports has a serious impact on biodiversity management. The structure of the Indonesian economy which has a large share of imports encourages domestic consumption and exports are needed to balance this. The reliance on household consumption and exports accelerates exploitation of natural resources, especially biodiversity, and causes a high level of pollution.

The significant domestic consumption and exports drives the need for natural resources, especially biological resources. To meet these needs, natural resources are exploited excessively. Companies exploit forests, catch fish and farm exceeding environmental carrying capacity.

Companies and communities benefit the most from over-exploitation of all forest products, fisheries and agriculture. The abundant availability of natural resources causes forest products, fishery and agriculture products to be provided at a low price. However, natural resources are not always utilized for domestic

consumption. In some cases, certain commodities, especially fisheries, are exported abroad. Low production costs become a distinct competitive advantage for Indonesia's biodiversity-based products.

The situation above, is inseparable from the pressure to provide goods to household consumers at a minimal price to ensure the purchasing power of the people. However, domestic community are not the only ones who benefit from the supply of biodiversity-based goods, the international community also benefits.

Alarming pollution rate is also one of the main impacts of large domestic consumption. Consumption of energy, telecommunications and transportation cause high level of pollution. In addition, considerable household waste also put pressure on the environment. In addition, the drive to reduce production costs impacts on waste management.

Several sectoral ministries such as the Ministry of Environment and Forestry, the Ministry of Marine Affairs and Fisheries and the Ministry of Agriculture are actors who have the main roles of issuing financing for the protection and rehabilitation of forest ecosystems, water and agricultural land.

On the issue of the environment, there are other actors, namely civil society organizations in the form of non-governmental organizations. At least a number of civil society organizations engaged in conservation. Civil society organizations undertake two main strategies namely policy advocacy and conservation and direct rehabilitation of land, flora and fauna.

Policy advocacy is undertaken by several civil society organizations in an effort to ensure that government policies in promoting economic growth, both to encourage extractive sector growth and consumption, ensure the interests of all stakeholders. Several NGOs that undertake advocacy activities include Forest Watch Indonesia, Walhi, Destructive Fishing Watch and Greenpeace Indonesia. The advocacy is conducted in several ways, among others, encouraging permit review/cancellation as well as judicial review of several laws.

Other civil society organizations also undertake other strategies ie engaging in conservation and direct rehabilitation of several targeted areas and flora and fauna. Some of these organizations include: Conservation International (CI), The Nature Conservation, Wetlands International Indonesia (WII), World Wildlife Fund (WWF), Fauna Flora Indonesia (FFI) and Institute for Mangrove Assessment and Development (LPP). These organizations undertake direct action to ensure that an area and the flora and fauna can be preserved.

The above explanation shows that the relationship between actors can not be separated from the calculation of utilization of natural resources which is undervalued. The costs to rehabilitate environmental damage is higher than the



benefits generated by land use change and exploitation of natural resources. Efforts to include financing for biodiversity management during land expansion, exploitation of natural resources and preventing the impact of pollution can help address the issue.

Currently, the mechanism of private sector involvement is limited to a number of mechanisms that still place the government as the main actor. In the revitalization of palm oil for example, as an effort to conserve the ecosystem, Public Service Agency for Palm Oil (BLU Dana Sawit) puts the government as an important actor and civil society as implementer. On the other hand, the private sector only contributes funding. A similar situation also occurs in the mining sector. The cost recovery mechanism in oil and gas sector and the reclamation guarantee funds in the mineral sector show that ecosystems revitalization still places the government as the managing actor.

Meanwhile, private sector initiatives are still very limited, especially related to the mechanism of corporate social responsibility (CSR). The company's vision which is translated into values and procedures for addressing biodiversity issues is an important factor.

The government's commitment to climate change is one of the positive drivers of biodiversity management in Indonesia. The milestone on how climate change issue is mainstreamed lies in the explicit mention of climate change issues in the Environmental Protection and Management Law (PPLH)<sup>31</sup> which includes Environmental Protection and Management Plan at national, provincial and district/city levels.

Through the mechanism of the Strategic Environmental Assessment (KLHS), regulated in this Law, climate change is mainstreamed within the framework of development planning at all levels of government in Indonesia. In addition, the law also explicitly states that all policies or programs must take into account climate change adaptation and mitigation issues.

Climate change policy specifically impacts the preservation of forest and peat ecosystems. The amendment of PP No.71/2014 in PP No.57/2016 reinforced by the establishment of the Peat Restoration Agency through Presidential Decree No.1 /2016 show government's efforts in climate change adaptation and mitigation, especially on peatland ecosystems. This shows how one of the ecosystems has been institutionalized in a major government-led climate change scheme.

Meanwhile, species diversity is indirectly affected by ecosystem conservation efforts. In the management of peat ecosystems for example, species of flora and fauna are indirectly preserved when peatlands are managed.

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<sup>31</sup> Article 10 paragraph 2 of the Environmental Protection and Management Law stated Environmental Protection and Management Plan covering national, provincial and district/city levels

Currently one of the districts/cities that is considered as best practice for climate change management and biodiversity is Bintuni District. On the other hand, this district also has a unique actor complexity. In Bintuni District, companies in the forestry and plantation sectors are located around oil and gas mining companies. Bintuni District also has a wealth of biological resources. However, this district is one of the least developed districts compared to other districts in West Papua Province.

What is interesting about this district is the commitment to jointly conserve mangrove forests. To implement the Environmental Protection and Management Law, Bintuni District sets mangrove conservation efforts in its Medium-Term Development Plan 2016-2021. These efforts can be implemented because the local government is no longer worried about the spread of malaria in the area.

The ability of the local government in managing malaria disease in Bintuni District has allowed the local government to preserve ecosystem especially mangrove forest<sup>32</sup>. The partnership between the local government and company (BP) in managing malaria turned out to have an impact on ecosystem conservation efforts.<sup>33</sup>

The government's commitment in water and land resource management that is closely linked to the conservation of terrestrial and aquatic ecosystems listed in Law No.34 / 2014 on soil and water conservation, includes soil and water conservation in protected areas and cultivation areas. The guarantee is used to ensure that land conversion is not occurring, especially in natural ecosystem areas. However, this effort still does not include the management of ex-situ conservation.

Biodiversity Management is one of the aspects of the implementation of Law No.32 / 2009 on Environmental Protection and Management as well as the real form of Indonesia's commitment in ratifying several international conventions. Currently, these efforts have been translated into several concrete steps in the formulation of a biodiversity action plan that binds a number of actors to implement biodiversity management in Indonesia's national development. Cross-sectoral biodiversity management involves cross-sectoral actors in Indonesia.

Biodiversity management is inseparable from the planning regime (Law No.25 / 2004 on National Development Planning System-SPPN) and fiscal management regime (Law No.17 / 2003 on State Finance), embracing performance based budgeting or "money follow program" principle. Through this approach, biodiversity management which was previously not recognized as one of the sectoral functions, now gets fiscal financing from the government.

<sup>32</sup> mangrove forests are perceived as malaria mosquitoes nesting ground

<sup>33</sup> see:[http://www.bp.com/in\\_id/indonesia/sustainability/tangguh-sustainable-development-program--tsdp-penghargaan-pemerintah-RI-atas-program-anti-malaria.html](http://www.bp.com/in_id/indonesia/sustainability/tangguh-sustainable-development-program--tsdp-penghargaan-pemerintah-RI-atas-program-anti-malaria.html)

However, fiscal funding related to biodiversity issue does not only come from one ministry/agency. At least five ministries/agencies contribute to the financing of biodiversity management in Indonesia. In practice, coordination among ministries/agencies is needed to achieve the target of biodiversity management in accordance with the Aichi targets.

Within those limitations, the commitment of a number of actors or institutions deserves a high appreciation. In terms of field implementation, there are a number of actors or institutions which are directly related to biodiversity management. They are involved in the micro aspects of biodiversity management.

Meanwhile, there are actors or institutions that are not directly related to biodiversity management. They are involved in the macro aspects of biodiversity management. The separation of the actors or institutions is based on the action plan for biodiversity management.

The macro aspect analysis will cover the roles and responsibilities of actors in creating a conducive environment for biodiversity management in Indonesia. Actors identified in this aspect are actors or institutions that can provide incentives and disincentives for the interactions of actors who are directly involved in biodiversity management. Because of the scope that gives space to institutions in managing biodiversity, the macro aspect is also called an actor or institution that contributes to the creation of enabling environment for biodiversity management.

In the micro aspect, actors interact directly in biodiversity management process which includes the management of ecosystem, species and genetic resources. Interaction between actors or institutions in this micro-aspect will explain their interactions in biodiversity management practices both in terms of utilization and the protection of ecosystems, species and genetic resources.

It is at this point that actors or institutions that act as protagonists and antagonists in biodiversity management are identified. The scope of analysis of the actors or institutions in the micro aspect include their positions and span of authority in biodiversity management practice.

To a certain extent, this analysis will also identify potential achievements and impacts of biodiversity management practices by those actors. To detail these practices, the study identifies practices for planning, budgeting and implementation in the field by ensuring that the interaction of these actors takes into account the sustainability of biodiversity program in a consistent manner.

In the management of macro aspect as well as micro aspect, the government refers to central government and local government including parliament at central and local levels. Business actors as well as non-governmental organizations also refer to those which work at the central and local levels. The use of perspectives

that separate actors or institutions at the central and local levels is useful for identifying interactions between actors or institutions based on the scope of their duties and authorities as set out in the law.

The government as a key stakeholder in biodiversity management, at the central level includes a number of Ministries and Institutions including: Ministry of Environment and Forestry (KLHK), Ministry of Marine Affairs and Fisheries (KKP), Ministry of Agriculture (Kementan), Ministry of Home Affairs (Kemendagri), Ministry of Tourism, Ministry of Public Works and Housing, Ministry of Finance and the National Development Planning Agency (Bappenas). The analysis of actors and institutions at the central government also includes research institutions, especially LIPI, as the main support institution for biodiversity management.

Like government agencies, there are community organizations that carry out advocacy and community empowerment functions related to biodiversity issue. These social organizations can take the form of non-governmental organizations that generally carry out advocacy functions. Meanwhile, community institutions in the form of foundations and mass organizations mostly run the function of community empowerment.

Business organizations that are covered in the analysis of biodiversity management include direct and indirect users. Companies which are direct users include companies in the extractive sector, including forestry, fishery and tourism. Meanwhile, the processing industry is categorized as indirect users. In this condition, companies as business organizations are important stakeholders in biodiversity management.

Climate change mainstreaming does not only influence mindset in addressing mitigation and adaptation issues, but it also influences the technical details of its management. To maximize efforts to achieve the biodiversity management target, adequate funding is required.

To achieve the set targets, fund raising for biodiversity financing needs to be done innovatively, so that it does not only rely on conventional sources ie government budget. Financing through the state budget (APBN) and local government budget (APBD) is called conventional mechanism or Business as Usual (BAU). The ultimate challenge is the need for an alternative mechanism.

Reflecting on the steps implemented by the government, funding innovations through various financing sources are needed as one of the alternative measures beyond BAU to ensure that biodiversity management targets are achieved. The need for innovative economic development that pays attention to the sustainability of biodiversity is enormous.

The potential of this financing is relatively adequate. The funding source institution has been developed internally in the government such as the reforestation fund and those from external sources, both from private sector and abroad. The innovation may be undertaken with an alternative strategy ie forming a new institution to leverage program effectiveness.

Through this mechanism, efforts to prioritize funding in one sector can have a multiplier effect on managing the issue broadly. The establishment of a Peat Restoration Agency (BRG) with more operational characteristics than the previous institution which had a more policy perspective is one of the implementation of this strategy.

The duplication of this strategy can potentially be implemented by capitalizing on several types of ecosystems as well as several other scopes that can be valued as state assets to be managed and used as leverage in biodiversity management. Such efforts may be carried out as a follow up on the initiatives that have been carried out by the Valuation Directorate of the Directorate General of State Assets of the Ministry of Finance. Valuation of strategic biodiversity resources with significant leverage and benefits can be capitalized as in the case where the government capitalizes on the issue of peat ecosystems.

Another strategy is adaptation to existing institutions. Strategies undertaken by utilizing existing institutions include the establishment of a Public Service Agency (BLU) under the sectoral ministry and BLU under the Ministry of Finance.

An example is the Public Service Agency for Revolving Funds under the Ministry of Environment and Forestry. This BLU utilizes existing funding sources from the reforestation fund, which is managed in accordance with regulation on BLU. Another example is the BLU under the Ministry of Finance i.e Public Service Agency for Palm Oil Fund (BLU Dana Sawit).

There is a perspective on biodiversity management that focuses on the government side as the sole actor responsible for the protection and rehabilitation of biodiversity in Indonesia. This view forms because other actors, such as corporations and communities, have contributed monetarily to the government either through taxes or the payment of other obligations as a concession to the utilization of natural resources.

There have been several corporate initiatives, especially through corporate social responsibility mechanisms. However, they are of sporadic nature and only found in companies in plantation and forestry sectors.

On the other hand, as an important actor in biodiversity management, the government has a major limitation namely rigid institution for biodiversity management. The 'money follow program' principle causes biodiversity to be seen

as performance targets supported by several government agencies. Therefore, coordination becomes a prerequisite for effective biodiversity management.

Several institutions that play a conventional role in biodiversity management among others are LIPI, Ministry of Environment and Forestry, Ministry of Marine Affairs and Fisheries, Ministry of Agriculture and the Provincial Government. All of these government actors act as key actors who fund the implementation of biodiversity management either through APBN or APBD mechanisms. In addition, there are other funding mechanisms that have been implemented, especially through the BLU mechanism under Sectoral Ministry especially the Ministry of Environment and Forestry. All these mechanisms are called Business as Usual (BAU) mechanisms.

In addition to the mechanism that places the government as the only key actor, an alternative institutional mechanism is required that puts the government as the main axis (nexus) of biodiversity management. The consequence of such mechanism lies in the division of roles in implementing biodiversity management as well as its funding. In contrast to previous mechanisms, through this mechanism the government is not the only active actor in the implementation of biodiversity management. The activeness of each actor in performing his role in biodiversity management covers implementation and funding aspects.

In this alternative scenario, all actors at the central, provincial and district government levels as well as non-government actors are involved in biodiversity management. Domestic non-governmental actors are involved by contributing to the funding of biodiversity management, as done by several palm oil companies in the Public Service Agency for Palm Oil Fund (BLU Dana Sawit). The source of funding from the endowment fund of palm oil companies is managed by the government through the BLU mechanism.

The same scheme can also be done to international funds in Indonesia. International Endowment fund can be managed by optimizing BLU scheme as done in Dana Sawit. What distinguishes between the two is only the origin of funding and management tailored to biodiversity target achievement. Details of key actors involved in the funding of biodiversity management are shown in the table below.

Tabel 1: Detail aktor kunci yang terlibat dalam pendanaan pengelolaan Kehati

Lembaga	Menentukan prioritas anggaran	Pengelola keuangan	Perencana anggaran	Yang mempengaruhi pengambilan keputusan	Yang membelanjakan dan melaporkan
<b>A.1. Penelitian, Pengelolaan Data dan Dokumentasi Kehati</b>					
LIPI	√	√	√	√	√
Kemristekdikti	√	√	√	√	√
Kementerian Lingkungan Hidup dan Kehutanan	√	√	√	√	√
Kementerian Pertanian	√	√	√	√	√
Kementerian Kelautan dan Perikanan	√	√	√	√	√
<b>A.2. Pengembangan Manfaat Kehati</b>					
Kementerian Lingkungan Hidup dan Kehutanan	√	√	√	√	√
Kementerian Pertanian	√	√	√	√	√
Kementerian Kelautan dan Perikanan	√	√	√	√	√
Bappenas	√	√	√	√	√
Kemendikbud	√	√	√	√	√
Lembaga	Menentukan prioritas anggaran	Pengelola keuangan	Perencana anggaran	Yang mempengaruhi pengambilan keputusan	Yang membelanjakan dan melaporkan
<b>A.3. Pemeliharaan dan Pelestarian Kehati</b>					
Kementerian Lingkungan Hidup dan Kehutanan	√	√	√	√	√
Kementerian Pertanian	√	√	√	√	√
Kementerian Kelautan dan Perikanan	√	√	√	√	√
<b>A.4. Kapasitas Pengelolaan</b>					
Kementerian Lingkungan Hidup dan Kehutanan	√	√	√	√	√
Kementerian Pertanian	√	√	√	√	√
Kementerian Kelautan dan Perikanan	√	√	√	√	√
BLU Dana Bergulir Kementerian Lingkungan Hidup dan Kehutanan Kementerian Sektoral	√	√			√
Bappenas	√	√	√	√	√
Kemendagri	√	√	√	√	√
Kemendikbud	√	√	√	√	√
<b>Lembaga Non-Pemerintah</b>					
Lembaga Swadaya Masyarakat	√	√	√	√	√
BLU di bawah Kementerian Keuangan dengan sumber dana dari Swasta	√	√	√	√	√
BLU di bawah Kementerian Keuangan dengan sumber dana dari Trust-Fund internasional	√	√	√	√	√





# 6

## CONCLUSION & RECOMMENDATION



# 6

## Conclusion & Recommendation

### 6.1. Conclusion

Biodiversity is a valuable asset for Indonesia. Indonesia as one of the countries committed to protect biodiversity, has regulated biodiversity management through various policies. Based on the trend of biodiversity change described in this report, the causes of changes in biodiversity are discussed, including policy and market pressures that can contribute both negatively and positively.

In general, Indonesia has set various policies related to the ecosystem, species and genetic diversity. Some of the main policies include Law number 5 of 1990 on the conservation of biological resources and their ecosystems, Law number 5 of 1994 on Ratification of United Nations Convention on Biological Diversity, Law No. 41 of 1999 on Forestry, Law No. 1 of 2014 on the Management of Coastal Areas and Small Islands, Law No. 31 of 2004 on Fisheries. These laws are then translated into implementing regulations, namely government regulations, ministerial regulations that are usually implemented per sector. This policy is a guide to the implementation of biodiversity management related to restoration, protection and utilization.

Despite many policies governing biodiversity management, Indonesia still faces threats to its biodiversity sustainability such as forest and land fires, illegal forest clearing for plantations, fish theft, environmental pollution and the entry of invasive alien species. In terms of policy, threats to biodiversity still require supporting laws and regulations. Policy analysis reveals laws and regulations that have a negative impact on biodiversity and laws and regulations needed to support biodiversity conservation in Indonesia. Laws and regulations which are needed are regulation to support the conservation of peatlands and primary forests, regulation to support the protection of high conservation value areas, regulation to support the application of access and sharing of benefits of biodiversity. In addition, Law no. 23 of 2014 on regional autonomy also influences biodiversity management, where the division of duties and authority between provinces and districts has caused confusion in its implementation. Therefore, the implementing regulation of the regional autonomy law is required. .

One policy related to finance is Law No. 14 of 2015 on State Revenue and

Expenditure Budget 2016. Through this law the government sets the budget for biodiversity management by sector. The law also outlines revenues that can be derived from biodiversity, for example through Non-Tax State Revenue (PNBP). The Government also strives to undertake various activities outside programs and activities of key ministries and agencies for biodiversity, for example, requiring banks to pay attention to EIA in granting credits. The government also undertakes efforts to mobilize funding outside the state budget. For example, Law No. 32 of 2009 on environmental protection and management that governs various instruments to mobilize funding outside the state budget. Trust fund is implemented through Government Regulation No. 80 of 2011 on trust fund. In addition, Government Regulation Number 28 of 2011 regulates Ecosystem Restoration, Law Number 11 of 2013 on Ratification of Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of benefits to the Convention on Biological Diversity, which regulates genetic biodiversity and allows the sharing of access and benefits from genetic utilization. Through this mechanism several other funding sources with various mechanisms of innovation can be identified.

A number of actors or institutions related to biodiversity management are presented in the institutional analysis section. These actors are government, parliament, private sector, research institutes and universities, non-governmental organizations and the public. The Government is a key stakeholder in biodiversity management. Other actors are non-governmental organizations, private sector and communities.

Every government institution has a different role. Viewed from the aspects of financial management institution for biodiversity, budget planner, decision maker and those who spend budget and submit report, the Ministry of Environment and Forestry, Ministry of Agriculture, Ministry of Marine Affairs and Fisheries have a major role in biodiversity management. In addition to these ministries/agencies, LIPI plays a role in biodiversity research.

Institutions in the implementation of biodiversity management are also important, especially to pay attention to the benefits and costs borne by each institution. In this PIR process, the roles of government institutions in financing and utilization of conservation areas are mapped out. The challenge of biodiversity management is that various programs and activities are still not integrated. Integration process at the planning stage becomes strategic to ensure more effective management, whether internally within a ministry and agency, horizontally between institutions, as well as vertically between central and local government.

The need for biodiversity management is largely contributed by the government through the state budget, as well as several other funding institutions such as BLU. Aspect that needs to be observed in the effectiveness of biodiversity management especially related to the type of government subsidy expenditures is right targeting. Subsidy should be right on target, particularly in terms of minimizing

pollution (diesel fuel subsidies) and land carrying capacity (non-energy subsidy i.e fertilizers).

The development of public expenditure funding for BIOFIN is a good initiative of the government. The expansion of this model at the provincial government level is an important issue to ensure that the scope of biodiversity management financed through public expenditure is more optimal.

## 6.2. Recommendations

### A. General recommendations

From the policy and institutional review, this report provides several general recommendations, namely:

1. The need to maintain a balance between the sustainability of biodiversity and development. Biodiversity is an important asset for development and the economy. But do not jeopardize biodiversity in the name of development. So, it is necessary to mainstream the concept of sustainability in the implementation of development, especially in the regional spatial plan.
2. In order to implement IBSAP, the government must provide adequate funding for:
  - Research in the field of biodiversity,
  - Activities to enhance the protection of the environment sustainability both in the conservation area as well as outside conservation area,
  - Activities in order to expand and improve technological advancements to ensure that utilization of biodiversity provides high economic added value with minimal usage.
3. Several financial solutions to fund the biodiversity that has been successfully identified, among these are:
  - Establish National Biodiversity Trust Fund and Conservation Management Unit Trust Fund
  - Improve debt swap scheme specific for biodiversity conservation
  - Establish Public Service Agency (BLU) which can independently manage the non-tax revenue earned from ecotourism in the national parks
  - Develop conservation compensation from infrastructure development effecting the biodiversity
  - Develop regulation on environmental ecosystem services
  - Issuance of biodiversity mutual funds and bonds
  - Utilize other potential funding source, including improving CSR mechanism and Islamic funds, etc.
4. The biodiversity information described in this report has not demonstrated all the potential of Indonesia's biodiversity, as mentioned in the IBSAP document 2015-2020. For that reason, efforts are still needed to collect all

information about Indonesia's biodiversity

- Protect and manage the information and genetic modifications found in and by Indonesian researchers and encourage further development so that these discoveries may become Indonesia's property and provide the greatest benefit to future generations
  - Mainstream independent innovations and discoveries about genetics and biodiversity to benefit the country
5. The need for political, regulatory and budget support at both central and regional levels to achieve biodiversity protection targets such as accelerated development of 22 Indonesian Botanical Gardens that will represent 47 types of ecosystems in Indonesia, implementation of species conservation strategies, 20 million hectares of marine conservation areas and the development of biodiversity parks.
  6. Capacity building on awareness of the importance of protecting biodiversity especially for provincial and district governments so that the sustainability of biodiversity is not sacrificed for development priorities.

#### **B. Policy-related recommendations include:**

1. The need for strong commitment from the government and the need for political support so that biodiversity protection policy is not only a temporary policy. Moratorium of new licenses and improvement of forest governance should be followed by permanent biodiversity protection, and moratorium on fishing by foreign vessels should be made permanent
2. The government needs to enforce laws and regulations to support the existence of biodiversity and reduce damage to biodiversity caused by practices which are not environmentally friendly.
3. Synchronization of various biodiversity policies. With so many regulations relating to biodiversity, the government needs to take steps to synchronize policies and institutions to ensure effective and efficient implementation for biodiversity protection and utilization.
4. The need for clarity in biodiversity management that is synchronized with the regional autonomy law in order to harmonize biodiversity management across sectors. The development of ancillary regulation of the regional autonomy law needs to be accelerated to prevent confusion on the division of roles and responsibilities in biodiversity management and utilization.
5. Laws and regulations which are still needed to support biodiversity, among others:
  - i. Regulation to support the conservation of primary forests and peatlands. A law is needed to continue the protection of peatlands and primary forests which is not just limited to moratorium of new permits, but one that actually protect peatlands and primary forests.
  - ii. Regulation to support the protection of high conservation value areas. RSPO (*Roundtable on Sustainable Palm Oil*) initiative, which requires palm oil companies that wish to obtain RSPO certification to protect

high conservation value areas within their concession, still do not have a strong legal framework in Indonesia.

- iii. Regulation to support the implementation of access and benefit sharing of biodiversity.

Indonesia has ratified the Nagoya Protocol through Law No. 11 In 2013, however an implementing regulation is needed for the implementation of access and benefit sharing of biodiversity in Indonesia

- 6. The revocation of the regulation on collaborative management in forest areas needs to be reviewed.

**C. Recommendations related to institutions are:**

1. The need for collaboration of various parties in biodiversity management. Biodiversity management is implemented per sector by institution in accordance with their duties and functions. Through collaboration, the management can have a better synergy, for example between policy formulation, development planning, research, restoration and utilization.
2. Mainstreaming biodiversity management in related sectors. The sustainability of biodiversity is a priority for the relevant sector, therefore efforts must be undertaken to ensure the sustainability.
3. The utilization of biological diversity requires a special management institution, so that the proceed can be reinvested for biodiversity management. This special management institution could be manifested as an Ad Hoc body with authorities to works specifically, systematically, directed, integrated and comprehensive to accelerate the implementation of biodiversity conservation both at national and local level. To ensure the independency, it requires a firm legal basis endorsed by national government such as Presidential Regulation or Government Regulation.



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