



Convention on
Biological Diversity



The Clearing-House Mechanism of the Convention on Biological Diversity

6TH National Report for the Convention on Biological Diversity

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Section I. Information on the targets being pursued at the national level

Country

Indonesia

National Targets

National Target 1: Awareness and participation of various parties established through formal and informal education programs

Rationale for the National Target

National Target (NT) 1 was prepared to comply with the Aichi Target (AT) 1 framework as a reference in formulating a number of action plans and activity programs to implement the 2015-2020 Indonesian Biodiversity Strategy and Action Plan (IBSAP) with a focus on increasing human resource capacity for biodiversity (KemenPPN/BAPPENAS, 2016, p.15).

Based on the IBSAP 2015-2020, the implementation of NT 1 supports the IBSAP Action Plan 4 'Capacity Building of Biodiversity Management' through Activity Groups in raising awareness on biodiversity (KemenPPN/BAPPENAS, 2016, p.249), which include:

- Human resources capacity development through formal and informal education and training.
- Development of CEPA (Capacity, Education and Public Awareness) strategy.
- Community participation improvement in biodiversity management.
- Awareness improvement through enforcement on environmental criminal law.
- Information broadcast and dissemination on biodiversity management.
- Improvement in people's awareness about poverty reduction at the village level and development of biodiversity potential in left-behind areas.
- Improvement in people's awareness through KUMKM (Micro, Small and Medium Enterprise Cooperative) empowerment in forestry, agricultural, marine and fisheries sectors

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- Improvement in people's awareness through degradation control and use of coastal, marine, and inland water ecosystems.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

1. Awareness of biodiversity values

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry/KLHK), the Ministry of Agriculture/Kementan, the Ministry of Marine Affairs and Fisheries/KKP, and the Indonesian Institute of Sciences/LIPI; and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

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Other relevant website address or attached documents

National Target 2: Implementation of sustainable management of biodiversity resources in the planning and implementation of national and regional development to improve community economies

Rationale for the National Target

National Target (NT) 2 was prepared to comply with the Aichi Target (AT) 2 framework as a reference for formulating a number of action plans and activity programs related to the integration of biodiversity values into national and local development in Indonesia, which have been adapted to the national conditions and needs.

The IBSAP 2015-2020 serves as a national reference on the management and utilization of biodiversity in Indonesia that binds Indonesia to carry out development from national level to the regional level (KemenPPN/BAPPENAS, 2016, p.8). As a reference, the IBSAP 2015-2020 helps to mainstream the management of biological resources into the development plan documents (KemenPPN/BAPPENAS, 2016, p.219). This mainstreaming is one of the strategy in developing a collaborative biodiversity management system to be more participatory and inclusive (KemenPPN/BAPPENAS, 2016, p.242).

Based on the IBSAP 2015-2020, the implementation of NT 2 supports the Action Plan 4 of IBSAP, namely 'Capacity Building of Biodiversity Management' through three Activity Groups, which include:

1. Preparation and determination of the updated IBSAP documents.
2. Development of a germplasm organizational system.
3. Development of plans and improvements related to terrestrial and marine biodiversity areas

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Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

2. Integration of biodiversity values

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19)

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 3: Realization of incentives and disincentives system in business and the sustainable management of biological resources

Rationale for the National Target

Based on the IBSAP 2015-2020, the second mission (out of three) of biodiversity management in Indonesia is to make biodiversity a source

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of prosperity and the sustainability of the life of Indonesian people. One way to achieve this mission is through policies on biodiversity usage development for daily activities and livelihood within the relevant society. One strategy related to such policy is to support a biodiversity industry that maintains its awareness of sustainability through the incentives/disincentives system in line with sustainable use of biodiversity. This strategy is carried out in parallel with the development of the biodiversity-based industry.

As part of the evaluation of the IBSAP 2003-2020, National Target 3 was determined from the arising need to develop an incentive and funding scheme to control anthropogenic impacts on biodiversity. Those who capable of applying rewards and/or punishments and market mechanisms (i.e. producers and consumers) will adjust their behaviour through mechanisms of incentives and disincentives to environmental impacts. In efforts to control climate change, for example, the development of such instruments/policies is expected to manifest in a legal umbrella relating to the implementation and operationalization of incentive and funding schemes which may include guidance for funding mechanisms and provision of incentive schemes.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

3. Incentives

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government

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institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 4: Establishment of increased availability and implementation of policies supporting sustainable consumption and production (SCP) in the utilization of biodiversity resources

Rationale for the National Target

The National Target 4 was prepared to comply with the Aichi Target (AT) 4 framework as a reference for formulating a number of action plans and activity programs that have been adapted to national conditions and needs to develop sustainable patterns of production and consumption.

Sustainable development has been implemented in Indonesia starting from preparation of long-term development missions, mainstreaming the medium-term development, to the implementation through various government programs and activities. The National Target 4 was established in light of the needs for a more systematic approach to the sustainable development. These needs, among others, are (1) sustainable development which is explained in tangible terms - stages and milestones, (2) linkages between each stage and criteria/characteristic/measure to reliably assess progress in each step, which is (3) in line with population growth and fulfilment of welfare through sustainable production-consumption and economic growth, (4) the management of waste from human activities that exceeding nature's capabilities of absorption and maintenance, (5) declining non-renewable resources while considering the growing population and consumption, and (6) the availability of quantity and quality of the nature and renewable resources to meet the growing needs and consumptions

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Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

4. Use of natural resources

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

Policies related to Responsible Production and Consumption have been initiated by the government in the document of 10-Year Sustainable Consumption and Production Framework in Indonesia 2013-2023 which contains Indonesia's roadmap in implementing Sustainable Consumption and Production (SCP), and policies listed in the 2015-2019 RPJMN. The vision of the 10-Year Sustainable Consumption and Production Framework in Indonesia 2013-2023 (10 Years of SCP Indonesia) is to enable the implementation of SCP in Indonesia's national development agenda, with an orientation to improving the quality of life for Indonesian people through environmentally friendly and sustainable changes in production and consumption behavior. The mission of 2013 - 2023 SCP Indonesia 10 Years to become the first stage of integration of SCP implementations in several "Quick Wins" national programs and provides a model for the integration of SCP

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implementations in other national programs.

The implementation of the SCP is also strengthened in the 2015-2019 RPJMN document with the introduction of sustainable production and consumption patterns as the Post 2015 and Climate Change Agenda, and the National Development Agenda with policies aimed at implementing sustainable production and consumption patterns as an effort to efficiently use resources and reduce environmental pollution and improve communities quality of life. This step is supported by operational policies, which are:

- Changes in patterns of production and consumption as well as people's lifestyles through education and campaigns;
- Implementation of the principles of sustainable production and consumption patterns in the business cycle and business process;
- Development of product standards that are environmentally friendly; and
- Public services in the implementation of sustainable consumption patterns.

(Source: RAN TPB/National Action Plan SDGs, website: <http://sdgs.bappenas.go.id/>)

Other relevant website address or attached documents

[RAN TPB/National Action Plan SDGs](#)
[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 5: Development of ex-situ conservation areas to protect local ecosystems

Rationale for the National Target

Based on the IBSAP 2015-2020, in-situ and ex-situ biodiversity management is encouraged in order to maintain the existence of biodiversity and its optimal benefits for the present and future. This management strategy is meant to maintain biodiversity to be preserved in daily lives of Indonesian people by improving biodiversity knowledge such as acts of greening and maintenance of the space with appropriate utilization of biodiversity; **development of biodiversity park** and/or other relevant ex situ conservation areas to reflect

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the original identity of biodiversity of the specific region and as a source of the development of sustainable biodiversity utilization.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

5. Loss of habitats

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN / BAPPENAS, 2016, pp. 17-19).

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 6: Implementation of policies for sustainable management and harvesting

Rationale for the National Target

National Target 6 was initiated to deal with one of the national strategic issues identified during the IBSAP 2003-2020 implementation period up to 2014, which is to ensure the sustainable utilization of fisheries and marine resources (SDA) both in capture fisheries and aquaculture, taking into account ecological rules and limitations, legal compliance and reporting system (KemenPPN/BAPPENAS, 2014).

National Target 6 was prepared following the Aichi Target (AT) 6 framework as a reference for formulating a number of action plans and activity programs that have been adapted to national conditions and needs regarding sustainable management of marine biological resources.

Based on the IBSAP 2015-2020, the implementation of National Target 6 supports IBSAP Action Plan 3, 'Maintenance and preservation of biodiversity' through the Activity Group 'Management & harvesting of marine resources species that are protected and managed sustainably' (KemenPPN/BAPPENAS, 2016, p.247).

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Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

6. Sustainable fisheries

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets

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by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)
[Kajian Strategi Pengelolaan Perikanan yang Berkelanjutan. Direktorat Kelautan dan Perikanan, Kementerian PPN/BAPPENAS.](#)

National Target 7: Improved sustainably managed land for agricultural, plantation and animal husbandry

Rationale for the National Target

National Target (NT) 7 was initiated to deal with one of the national strategic issues identified during the period of 2003-2020 IBSAP implementation up to 2014, relating to the need for regulation on biodiversity management; specifically, that are more operational and technical for managing biodiversity sustainably (KemenPPN/BAPPENAS, 2016, p.182).

National Target 7 was prepared to comply with the Aichi Target (AT) 7 framework as a reference in formulating a number of action plans and activity programs that have been adapted to national conditions and needs regarding area management for forestry, agriculture, plantation, animal husbandry, and aquaculture purpose that ensure sustainable biodiversity management.

Based on the 2015-2020 IBSAP, the implementation of National Target 7 supports IBSAP Action Plan 3, 'Maintenance and preservation of biodiversity' through the Activity Group on the Development of national and local regulations to support the biodiversity sustainable management and harvesting targets (KemenPPN/BAPPENAS, 2016, p.247).

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Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

7. Areas under sustainable management

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 8: Reduction of pollution that damages biological resources and ecosystem functions

Rationale for the National Target

National Target (NT) 8 is the implementation for reducing the level of pollution that damages biological resources and ecosystem functions, thereby supporting Aichi Biodiversity Target (ABT) 8.

Based on the 2015-2020 IBSAP, the implementation of NT 8 supports IBSAP Action Plan 3, i.e. 'Maintenance and preservation of biodiversity' through the Activity Group 'Pollution control from many types of activities'. The implementation of NT 8 is expected to reduce the level of environmental pollution - be it in air, land or water, preventing habitat damage and extinction of biodiversity.

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Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

8. Pollution

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with

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relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 9: Implementation of prevention and eradication programs for invasive alien species (IAS)

Rationale for the National Target

National Target 9 was prepared following the Aichi Target (AT) 9 framework as a reference for formulating a number of action plans and activity programs related to the control of Invasive Alien Species (IAS), which have been adapted to national conditions and needs.

Referring to the IBSAP 2015-2020, one of the threats to the preservation of biodiversity is the presence of IAS which can change natural ecosystems and cause degradation and even habitat loss. The introduction of IAS into the ecosystem may occur, naturally and unnaturally, through human activities including trade and transportation nationally and internationally. Given that the IAS are a cross-cutting issue, cross-sector collaboration and specific regulations are needed in the management of IAS to protect biodiversity. In addition, it is also necessary to compile a comprehensive reference for relevant sectors in the form of the National Strategy and Management Action Plan for IAS so that the management of IAS will be carried out more precisely, effectively and efficiently by each sector in accordance with its authority, while maintaining coordination and integration nationally to bring positive impact to the environment, health, as well as social and economic aspects of society, at both local and national level

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Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

9. Invasive Alien Species

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

[National Strategy and Directive Action Plan for Management of Invasive Alien Species in Indonesia](#)

National Target 10: Reduced level of anthropogenic pressure on coral reefs and other vulnerable ecosystems affected by climate change

Rationale for the National Target

National Target (NT) 10 was prepared following the Aichi Target (AT) 10 framework as a reference for formulating a number of action plans and activity programs related to reducing pressure on vulnerable ecosystems, which have been adapted to national conditions and needs.

Climate change is a major challenge in the implementation of the IBSAP 2015-2020 which is amended from the IBSAP 2003-2020. Biodiversity of coral reefs ecosystems built from ecological processes for hundreds or even thousands of years contains the highest diversity out of a few major ecosystems in Indonesia. Climate change impacts on the coral reef's damages, particularly by triggering coral bleaching. Therefore, strategies are needed to ensure climate adaptation and mitigation at all levels.

Based on the IBSAP 2015-2020, the implementation of NT 10 supports the IBSAP Action Plan 3, 'Maintenance and preservation of biodiversity ', through several Activity Groups (KK) including:

- § More reviews on climate change mitigation and adaptation (KK-1);
- § Improvement of activities dealing with climate change adaptation and mitigation at national and local levels (KK-2)

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Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

10. Vulnerable ecosystems

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of

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Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 11: Realization of sustainable maintenance and improvement of conservation areas

Rationale for the National Target

National Target (NT) 11 is a manifestation of the Government of Indonesia's commitment to support the vision of 'Realizing a beautiful and sustainable Indonesia' - the sixth out of eight visions in the National Long Term Development Plan (RPJPN) for 2005-2025 (KemenPPN/BAPPENAS, 2016, p.2).

This vision was strengthened in the third phase of the RPJPN through the technocratic draft of the National Medium-Term Development Plan (RPJMN) for 2015-2019 which emphasizes the preservation of natural resources and the environment and disaster management as one of the sub agendas to realize economic independence (KemenPPN/BAPPENAS, 2016, p.6).

National target 11 was prepared following the Aichi Target (AT) 11 framework as a reference for formulating a number of action plans and activity programs that have been adapted to national conditions and needs regarding the area of protection and conservation.

Based on the 2015-2020 IBSAP, the implementation of NT 11 supports IBSAP Action Plan 3. 'Maintenance and preservation of biodiversity' through several Activity Groups (KK) with the following themes:

- § Expansion of marine protected area into 20 million ha.
- § Recovery of land conservation areas.
- § Sustainable management of the protected forest.
- § Integrated management of watersheds.
- § Essential ecosystems management.

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§ Expansion and sustainable management of lands for agriculture, plantations and animal husbandry.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

11. Protected areas

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)
[Buku I Rencana Pembangunan Jangka Menengah Nasional 2015-2019. Kementerian PPN/BAPPENAS](#)

National Target 12: Realization of efforts to maintain the populations of endangered species as a national conservation priority

Rationale for the National Target

National Target 12 is a manifestation of the Government of Indonesia's commitment to support the vision of 'Realizing a beautiful and sustainable Indonesia' - the sixth out of eight visions in the National Long Term Development Plan (RPJPN) for 2005-2025 (KemenPPN/BAPPENAS, 2016, p.2).

Biodiversity encompasses the entirety of life on Earth, which consists of various levels, ranging from genetics, species to ecosystems. The entire levels, be it in the terrestrial or marine ecosystem, interact and influence each other in one shared environment. Each component in the ecosystem plays specific roles and functions; therefore, the loss of species may adversely impact the ecosystem.

As of 2014, 14 (fourteen) animal species have been defined as endangered. The Government has determined 25 priority endangered animal species (terrestrial) for national conservation with a target of 10% increase of their population in the monitoring location until 2019, which is benchmarked from 2013 baseline data (DJKSDAE-KLHK, 2015, p.46). Meanwhile, conservation efforts for marine biota diversity are made with the commitment of Ministry of Marine Affairs and Fisheries to expand the number of species under the list of protected and preserved marine biodiversity species to 20 species cumulatively by 2019 (KKP, 2017, p.96). Some steps taken are optimizing the management of conservation areas, improving the quality of biodiversity data and information, and increasing the utilization of economic values of biodiversity and environmental services. Other steps taken are breeding efforts at conservation institutions and semi-natural animal sanctuaries within conservation areas.

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Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

12. Preventing extinctions

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

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Other relevant website address or attached documents

[Rencana Strategis Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem 2015-2019](#)
[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)
[Rencana Strategis Kementerian Kelautan dan Perikanan Tahun 2015-2019](#)

National Target 13: Implementation of system development in nurseries, genetic breeding and domestication of wildlife as well as the breeding of wild animals

Rationale for the National Target

National Target 13 is intended to maintain and protect genetic diversity that has provided various germplasm sources for food and high value-added biodiversity products in supporting sustainable development. The National Target 13 was prepared to comply with the Aichi Target (AT) 13 framework as a reference for formulating a number of action plans and activity programs that have been adapted to national conditions and needs regarding the management of genetic resources.

The maintenance and protection of genetic resources need to be carried out through the development of systems for breeding, genetic breeding and wildlife domestication, as well as the breeding of wild species. Some things that underlie the need for the maintenance/preservation, protection and utilization of genetic resources are:

§ Management and safeguarding of biodiversity sustainability can be carried out by the government together with the community,

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one of which can be done through breeding wild plants and animals. Breeding activities can support the achievement of wildlife domestication (DJKSDAE-KLHK, 2015).

§ Applied technology engineering in the field of aquaculture is carried out to maintain the sustainability of germplasm. As a result of breeding or domestication, new varieties of fish may enrich the types of fish circulating in the community. The increase of availability and quality assurance of broodstocks and superior seeds to support aquaculture production targets may have its quality guaranteed through the establishment of Indonesian National Standards for broodstocks and seed production for aquaculture commodities for freshwater, brackish or marine aquaculture (Kemen KP, 2017).

§ Various efforts to develop and expand seedling logistics in the fields of food and agriculture need to be carried out in the form of: national seed/nursery institutional arrangements- protection, maintenance and utilization of national genetic resources for the development of local superior varieties; empowerment of local breeders and seed producers; increasing the role of private sector in developing seed/ seedling industry; and developing seed industry for the independence from the national seed industry (Ministry of Agriculture, 2016).

§ In the fields of agriculture, plantation and animal husbandry, the arrangement and empowerment of seed institutions will give a positive impact on the realization of the seed industry to produce quality seeds of superior varieties in a sustainable manner. (BPPP, 2015).

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

13. Agricultural biodiversity

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-

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Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

Other relevant website address or attached documents

[Rencana Strategis Balai Besar Penelitian dan Pengembangan Bioteknologi dan Sumber Daya Genetik Pertanian 2015-2019. Badan Penelitian dan Pengembangan Pertanian, Bogor.](#)

[Rencana Strategis Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem 2015-2019](#)

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

[Rencana Strategis Kementerian Pertanian 2015-2019. Kementerian Pertanian, Jakarta](#)

[Rencana Strategis Kementerian Kelautan dan Perikanan Tahun 2015-2019](#)

National Target 14: Improved functionality of integrated ecosystems to ensure the improvement of essential services (water, health, livelihoods and tourism)

Rationale for the National Target

National Target 14 is to ensure the improvement of integrated ecosystem functions to provide important services, such as water supply, health, livelihoods and tourism. In order to achieve National Target 14, the action plan for maintaining and preserving biodiversity is formulated through various activity groups (KemenPPN/BAPPENAS, 2016, p. 246). The National Target 14 is prepared to comply with the Aichi Target (AT) 14 framework as a reference for formulating a number of action plans and activity programs that have been adapted to national conditions and needs. Activity groups in this action plan (DJKSDAE-KLHK, 2015; KemenKP, 2017; Ministry of Agriculture, 2016) include:

- § Utilization of conservation area environmental services,
- § Development of ecotourism attraction,

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- § Management and conservation of reservoirs, retention basins, lakes, and other water storage structures,
- § Management and development of essential ecosystem areas,
- § Utilization of coastal areas, oceans, and small islands,
- § Increasing production and productivity of environmental-friendly agricultural products,
- § Increasing production and productivity of sustainable plantation crops,
- § Development of marine and fisheries products and product processing businesses.

Preservation of ecosystems inside or outside of conservation areas may provide important ecosystem services for the survival of human life. In order to maintain or even increase such availability, utilization and maintenance of ecosystem services, the following are needed:

- § Management and utilization of ecosystem services by the government and the private sector through a permit mechanism taking into account the limitation of the capacity of ecosystems so that the function ecosystem services is maintained (DJKSDAE-KLHK, 2015; Kemen KP, 2017).
- § Ecosystem restoration efforts to improve ecosystem functions through participatory actions (DJKSDAE-KLHK, 2015; Kemen KP, 2017).
- § Development of biodiversity conservation areas and the area outside of conservation areas to provide various types of ecosystem services. From economic and social perspectives, both biodiversity conservation areas and the area outside of conservation areas possess high economic value (DJKSDAE-KLHK, 2015).

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

14. Essential ecosystem services

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

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Other relevant website address or attached documents

[Rencana Strategis Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem 2015-2019](#)
[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)
[Rencana Strategis Kementerian Pertanian 2015-2019. Kementerian Pertanian, Jakarta](#)
[Rencana Strategis Kementerian Kelautan dan Perikanan Tahun 2015-2019](#)

National Target 15: Realization of conservation and restoration of degraded ecosystems in the region

Rationale for the National Target

National Target 15 in the IBSAP 2015-2020 is for the realization of ecosystem conservation and restoration in degraded areas (KemenPPN/BAPPENAS, 2016, p. 246). National Target 15 is intended to project that ecosystem conservation and restoration in degraded areas can restore and improve the production function and ecological function of ecosystems to support human continuity. Ecosystem conservation and restoration are expected to also provide direct benefits to the community as a source of economic income from the utilization of restored or enhanced environmental services. The National Target 15 is prepared to comply with the Aichi Target (AT) 15 framework as a reference for formulating a number of action plans and activity programs that have been adapted to national conditions and needs regarding ecosystem conservation and restoration.

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Ecosystem conservation and restoration in degraded areas need to be carried out under the consideration that:

- Conservation and restoration of degraded areas are efforts to increase the effectiveness of conservation and management of biodiversity in order to sustain the balance between ecosystems, biodiversity and natural resources as a life-system to support sustainable development. (DJKSDAE-KLHK, 2015).

Activities related to utilization of marine and fisheries resources, whether it is located inland, coastal or oceanic area, may impose ecosystem damage, sedimentation and pollution. Such damage to marine and fisheries resources, if not revived or restored, will significantly reduce the stream of benefits gained from environmental services. Therefore, various efforts are required to perform ecosystem restoration and pollution control as well as marine and fisheries resources revitalization (KemenKP, 2017).

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

15. Ecosystem resilience

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and

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civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

Other relevant website address or attached documents

[Rencana Strategis Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem 2015-2019](#)
[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)
[Rencana Strategis Kementerian Kelautan dan Perikanan Tahun 2015-2019](#)

National Target 16: Implementation of the Nagoya Protocol and its derivative instruments through legislation and institutions at the central and local levels

Rationale for the National Target

National Target 16 in the IBSAP 2015-2020 is the implementation of the Nagoya Protocol and its related instruments such as legislation and institutions at the level of central and regional governments with an action plan to develop the biodiversity regulations related to the Nagoya Protocol (KemenPPN/BAPPENAS, 2016, p. 246).

National Target 16 is intended to develop benefits from the abundant genetic resources that is relied upon by various ethnic groups with diverse traditional knowledge of the use and management of natural resources, as a source of food, medicinal raw materials and various essentials, in better and fairer manners. The National Target 16 was prepared to comply with the Aichi Target (AT) 16 framework as a basis for formulating a number of action plans and activity programs that have been adapted to national conditions and needs regarding access to genetic resources and the distribution of benefits from their use.

Based on the agreement of the Convention on Biological Diversity (CBD), the rights and sovereignty of a country to control and utilize its biodiversity and the relevant wealth of traditional knowledge with the concept of access and benefit-sharing of biodiversity have been recognized, because CBD aims to encourage conservation of biodiversity, sustainable use of biodiversity and benefit sharing, resulted from fair and balanced utilization of biodiversity. Special legal protection is required to conserve nature and protect the wealth of traditional knowledge. According to Rohaini (2015), there are several main reasons for the need to protect traditional knowledge, which are for

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§ Justice.

It is natural and fair for the owner of traditional knowledge whose knowledge is used and commercialized to get profit or compensation, both financially and non-financially.

§ Conservation.

Preservation of traditional knowledge regarding sustainable use of biodiversity implies protection on maintenance of the environment, biodiversity, as well as sustainable agricultural activities.

§ Maintenance of traditional and cultural practices.

Protection of traditional knowledge can be used to increase people's value and trust.

§ Prevention of abuse by parties that do not have rights.

Protection of traditional knowledge is a way to reduce bio-piracy while ensuring fairness and balanced treatment between owners and users of traditional knowledge.

§ Promoting the importance of developing traditional knowledge.

Thus, in order for the implementation of the Nagoya Protocol to be effective in regulating access and benefit sharing of biodiversity utilization, the implementation of the Nagoya Protocol and its derived instruments such as legislation and institutions at the national and regional levels is necessary.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

16. Nagoya Protocol on ABS

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

[Perlindungan hukum terhadap pengetahuan tradisional melalui pengembangan hukum Sui Generis](#)

National Target 17: Implementation of the new IBSAP at various levels

Rationale for the National Target

Indonesia's biological richness and diversity are unique and beautiful and might serve as capital for sustainable development. Until now, there are still many unidentified biological resources, which may become a source of future livelihoods. Sustainable management of biodiversity is very important to maintain the sustainability of ecosystem services and allow the sustainable use of biodiversity to be possible. Therefore, biodiversity management planning becomes important in providing Indonesians with a reference for sustainable management and utilization of biodiversity for the prosperity of the nation. National references on the management and utilization of Indonesia's natural resources have been included in the 2015-2020 IBSAP. The IBSAP 2015-2020 is intended to be a binding document for the implementation of national development in accordance with the mandate of Act No. 5 Year 1994 concerning the Ratification of the United Nations Convention on Biological Diversity, Act No. 21 Year 2004 concerning Ratification of Cartagena Protocol on Biosafety to

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the Convention on Biological Diversity, Act No. 11 Year 2013 concerning Ratification of Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits of Their Convention on Biological Diversity and other laws and regulations related to the management and utilization of biodiversity.

It is shown in the IBSAP 2003-2020 program that the adoption of action plans and programs still requires an integrated implementation of the 2010-2014 National Medium Term Development Plan and Ministries/Institutions Strategic Plan. Most of the programs adopted are only related to improving conservation and living rehabilitation. Therefore, a number of matters still need to be improved, be it: the level of understanding on biodiversity functions at the regional level, the synergy between central and regional biodiversity programs as well as socialization on biodiversity management policies. For the effective management of biodiversity, the IBSAP 2015-2020 has been prepared so that future biodiversity management policies can improve people's understanding on the importance of the conservation of biodiversity and its value, including mainstreaming biodiversity issues at every institutional and community level to ensure that the IBSAP 2015-2020 can be implemented at various levels.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

17. NBSAPs

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-

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Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 18: Development of local wisdom and innovations as well as bioprospecting capacity building for the conservation and sustainable utilization of biodiversity

Rationale for the National Target

Indonesia has very diverse ethnics, cultures and biodiversity. Every ethnic group has a diversity of traditional knowledge related to the use and management of biodiversity, as a source of food, medicinal ingredients and various materials needed for people's livelihood. Various Indonesian cultures possess local wisdom that has been proven to be able to preserve various biodiversity. Local wisdom is a noble value that governs the order of life within the community, one of the purposes is to protect and manage the environment sustainably. (Ministry of Home Affairs Regulation No. 52 Year 2014 concerning Guidelines for Recognition and Protection of Customary (Adat) Law Communities; Ministry of Marine Affairs and Fisheries Regulation (PermenKP) No. 40 Year 2014 concerning People's Participation and Communities Empowerment in Coastal Areas and Small Islands; PermenKP No. 08 Year 2018 concerning Procedures on Determining Management Area for Adat Law Communities for Space Utilization in Coastal and Small Islands Areas; Ministry of Environment and Forestry Regulation (PermenLHK) No. 34/MenLHK/Sekjen/Kum.1/5/2017 concerning Recognition and Protection of Local Knowledge; PermenLHK No. P.43/MenLHK/Setjen/Kum.1/6/2017 concerning Community Empowerment Around Sanctuary Reserves Areas (KSA) and Nature Conservation Areas (KPA); Ministry of Forestry Regulation No. 85 Year 2014 in conjunction with PermenLHK No. 44 Year 2017 concerning Procedures on Cooperation in Organizing KSA and KPA). Local wisdom may be closely related to biodiversity because biodiversity is embedded within the culture of a society and the wisdom of the community, especially in relation to endemic biodiversity. The ability of local wisdom to

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preserve high biodiversity turns out to be in harmony with sustainable ways of life. Local wisdom is still being practised up to date and remains inherently in the lives of the Adat (customary) community. In relation to biodiversity, local wisdom can be grouped into three categories: biodiversity custodian, biodiversity beneficiaries and biodiversity knowledge disseminator. The first group refers to the wisdom of the adat community in taking good care of ecosystems and biodiversity in their daily lives.

It is possible to utilize the local wisdom because there is still much local wisdom still practised by the community in the conservation and utilization of biodiversity until now. Various local wisdom that supports the preservation of environment and forest areas along with their biodiversity can be utilized to manage forest areas, especially adat forests. Local wisdom can also be utilized in the management of coastal areas and small islands. Adat law communities and traditional fishermen can be involved in strengthening the zoning plans for coastal areas and small islands with the government and business sector; the local community may take the initiative to propose zoning plans. The rights of the adat law communities to regulate marine areas which are managed for generations have also been embodied in the laws and regulations. The utilization of space and resources of coastal waters and small islands within the adat law area is authorized by the relevant local adat law community. Meanwhile, traditional fishermen and their fishing areas are recognized through the inclusion of traditional fishing areas as sub-zones in the zoning plans, providing them with complete legal protection. Conservation of marine resources for local communities such as sasi (oath) has proven to increase the production of targeted fish with low levels of exploitation while increasing recovery of fish stocks and income of the local people. Therefore, the use and development of local wisdom may be used to support the conservation and sustainable use of biological resources.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

18. Traditional knowledge

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 19: Implementation of science and technology capacity building for sustainable management of biodiversity

Rationale for the National Target

In order to make biodiversity as a source of prosperity and sustainable livelihood of Indonesian people and the nation, the development of economic benefits from biodiversity is needed to support economic growth, national competitiveness and public welfare. For this reason, it is necessary to increase both human resources and science and technology resources to support the sustainable utilization of biodiversity as a source of economic growth as well as the sustainable livelihood of the society (Act No. 18 Year 2002 concerning National System of Research, Development, and Application of Science and Technology).

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For the sustainable use of biological diversity, data collection and information regarding benefits and utilization of biological resources is necessary. These are related to the knowledge on biodiversity benefits that continually develop, and to the monitoring on the regulations regarding the sustainability of biological resources. Science and technology derived from the research are useful not only to recognize the benefits of biodiversity but also to develop it into life's necessities such as food and health and energy materials. At the same time,

science and technology are also necessary to support the management of the sustainability of biological resources.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

19. Biodiversity knowledge

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 20: Identification of resources and budget effectiveness in the implementation of sustainable management of biodiversity

Rationale for the National Target

Biodiversity conservation and sustainable use of biological resources require effective financing. Based on the review of the 2010-2014 budget and the estimation of funding requirements for the management of conservation areas in 2015-2020, the average needs for biodiversity management will reach USD 18.62 per ha per year or USD 718 million per year. In addition, an average staff of 49 people is needed per 100,000 ha or 18,912 people for all Indonesian conservation areas. Estimated funds for the management of the conservation area are lacking at approximately USD 13.5 per ha per year, with an accumulation of USD 521.9 million per year. Funding sources related to the management of biodiversity in Indonesia are coming from the government, private sector, public and foreign grants. Funding sourced from the government is included in the State Revenues and Expenditures Budget (APBN) and the Regional Revenues and Expenditures Budget (APBD) in the development programs related to the management of biodiversity. Funds from the private sector and the national community have shown quite a good reliability in terms of the amount and mechanism of funding. Local private funds are generally available in the form of investments or loans. Funding through grants or funding for social development is carried out through companies' corporate social responsibility (CSR). Biodiversity funding through the use of CSR funds is still limited to CSR of companies or industries that have biodiversity-based business activities, such as plantations, animal husbandry, food and beverage processing, cosmetics producers and renewable energy. Private companies that rely on the use of natural materials, such as herbal medicine (jamu) companies also provide added value to the use and development of biodiversity in Indonesia. In such conditions, for the effective biodiversity management, the identification of financial resources for biodiversity conservation and increasing budget efficiency is required.

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Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

20. Resource mobilization

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 21: Implementation of comprehensive and integrated data gathering and information mapping on biodiversity

Rationale for the National Target

Biodiversity is the basic capital to support sustainable development; effective natural resource management is required to meet community needs, sourcing industrial raw materials from the ecosystem while safeguarding its environmental functions. In order to manage biodiversity wisely and effectively, data and information that can provide a clear picture of the richness and potential of biodiversity are necessary, starting from the ecosystem level to species and genetic levels which has developable sustainable utilization. The potential of this biodiversity data and information needs to be recognized to prevent the loss of biodiversity. Data collection and information on biodiversity are needed because they can provide:

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- Updates on information on the benefits of biodiversity that continues to grow;
- Information related to controlling or monitoring utilization to prevent over-exploitation and enforcing regulations regarding sustainability; and
- Information about the economic value of biodiversity for the welfare of the community and its contribution to the national economy.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

12. Preventing extinctions
17. NBSAPs
19. Biodiversity knowledge

Sub-Aichi Targets or Target components

1. Awareness of biodiversity values
2. Integration of biodiversity values
3. Incentives
4. Use of natural resources
5. Loss of habitats
6. Sustainable fisheries
7. Areas under sustainable management
8. Pollution
9. Invasive Alien Species
10. Vulnerable ecosystems
11. Protected areas

12. Preventing extinctions
13. Agricultural biodiversity
14. Essential ecosystem services
15. Ecosystem resilience
16. Nagoya Protocol on ABS
17. NBSAPs
18. Traditional knowledge
19. Biodiversity knowledge
20. Resource mobilization

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 22: Implementation of various conflict settlement processes related to biodiversity

Rationale for the National Target

In managing biodiversity several types of conflicts may be encountered, i.e. conflicts within conservation areas due to non-procedural utilization and the ones between human and wildlife. Conflict and pressure on conservation areas by the community can affect biodiversity management. Land use conflict and pressure, in various forms, still pose a challenge to the management of conservation areas. Conflicts can also occur between local communities and wildlife, such as elephants and tigers, due to limited wildlife habitat. It is imperative to resolve the conflicts in order to enhance the effectiveness of the management of conservation areas. Conservation efforts based on the cultural and spiritual values of conservation; good governance; conflict resolution; collaborative management; and the needs of adat communities and the wider community are expected to make the management of conservation area more effective. Therefore, the implementation of a comprehensive resolution of various conflicts related to biodiversity management is needed. (Ministry of Forestry Regulation P.48 Year 2009 in conjunction with P.53 Year 2014 concerning the amendment of Ministry of Forestry Regulation P.48/Menhut-II/2008 concerning Guidelines for Conflict Management between Humans and Wildlife).

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

- 1. Awareness of biodiversity values
- 5. Loss of habitats
- 12. Preventing extinctions

Sub-Aichi Targets or Target components

- 1. Awareness of biodiversity values
- 2. Integration of biodiversity values
- 3. Incentives
- 4. Use of natural resources
- 5. Loss of habitats
- 6. Sustainable fisheries

7. Areas under sustainable management
8. Pollution
9. Invasive Alien Species
10. Vulnerable ecosystems
11. Protected areas
12. Preventing extinctions
13. Agricultural biodiversity
14. Essential ecosystem services
15. Ecosystem resilience
16. Nagoya Protocol on ABS
17. NBSAPs
18. Traditional knowledge
19. Biodiversity knowledge
20. Resource mobilization

Relevant documents and information

The formulation of National Targets was carried out in a participatory manner through (1) evaluation and mapping of suitability and implementation of the IBSAP 2003-2020; (2) as a whole, formulating action plans and programs for achieving national and global targets by updating data and information regarding the current status of Indonesian biodiversity and key documents such as the National Medium-Term Development Plan 2015-2019 and Government Work Plan in 2015 which are published by five Ministries/Government institutions, i.e. the Ministry of Environment and the Ministry of Forestry (since January 2015, both ministries have merged and became the Ministry of Environment and Forestry), the Ministry of Agriculture, the Ministry of Marine Affairs and Fisheries, and the Indonesian Institute of Sciences (LIPI); and (3) consultations, as the results of identification of national targets along with the action plans and programs, with relevant biodiversity experts, biodiversity managers in Ministries/Agencies, Regional Governments, private sector/biodiversity actors, and civil society organizations through various workshops, seminars, focus group discussions during the period 2013 - 2014 at the national level and some in the regional level (KemenPPN/BAPPENAS, 2016, pp. 17-19).

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

Main measure 1: Research, data management, and documentation of biodiversity

Measures taken to contribute to the implementation of your country's national biodiversity strategy and action plan

In order to promote biodiversity as a source of welfare and life sustainability, biodiversity data and research documentation are needed for responsible decision making in managing biodiversity. Consistent, continuous and integrated biodiversity research is required to strengthen the identification and the benefits of biodiversity. Biodiversity data management and documentation need to be in accordance with international standards so that the wisdom of local community is well recognized and the rights of local community could be well documented and accepted by international communities. Overall communication regarding biodiversity management including research on biodiversity exploration, updates on biodiversity identification and condition, development of better use of biodiversity, cooperation in biodiversity management and updating biodiversity policy is accommodated in the Indonesian Biological Diversity Clearing House Mechanism (BKKHI). The BKKHI Working Group was established through Minister of Environment and Forestry Decree No. SK. 755/MenLHK/KSDAE/KUM.0/9/2016. The BKKHI has several functions (BKKHI, 2018) which include:

- § Reconciling between users and providers of biodiversity data or information.
- § Monitoring the implementation of biodiversity convention, including the IBSAP implementation.
- § Facilitating access to data and information exchange among stakeholders in the field of biodiversity at the national, regional and international level.
- § Providing assistance to familiarize and efforts to implement IBSAP with national targets.
- § Serving as a reference in the formation of bridging the scientific and technical cooperation at the local, national and international level.

BKKHI as the centre of biodiversity management involves a number of biodiversity management nodes, namely the biodiversity stock management node, communication node for biodiversity research, utilization of biodiversity node, and the access node for parties; as shown in Figure 1:

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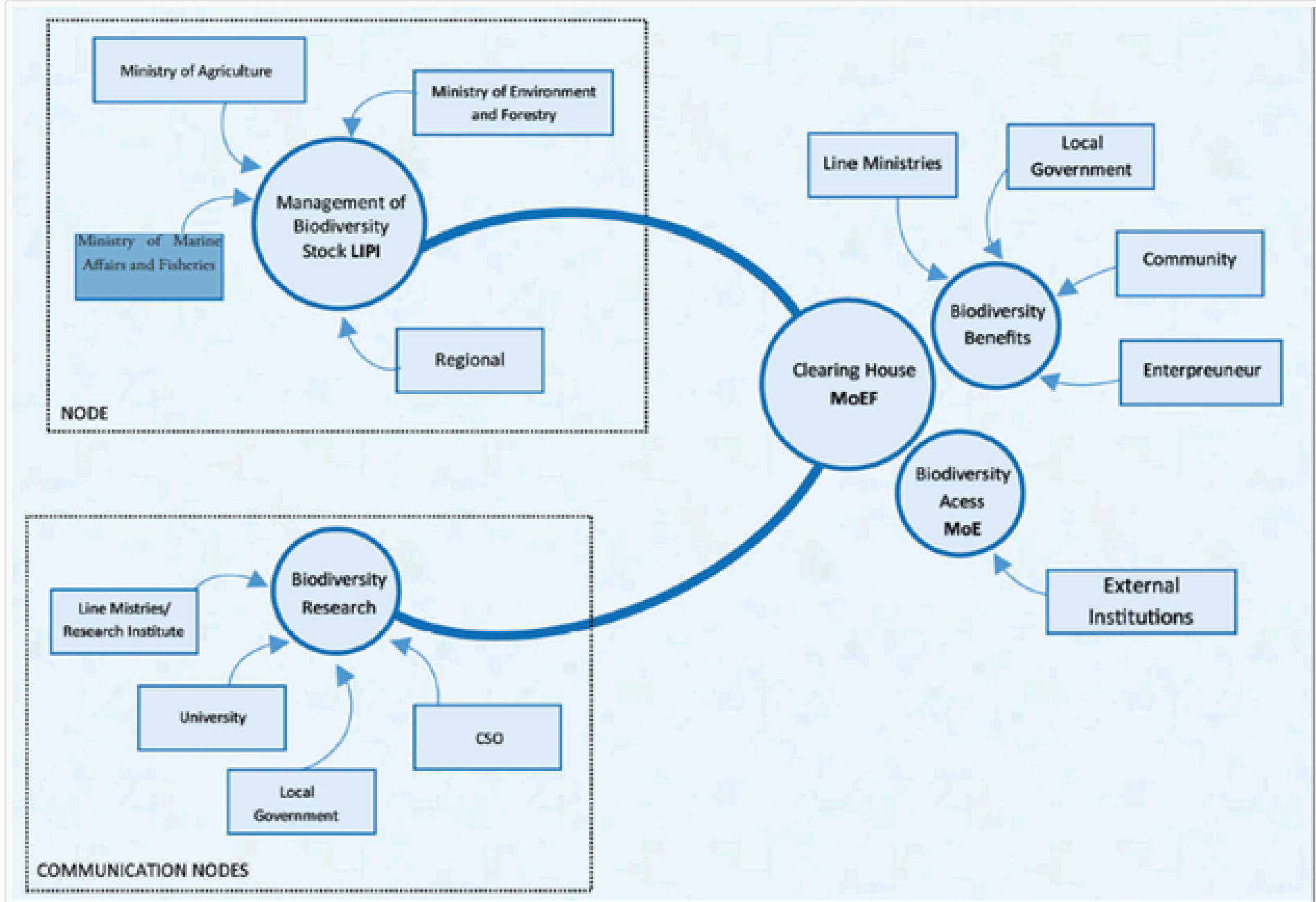


Figure 1. Biodiversity management nodes through the Indonesian Biological Diversity Clearing House Mechanism (BKKHI) (Source: KemenPPN/BAPPENAS, 2016, p.197)

In addition, data and information management is carried out through the functional information network of the Indonesia Biodiversity Information Facility (InaBIF) which facilitates and supports the provision of information and communication of biodiversity information in Indonesia, especially data and information on genetic resources and traditional knowledge. InaBIF serves as a medium to facilitate various information between research institutions, universities, local governments, policymakers and law enforcement. InaBIF also accommodates trade in flora and fauna. InaBIF serves as a hub for data on biodiversity conservation and utilization from nodes of technical ministries and other institutions which have biodiversity conservation actions and collections. More detailed activity groups which consist of efforts to achieve national targets through research, data management, and biodiversity documentation are presented in table 1. While the achievements of each activity are described in more detail in Section 3.

Table 1. Correlation between Activity group and National Target and Aichi Target achievement.

No.	Activity Group (KK)	AT, NT
1	Improvement of biodiversity documentation	NT-21
2	Improvement of biodiversity identification	NT-21
3	Improvement of biodiversity data and information compilation.	NT-21
4	Biodiversity data maintenance	NT-21
5	Exploration of new biodiversity potential.	NT-21
6	Research, Mastery, and Usage of Science and Technology Program of Biodiversity resources	AT-19, NT-19, NT-21
7	Improvement of basic research of biodiversity	NT-21
8	Improvement of applied research on biodiversity	NT-21
9	Development of a strategy to use results of biodiversity research	NT-21
10	Improvement on patents of biodiversity research	NT-21

*) AT: Aichi Target, NT: National Target

National Target(s)

National Target 12: Realization of efforts to maintain the populations of endangered species as a national conservation priority

National Target 17: Implementation of the new IBSAP at various levels

National Target 19: Implementation of science and technology capacity building for sustainable management of biodiversity

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes

Measure taken has been partially effective

tools or methodology used for the assessment of effectiveness above

The program/activity achievements are monitored and evaluated following the framework and mechanism for the implementation of monitoring and evaluation and IBSAP reporting (KemenPPN/BAPPENAS, 2016, p.267) as presented in figure 2:

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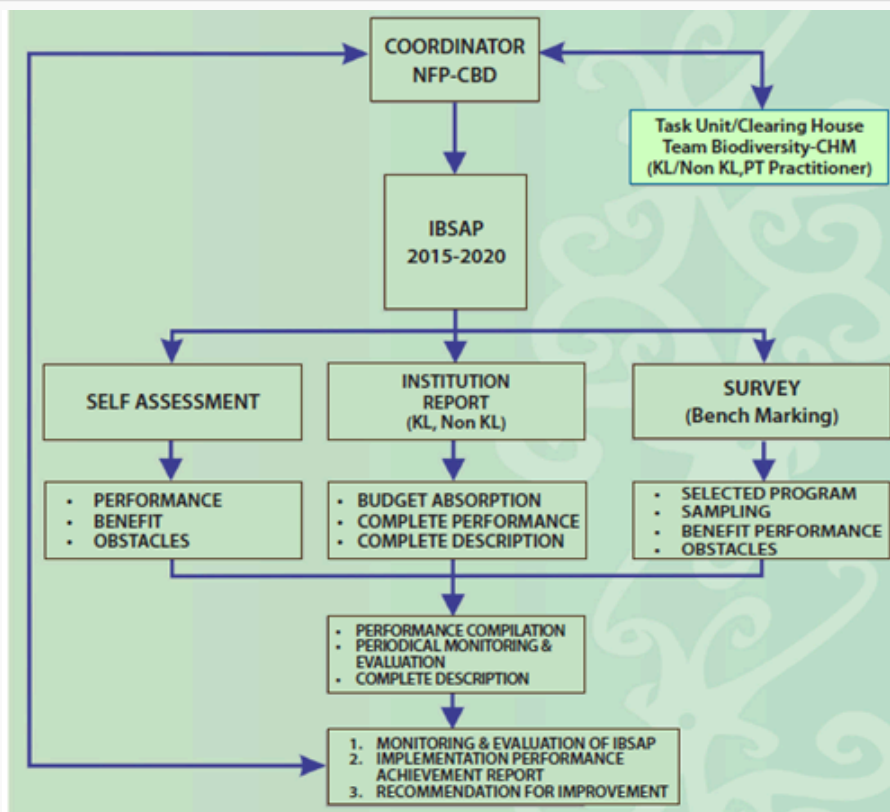


Figure 2. The mechanism for the implementation of monitoring and evaluation

Key documents for monitoring and reporting on program/activity achievements that are under government responsibility includes:

- National Medium-Term Development Plan (KemenPPN/BAPPENAS, 2015)
- Five-year strategic plans of government ministries and agencies.
- Annual performance reports of government ministries and agencies.

National monitoring targets are set following the framework and mechanism of monitoring, evaluation and reporting (MEP) listed in the 2015-2020 IBSAP. Monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions relevant to Indonesia's biodiversity affairs: Ministry of Environment and Forestry (KLHK), Ministry of Marine Affairs and Fisheries (KKP), Ministry of Agriculture (Kementan) and Indonesian Institute of Sciences (LIPI). CBD NFP is assisted by a task force that consists of

representatives from government institutions, non-government institutions, universities, and/or practitioners.

The IBSAP monitoring mechanism is referred to the Government of Indonesia's monitoring system based on Presidential Regulation No. 29 Year 2014 concerning Government Agency Performance Accountability Systems (SAKIP). This system does not specifically monitor the achievement of national targets in IBSAP, but the data and information reported could serve as illustrations of the achievement of each National Target. The final output instrument from SAKIP for monitoring National Targets includes reporting documents from government institutions called Government Performance Reports (LKJ) and statistical reports of ministries or government agencies.

The assessment of the progress of implementation uses quantitative and qualitative data sourced from the material published by non-government institutions such as academicians and civil society organizations in the form of research and scientific reports, case studies, news articles and various forms of official documents from meetings, discussions or conferences.

Relevant websites, links, and files

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)
[Matriks Kementerian dan Lembaga \(Materi tambahan untuk Peraturan Presiden Nomor 2 Tahun 2015 tentang Rencana Pembangunan Jangka Menengah \(RPJMN\) 2015-2019\)](#)

Obstacles and scientific and technical needs related to the measure taken

The opportunity to improve the mechanism and update information within BKKHI is still widely opened. During the process of the development of the BKKHI website, a lot of discussions were involved among institutions in the biodiversity management node or among members of the working group that has been pioneered by KLHK as the national focal point. This relates to the principle of BKKHI management which is not only carried out by the KLHK together with other Ministries and Institutions which have authority in the field of biodiversity management but also other parties in this field.

One of the main obstacles in implementing the IBSAP and Aichi targets is the lack of wider information and data on conservation and sustainable use of biodiversity. Communities often do not feel or understand the existence of a biodiversity crisis, which allows local policymakers to ignore those problems.

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Another obstacle in the collection and management of biodiversity data and information may include the high diversity of biogeography in Indonesia and various genes, species and ecosystems that have to be managed to meet the IBSAP targets. The sufficient data to analyze status, trends and opportunities of conservation and sustainable use of biodiversity is needed because the data are widely spread and stored across several institutions. Some of the data that is lacking are about biodiversity in marine, terrestrial and inland water; socio-economic data, and mechanisms to collect the information about risky species are lacking especially in eastern Indonesia. Information about the distribution channels and the spread of invasive species, vulnerable areas to future invasion, and their detection and control strategies are still inadequate.

In the future, it is hoped that other collaborative processes will emerge to actively involve more relevant parties, especially Local Governments to enrich and update information and data in BKKHI.

In line with that, the utilization of BKKHI is open to the wider community, as stated in the CBD and IBSAP, as a support for all forms of effort to advance the management of biodiversity at the local, national and international levels. It is indeed a challenge to optimize the function of BKKHI through awareness of its existence and utilization.

Capacity building is one of the possible important efforts, targeted not only the members of the working group but also the Local Government as the BKKHI Managing Node, especially in implementing information exchange protocols. Another important effort is to encourage the Local Government to prepare themselves in establishing a Clearing House Mechanism for managing biodiversity in their regions which will ultimately strengthen the function of BKKHI.

There is a potential increase of additional data and information that must be managed and maintained by BKKHI as well as the access to the BKKHI web portal. This must be accommodated with technological support by adding servers.

Main measure 2: Development of biodiversity utilization

Measures taken to contribute to the implementation of your country's national biodiversity strategy and action plan

Efforts to increase the effectivity of biodiversity management and conservation, which are carried out in various activities, are intended to develop biodiversity utilization and make it sustainable. Below are some steps to improve the biodiversity management and conservation effectivity and allow development of biodiversity utilization:

§ Implementation of **ecosystem restoration** in nature reserves and nature conservation area which is regulated through Minister of Forestry Regulation No. P.48 Year 2014, while the guideline on how to plant and carry out species enrichment in the context of restoring land ecosystems in nature reserves and natural conservation areas is regulated through the Director General KSDAE Regulation, Perdirjen No. P.12 Year 2015, and monitoring and evaluating the successful implementation of land ecosystems restorations in nature reserves and natural conservation areas is regulated through the Perdirjen KSDAE No. P.13 Year 2015. As for increasing efforts to protect the functions of vulnerable and degraded peat ecosystems, efforts to safeguard and restore the function of peat ecosystems are carried out by referring to PermenLHK No. P.16 Year 2017. In degraded conservation areas, ecosystem restoration program will be restoring an area of 100,000 ha in the period 2015-2019, in line with Director General of KSDAE Decree No. 18 Year 2018; and Coordinating Ministry for Economic Affairs Regulation No. 4 Year 2017 concerning Policies, Strategies, Programs, and Performance Indicators for National Mangrove Ecosystem Management.

To preserve and restore mangrove forest ecosystems, Mangrove Restoration and Learning Centers (PRPM) has been built in Pangandaran District, West Java; Sinjai District, South Sulawesi; and Lusi Island, Sidoarjo Regency, East Java. PRPM serves as a location for restoring mangrove ecosystems that are developed as a means of education, research and tourism.

In the field of marine and fisheries development, one of the challenges is the increasing threat of marine ecosystem degradation. The marine environmental degradation comes from the high level of excessive and destructive fishing, mangrove ecosystems degradation, pollution from watersheds area, unplanned coastal development, and climate change threats. With consideration that the use of trawl and seine nets has contributed to declining fish resources and threatens the environmental sustainability of fish resources, Ministry of Marine Affairs and Fisheries published PermenKP No. 2 Year 2015 concerning the Prohibition of Using Hela Trawl and Seine Nets. In addition, to improve the effectiveness of fisheries management, increase the observance of fishing vessels that carry out fishing activities, to improve fisheries management responsibility and sustainability, and to exercise law enforcement, a fishing vessel monitoring system has been established through PermenKP No. 42 Year 2015 and Perpres No. 115 Year 2015 concerning task force on eradication of illegal fishing.

Climate change mitigation actions or reduction of greenhouse gas emissions which are carried out through reducing emissions from deforestation and forest degradation, conservation of forest carbon stocks, sustainable forest management and enhancement of forest carbon stocks performed at national and sub-national levels based on PermenLHK No. P. 70 Year 2017 concerning the procedures for implementing reducing emissions from deforestation and forest degradation, the role of conservation, sustainable management of forest and enhancement of forest carbon stocks.

Utilization of environmental services, especially utilization of water and water energy can be carried out on blocks or zones in wildlife sanctuaries, national parks, grand forest parks or natural tourism parks, with the exception on protection blocks, core zones or jungle zones, in accordance with the Minister of Forestry Regulation No. P.64 Year 2013. Meanwhile, the utilization of

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geothermal environmental services in the National Park area, the Grand Forest Park and the Nature Tourism Park are regulated through PermenLHK No. P.46 Year 2016. In addition, there are also PP 36/2010) and Minister of Forestry Regulation No. P.48 Year 2010 concerning the practice of nature tourism business in Wildlife Sanctuaries (SM), National Parks (TN), Grand Forest Park (Tahura), and Natural Tourism Park (TWA).

The role of local communities, including **adat law communities** (*Masyarakat Hukum Adat, MHA*) with the practice of local wisdom is very important in the management and preservation of natural and environmental resources. Therefore, policies have been established for the implementation of recognition of *adat* (customary) law, local wisdom, and the rights of *adat* law communities related to the protection and management of natural resources and the environment. Recognition and protection of local wisdom in Indonesia are guided by Ministry of Home Affairs Regulation (Permendagri) No. 52 Year 2014, in addition, regarding the management of natural resources and the environment, it refers to PermenLHK No. P.34 Year 2017. Recognition and protection of *adat* law communities in various regions has also been carried out at the Regional Government level, e.g. by the Government of Rejang Lebong Regency, Bengkulu Province (Perda Rejang Lebong Regency No. 5 Year 2018), the Government of Sorong Regency, West Papua Province (Perda Sorong Regency No. 10 Year 2017), the Government of Lebak Regency, Banten Province (Perda Lebak Regency No. 8 Year 2015), as well as the Government of Merangin Regency, Jambi Province (Perda Merangin Regency No. 8 Year 2016). The Regency Government establishes local regulations for *adat* law communities so that the government can provide protection and provide adequate opportunities to strengthen the existence and encourage the participation of *adat* law communities in development, including in the management of natural resources. While for the marine and fisheries sector, the issuance of Act No. 1 Year 2014 concerning Management of Coastal Areas and Small Islands, agreed on 4 (four) important legal norms, one of which was the empowerment of *adat* law communities and traditional fishermen. Empowerment communities including *adat* law communities are strengthened in the initiation of zoning plans preparation for coastal areas and small islands together with the government and business sectors. With this legal norm, the community can take the initiative to propose a zoning plan. This Act also recognizes the right of origin of *adat* law communities to regulate territorial waters which have been managed for generations. The utilization of space and resources of coastal waters and small islands in the area of *adat* law communities by the *adat* law communities themselves is authorized by the local *adat* law community themselves. While traditional fishermen who have traditional fishing areas are recognized by proposing the area as a subzone in the zoning plan so that they have complete legal protection.

Efforts to realize **gender equality and justice** have been included in the development process through gender mainstreaming in all fields of development since the issuance of Presidential Instruction No. 9 Year 2000. Gender mainstreaming (PUG) is a strategy to reduce the gap in access, participation, control, and development benefits between men and women. The acceleration of the implementation of gender mainstreaming in the field of environment and forestry is guided by PermenLHK No. P.31 Year 2017, while gender-responsive planning and budgeting have been carried out since 2011 after the Minister of Forestry Regulation No. P.65 Year 2011 concerning guidelines for gender-responsive planning and budgeting in the forestry sector. In the implementation of gender mainstreaming, gender issues have been integrated into more than 40 environmental and forestry regulations. Government has allocated funding for gender responsive activities and there are also other funding coming from cooperation with national and international institutions. For the marine and fisheries sector, it is guided by several laws and regulations, i.e. PermenKP No. 4 Year 2014 concerning guidelines for gender-responsive planning and budgeting of the Ministry of Marine Affairs and Fisheries, Minister of Marine Affairs and Fisheries Decree No. 67 Year 2016 concerning the roadmap for implementing gender mainstreaming within the Ministry of Marine Affairs and Fisheries. PermenKP No. 28 Year 2016 concerning guidelines for the implementation and monitoring of gender-responsive programs/activities of the Ministry of Marine Affairs and Fisheries, and PermenKP No. 51 Year 2016 concerning

guidelines for mapping the implementation of gender mainstreaming in the marine and fisheries sector in regional scope. As for agriculture, the establishment of the Ministry of Agriculture's gender mainstreaming coordination team is based on Minister of Agriculture Decree No. 01 Year 2013.

Increasing social inclusion for other marginal groups, especially ***adat communities*** is also carried out. Efforts to provide legal access to the community or the recognition and protection of *adat* law communities for the welfare of the community and the preservation of forest resources are carried out through social forestry activities. Social forestry is a system of sustainable forest management carried out in state forest areas or Rights Forests (Hutan Hak)/*adat* forest (Hutan Adat) carried out by local communities or *adat* law communities as the main actors to improve their welfare, environmental balance and socio-cultural dynamics in the form of Village Forests, Community Forests, Community Plantation Forests, People's Forests, *Adat* Forests and Forestry Partnerships. Local communities or local community groups are Indonesian citizens' social units, both women or men who live around forest areas or who live in state forest areas and depend on forests and their activities can affect forest ecosystems. Social Forestry is regulated through PermenLHK No. P.83 Year 2016. Community development for community who resides around nature reserves areas (KSA) and nature conservation areas (KPA) is also carried out by referring to PermenLHK No. P.43 Year 2017. Community empowerment is an effort to develop community independence and welfare by increasing knowledge, attitudes, skills, behaviours, abilities, awareness, and utilizing resources through the formulation of policies, programs, activities and assistance according to the problems and priorities of community needs. Community empowerment can take the form of the development of Conservation Villages, granting access, facilitating partnerships, granting business permits to perform nature tourism services, or building tourism lodges. Access given to the community can take the form of collecting non-timber forest products, traditional cultivation, limited hunting for unprotected species, limited use of marine resources for unprotected species, and limited nature tourism. Facilitation of partnerships might include: providing access to capital, marketing, infrastructure, institutionalization, or technology. Whereas in the spatial management of coastal areas and small islands, the procedure for establishing areas of *adat* law community management is regulated through the Ministry of Marine Affairs and Fisheries Regulation, [PermenKP No. 8 Year 2018](#).

In addition, the activity groups in the action plan for the development of biodiversity utilization to support the National Targets, and more specifically their relevance to Aichi Target, are shown in the table 2. More detailed targets and achievements of each activity are described in Section 3.

Table 2. Correlation between Activity group and National Target and Aichi Target achievement.

No.	Activity Group (KK)	AT, NT
1	Quality and standardization development.	AT-4, NT-4
2	Formulation of policies on standardization, technology and net production in environmental management;	AT-4, NT-4
3	Use of services within conservation areas.	AT-14, NT-14
4	Development of eco-tourism attractions.	AT-14, NT-14

5	Management & conservation of reservoirs, watersheds, lakes, and other water container buildings.	AT-14, NT-14
6	Conservation area management and development of essential ecosystem areas.	AT-14, NT-14
7	Empowerment of coastal and marine areas and small islands.	AT-14, NT-14
8	Improvement of production and productivity of environmentally friendly agricultural products.	AT-14, NT-14
9	Improvement of production and productivity of sustainable plantation crops.	AT-14, NT-14
10	Development of products and businesses in the marine and fisheries industry.	AT-14, NT-14
11	Ecosystem conservation recovery with a total area of 250.000 ha.	AT-15, NT-15
12	Ecosystem recovery outside conservation areas.	AT-15, NT-15
13	Development of regulations related to Nagoya Protocol.	AT-16, NT-16
14	Setting up of organization for Nagoya Protocol implementation.	AT-16, NT-16
15	Empowerment of Remote Indigenous Communities.	AT-18, NT-18
16	Use of local wisdom to support sustainable management and harvesting.	AT-18, NT-18
17	Preservation of history and traditional values.	AT-18, NT-18
18	Development of a pattern of government cooperation with the community, especially the private sector.	AT-19, NT-19
19	Improvement of support to biodiversity industry focusing on conservation values:	AT-19, NT-19
20	Improvement of support to biodiversity benefit trading system	AT-20, NT-20

21	Setting up a cooperative model among stakeholders.	AT-20, NT-20
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AT: Aichi Target, NT: National Target

National Target(s)

National Target 14: Improved functionality of integrated ecosystems to ensure the improvement of essential services (water, health, livelihoods and tourism)

National Target 15: Realization of conservation and restoration of degraded ecosystems in the region

National Target 16: Implementation of the Nagoya Protocol and its derivative instruments through legislation and institutions at the central and local levels

National Target 18: Development of local wisdom and innovations as well as bioprospecting capacity building for the conservation and sustainable utilization of biodiversity

National Target 19: Implementation of science and technology capacity building for sustainable management of biodiversity

National Target 20: Identification of resources and budget effectiveness in the implementation of sustainable management of biodiversity

National Target 4: Establishment of increased availability and implementation of policies supporting sustainable consumption and production (SCP) in the utilization of biodiversity resources

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes

Measure taken has been effective

tools or methodology used for the assessment of effectiveness above

The explanation is the same as the explanation in number 3.1 for Main Measure 1, with some additions as follows:

- Implementation of ecosystem restoration in nature reserves and nature conservation areas, as well as planting and species enrichment in the context of restoring terrestrial ecosystems is regulated in Ministry of Forestry No. 48/Menhut/II/2014. Terrestrial ecosystem restoration inside and outside of nature reserves and nature conservation areas has been done since 2015 through forest and land rehabilitation which has covered 599,783 ha. It has had an impact on increasing the Forests and Land Cover Index from 57.83 in 2016 to 60.31 in 2017 (Ministry of Environment and Forestry, 2018).
- Efforts to reduce marine environmental degradation, which is caused by high levels of overfishing and destructive fishing, are done through increasing the effectiveness of fisheries management, increasing the compliance of fishing vessels that carry out fishing activities, improving responsible and sustainable fisheries management, and implementing law enforcement. The effectiveness of those efforts can be assessed from the impact of those efforts and policies. That effort has a positive impact on increasing the number of fish populations for marine fisheries, so as to increase the potential of fish

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resources to 12.54 million tons in 2017. In addition, the average income of fishermen also increased to Rp. 2.7 million per month in 2017 from Rp. 2.15 million in 2014 and the average income of fisheries companies increased to Rp. 8.48 million per fishery household/fishery company from Rp. 6.04 million in 2014 (KKP, 2018a).

- Until 2017, the Social Forestry Program, which aims to improve the welfare of the community through patterns of empowerment while still retains its basic aspects of sustainability, has increased its area by 666,359 ha. Before PermenLHK No P.83 Year 2016 concerning Social Forestry was issued, in 2015, social forestry permits were covering 105,237 ha while in 2016 those permits were covering an area of 130,145 ha. Until 2017, social forestry was able to have an impact on providing jobs for 293,637 poor family heads living around forest areas. Success stories can also be seen from the management of the Kalibiru Tourism Forest which is managed by the community around the forest as a natural tourist attraction and education. The Kalibiru Tourism Forest has given economic improvement impact for 238 people because this tourism, the forest provides financial income with an average of Rp. 98.2 million per month (KemenLHK, 2018).
- Gender mainstreaming (PUG) in the fields of environment and forestry can be seen at the Planning Bureau Site (<http://birocan.dephut.go.id/pug/>), Ministry of Environment and Forestry. Gender mainstreaming ensures that all policies, programs, and activities in the field of environmental and forestry are fair and equal for women and men. Implementations of PUG in the form of gender-responsive activities, e.g. empowerment of forest communities in Agam District, West Sumatra, enhancing the role of women in the utilization and preservation of natural dye producing flora in East Sumba, East Nusa Tenggara, and building gender responsive models in Berau, Malinau and Kapuas Hulu, Kalimantan.
- Gender-responsive activities in the field of marine and fisheries can be traced through the Ministry of Marine Affairs and Fisheries website, some activities include trainings on freshwater cultivation to discuss good cultivation methods for fish and catfish breeding/hatching techniques (KKP, 2018b). In addition, several programs and activities have also been gender-responsive, including technical guidance on the development of fisheries diversification, development of shrimp processing centres, crackers and dried fish, application of various fish product processing technologies, and women's empowerment in fish farming activities.

Relevant websites, links, and files

[Laporan Kinerja 2017 Kementerian Lingkungan Hidup dan Kehutanan. Kementerian Lingkungan Hidup dan Kehutanan, Jakarta](#)
[Laporan Tahunan 2017 Kementerian Kelautan dan Perikanan. Kementerian Kelautan dan Perikanan, Jakarta](#)
[Pelatihan budidaya air tawar. Kementerian Kelautan dan Perikanan, Jakarta](#)

Other relevant information

- Collaboration on managing Manupeu Tanadaru National Park with the community and gender-based community empowerment has been shown to increase management effectiveness values from 61 in 2016 to 80 in 2018. Manupeu Tanadaru National Park is located on Sumba Island, East Nusa Tenggara Province. This national park is an important conservation area that supports the ecosystem on Sumba Island and an important habitat for hundreds of species of Sumba endemic birds and fauna. Manupeu Tanadaru National Park's management effectiveness can quickly increase due to the collaborative management of conservation areas with the community

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through the Jamatada forum (Daru Land Community Network). Joint activities with the community have made conservation values effectively accepted by the community and those activities made the community to actively participate in maintaining and protecting the national park area. Manupeu Tanadaru NP also applies gender-based community empowerment to improve the family economy. The implementation of research-based management also contributes to improving management effectiveness because potential can be extracted and utilized (Ministry of Environment and Forestry, 2018).

- Gender is a social conception of the roles and responsibilities of women and men that are constructed by the community. The roles and responsibilities constructed by this community are often lame, unequal and unfair. One of the principles of sustainable management of natural richness or natural resources is equality, including gender equality. The role of women is often less important in managing natural resources. Indeed, various facts have shown that women have an important contribution to the management of natural resources so that they can be sustainable (Indriatmoko, 2007).

Other relevant website address or attached documents

[Dari desa ke desa: dinamika gender dan pengelolaan kekayaan alam. Center for International Forestry Research, Bogor.](#)
[Laporan Kinerja Direktorat Jenderal KSDAE 2017. Kementerian Lingkungan Hidup dan Kehutanan, Jakarta.](#)
[Case Study of Sasi Lompa.pdf](#)

Obstacles and scientific and technical needs related to the measure taken

The effectiveness of coordination and increased cooperation with various relevant agencies, both at the central and regional levels, still need to be improved because some of the targets that have been set can only be done by involving all central and regional government agencies, communities, businesses and other stakeholders (DJKSDAE-KLHK, 2018).

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Relevant websites, web links and files

[Laporan Kinerja Direktorat Jenderal KSDAE 2017. Kementerian Lingkungan Hidup dan Kehutanan, Jakarta](#)

Main measure 3: Maintenance and preservation of biodiversity

Measures taken to contribute to the implementation of your country's national biodiversity strategy and action plan

Based on IBSAP for the 2015-2020 period; the four main groups of activities, or 'action plans', have been established (p. 244,

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KemenPPN/BAPPENAS, 2016). Each action plan has several implementation activity groups that support the achievement of the National and Aichi Targets.

The four action plans are compiled as a reference for (1) mainstreaming the management of biodiversity in national and regional development plan documents as well as strategic plans of ministries/government institutions as executors, (2) development of cooperation and (3) assisting efforts to harmonize the efforts of biodiversity management between government institutions with non-governmental organizations and communities in managing biodiversity.

The theme of IBSAP's action plan number 3 is 'Maintenance and preservation of biodiversity'. This action plan is translated into 18 activity groups that support National Targets 5, 6, 7, 8, 9, 10, 11, 12 and 13. Each activity group supports the implementation of a National Target and Aichi Target as shown in the table 3

Table 3. Correlation between Activity group and National Target and Aichi Target achievement.

1	Development of ex-situ conservation area	AT-5, NT -5
2	Management & harvesting of species (marine biological resources) that are protected & sustainably managed	AT-6, NT -6
3	Development of national and regional regulations to support sustainable management and harvesting targets	AT-7, NT -7
4	Pollution control	AT-8,

	from various types of activities	NT -8
5	Invasive alien species (IAS) control through mapping of distribution, implementation of regulations, and eradication	AT-9, NT -9
6	Development of institutionalization of invasive alien species (IAS) manager	AT-9, NT -9
7	Development of environmentally friendly horticultural crop protection systems	AT-9, NT -9
8	Improving the system and quality of quarantine for agriculture, animals, and fish; and monitoring biosafety	AT-9, NT -9
9	More reviews on climate change adaptation and mitigation	AT-10, NT -10
10	Increasing national & regional climate	AT-10, NT -10

	change adaptation & mitigation activities	
11	Expansion of marine protected area into 20 million ha	AT-11, NT -11
12	Recovery of the land conservation area	AT-11, NT -11
13	Sustainable management of protected forest	AT-11, NT -11
14	Integrated management of watersheds	AT-11, NT -11
15	Essential ecosystem technical assistance	AT-11, NT -11
16	Expansion and sustainable management of lands for agriculture, plantations, and animal husbandry	AT-11, NT -11
17	Increased populations of protected, endangered species in biodiverse ecosystems	AT-12, NT -12

18	Improved quantity and quality of biodiversity seedlings and seeds of biodiversity resources	AT-13, NT-13
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AT: Aichi Target, NT: National Target

The above activity groups are set for the implementation period between 2015 and 2020. The implementation of the third action plan is a cross-ministerial collaboration which includes: LIPI, KKP, KLHK, Ministry of Agriculture, Ministry of Home Affairs; and partnerships with various civil society organizations and informal communities that cannot be mentioned one by one.

National Target(s)

National Target 10: Reduced level of anthropogenic pressure on coral reefs and other vulnerable ecosystems affected by climate change
National Target 11: Realization of sustainable maintenance and improvement of conservation areas
National Target 12: Realization of efforts to maintain the populations of endangered species as a national conservation priority
National Target 13: Implementation of system development in nurseries, genetic breeding and domestication of wildlife as well as the breeding of wild animals
National Target 5: Development of ex-situ conservation areas to protect local ecosystems
National Target 6: Implementation of policies for sustainable management and harvesting
National Target 7: Improved sustainably managed land for agricultural, plantation and animal husbandry
National Target 8: Reduction of pollution that damages biological resources and ecosystem functions
National Target 9: Implementation of prevention and eradication programs for invasive alien species (IAS)

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes

Measure taken has been partially effective

tools or methodology used for the assessment of effectiveness above

The explanation is the same as the explanation for Main Measure 1.

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Main measure 4: Capacity building for biodiversity management.

Measures taken to contribute to the implementation of your country's national biodiversity strategy and action plan

Based on IBSAP for the 2015-2020 period; the four main groups of activities, or 'action plans', have been established (KemenPPN/BAPPENAS, 2016, p.244). Each action plan has several implementation activity groups that support the achievement of the National and Aichi Targets.

The four action plans are compiled as a reference for (1) mainstreaming the management of biodiversity in national and regional development plan documents as well as the ministry/government agency strategic plans as executors, (2) cooperation development and (3) tools to harmonize livelihood management efforts between government institutions with non-governmental organizations and communities in managing biodiversity.

The theme of the IBSAP action plan 4 is 'Capacity building for biodiversity management in a participatory and integrated approach'. This action plan is translated into 26 groups of activities that support National Targets 1, 2, 3, 17, 19, 20 and 22. Each activity group supports the implementation of a National Target and Aichi Target as shown in the table 4.

Table 4. Correlation between Activity group and National Target and Aichi Target achievement.

1	Development of germplasm organizational system	AT-2, NT-2
2	Preparation and the organizational establishment of the 2015-2020 IBSAP	AT-17, NT-17
3	Monev and reporting of implementation of IBSAP 2015-2020;	AT-17, NT-17
4	Settlement of biodiversity management conflicts	NT-22
5	Rural utilization, development, socialization, and technological cooperation	AT-19, NT-19
6	Improvement in biological resources research dissemination;	AT-19, NT-19
7	Development of a CHM (Clearing House Mechanism)	AT-19, NT-19
8	Development of environmental economic instruments	AT-3, NT-3

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9	Financial management, distribution and return of revolving funds for forestry development activities	AT-3, NT -3
10	Development of laws, regulations, and organizations to encourage funding resource improvement	AT-20, NT -20
11	Identification of needs, funding sources, and priority location for biodiversity management	AT-20, NT -20
12	Development of funding mobilization mechanism for priority locations	AT-20, NT -20
13	Review of impact of subsidy on biodiversity utilization and conservation programs	AT-20, NT -20
14	Development of National Biodiversity Conservation Fund (NBCF) to support IBSAP 2015-2020	AT-20, NT -20
15	Improvement in investment and expansion of marine and fisheries post-harvest businesses	AT-20, NT -20
16	Development of forestry plan and improvement of forestry areas;	AT-2, NT -2
17	Preparation and determination of updated IBSAP documents	AT-2, NT -2
18	Human resources capacity development through formal and informal education and training	AT-1, NT -1
19	Development of CEPA (Capacity, Education and Public Awareness) strategy	AT-1, NT -1
20	Community participation improvement in biodiversity management;	AT-1, NT -1
21	Awareness improvement through enforcement on environmental criminal law	AT-1, NT -1
22	Information broadcast and dissemination on biodiversity management	AT-1, NT -1
23	Improvement in people's awareness about poverty reduction	AT-1, NT -1

	at the village level and development of biodiversity potential in disadvantaged areas	
24	Improvement in people's awareness through KUMKM business empowerment in the fields of forestry, agriculture, fisheries, and animal husbandry	AT-1, NT -1
25	Improvement of awareness through efforts to control degradation and utilization of coastal, marine and inland water ecosystems	AT-1, NT -1
26	Increased support of the Central Government and Regional Government for economic utilization and improving community welfare	AT-20, NT -20

AT: Aichi Target, NT: National Target

The above activity groups are set for the implementation period between 2015 and 2020. The implementation of the fourth action plan is cross-ministerial cooperation, e.g. Ministry of National Development Planning/Bappenas, LIPI, KKP, KLHK, Ministry of Agriculture, Ministry of Home Affairs, Ministry of Finance, Ministry of Cooperatives and SMEs, Ministry of Social Affairs, Ministry of Communication and Information, Ministry of Villages, Disadvantaged Regions and Transmigration, BPOM (National Agency of Drug and Food Control), Bank of Indonesia; and partnerships with various other civil society organizations and informal communities.

National Target(s)

National Target 12: Realization of efforts to maintain the populations of endangered species as a national conservation priority
National Target 17: Implementation of the new IBSAP at various levels
National Target 19: Implementation of science and technology capacity building for sustainable management of biodiversity
National Target 1: Awareness and participation of various parties established through formal and informal education programs
National Target 20: Identification of resources and budget effectiveness in the implementation of sustainable management of biodiversity
National Target 2: Implementation of sustainable management of biodiversity resources in the planning and implementation of national and regional development to improve community economies
National Target 3: Realization of incentives and disincentives system in business and the sustainable management of biological resources
National Target 5: Development of ex-situ conservation areas to protect local ecosystems

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes

Measure taken has been partially effective

tools or methodology used for the assessment of effectiveness above

The explanation is the same as the explanation for Main Measure 1.

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Section III. Assessment of progress towards each national target

National Target 1: Awareness and participation of various parties established through formal and informal education programs



2018 - On track to achieve target

Targets

National Target 1: Awareness and participation of various parties established through formal and informal education programs

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

National Target (NT 1) is: Awareness and participation of various parties established through formal and informal education programs. NT 1 supports Aichi Biodiversity Target (ABT) 1 relating to awareness-raising.

According to the IBSAP 2015-2020, the implementation of NT 1 supports IBSAP Action Plan 4 'Increasing the capacity of biodiversity management' through Activity Groups (KK) within the field of awareness-raising on biodiversity:

- § Human resources capacity development through formal and informal education and training (KK-1).
- § Development of CEPA (Capacity, Education and Public Awareness) strategy (KK-2).
- § Community participation improvement in biodiversity management (KK-3).
- § Awareness improvement through enforcement on environmental criminal law (KK-4).
- § Information broadcast and dissemination on biodiversity management (KK-5).
- § Improvement in people's awareness about poverty reduction at the village level and development of biodiversity potential in left-behind areas (KK-6).
- § Improvement in people's awareness through business empowerment such as Micro, Small and Medium Enterprises Cooperatives (KUMKM) in the fields of forestry, agriculture, fisheries and livestock (KK-7).
- § Improvement in people's awareness through degradation control and use of coastal, marine and inland water ecosystems (KK-8).

Broadly, the implementation of the above activity groups is in progress, through several programs supporting indicators established by the IBSAP, and the progress varies for each activity group. However, not all achievement indicators can be compared with the 2019 target (those within the National Medium-Term Development Plan/RPJMN) due to adjustment of activity performance, indicator, and/or target occurring during the period 2015-2018 as elaborated at later part number 4.

1. Proof of implementation of NT 1 relating to terrestrial biodiversity

The implementation of KK-1, 2, 3, 5, 6 and 7 is assessed based on the progress of several national programs or efforts supporting one or a few of the activity groups. These programs are as follows:

- Socialization and human resources development programs:
 - o The number of main participants and businessmen within the efforts of community empowerment has reached 2,538 units of Forest Farmers/KTH Groups (KLHK, 2018a, p.416) as of 2017, thereby achieving ~46% of the minimum number targeted for 2019 (5,500) (KemenPPN/BAPPENAS, 2015, p.II.M.L.029-22).
 - o The number of foresters (TBR) dedicated in supporting site-level forest management, and competent environmental and forestry human resources (HR-LHK) has reached 18,065 people (2,150 TBR, 1,242 HR-LHK, 14,673 extension workers) as of 2017, (KLHK, 2018a: Table 10.2, 10.3, 10.4), thereby achieving ~71% of the targeted cumulative number targeted for 2019 (25,400) (KemenPPN/BAPPENAS, 2015, p.II.M.L.029-22).
 - o The number of environment generations has reached 14,981 people (BP2SDM-KLHK, 2018) as of 2017, thereby exceeding the targeted minimum number for 2019 (10,000) (Bappenas, KemenPPN/BAPPENAS, 2015, p.II.M.L.029-23).
- Adiwiyata School Program in Indonesia:
 - o Adiwiyata School Program is one of KLHK's program in realizing an environment-aware and environment-conscious schools, aimed at building school citizens that are responsible in their efforts on protection and maintenance of environment through good school governance in support of sustainable development (KLHK, 2018a, p.415). The number of such schools is expected to increase, as the Adiwiyata Program is integrated with the national education curriculum established by the Ministry of Education and Culture as the implementor of the program on educational units across Indonesia.
 - o The number of environment-aware schools/campuses has reached 1.779 schools/campuses units as of 2017 (KLHK, 2018a: Table 10.8), thereby achieving ~36% of the minimum number targeted for 2019 (5,000 schools/campuses) (KemenPPN/BAPPENAS, 2015, p.II.M.L.029-22). The term "environment-aware" refers to the implementation of Adiwiyata program at such schools/campuses.
- Forestry Vocational High School (SMKK):
 - o In the efforts to develop mid-level forestry technical workforces who master particular technical competencies that made them readily deployed to the site level in situ, the Government of Indonesia has established the SMKK. There are 5 Public SMKK thorough Indonesia with 2,205 alumni from 2012 to 2017, with 1,350 of them already working, thus representing job absorption rate of 61.22%. 211 graduates (9.57%) are continuing to higher education (KLHK, 2018a, p.414).
 - o For privately-managed forestry vocational high school, there are 26 school located in various provinces, with a total of around

880 alumni per year.

- Community development program for conservation area buffer villages:
 - o Buffer villages are conservation area management partner villages, especially in assisting area protection and surveillance activities. Buffer village development programs are parts of the efforts to develop villages and rural areas around the forest that prioritize community participation in its implementation. The program's activities include productive economic assistance for forest village communities, tenurial conflict resolution, management of forest resources along with biodiversity protection, establishment of Forest Management Units (KPH), formation of conservation cadres/nature lover groups, establishment of productive villages around conservation area, and deployment of supporting staff for Forest Farmer Group (KTH) cooperatives.
 - o In relation to those activities, as of 2017, community development programs in buffer villages have provided the following supports: 45 productive tools of social forestry, settlement of 78 tenurial conflicts covering 329,000 ha, recovery of contaminated land weighing 145 tons, recovery of 105,000 ha of peatland, involvement of 62 Forest Management Units Production (KPHP) cooperating with communities in forest management, formation of 6,446 conservation cadres, establishment of 184 productive businesses around the conservation forest area, and training of 1,668 KTH cooperative assistants (KLHK, 2018b, p.159). As of 2017, the number of villages received socialization has reached 118 villages (DJKSDAE-KLHK, 2018, p.24), thereby exceeding the minimum number targeted in 2019 (77 villages) (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-2).
- According to the progress of biodiversity awareness-raising efforts for visitors of conservation area:
 - o Various forms of biodiversity awareness-raising activities are implemented for visitors of terrestrial conservation areas (National Parks, Nature Recreation Parks, and Hunting Parks). The total amount of visitors of such national areas has reached ~20.4 million people as of 2017 (5.5 million (2015), 7.7 million (2016), 7.2 million (2017)) (DJKSDAE-KLHK, 2016, 2017, 2018).
- According to the progress of implementation of Field School for Integrated Plantation Management (SL-PTT) program:
 - o SL-PTT is a form of school which entire learning and teaching process is performed on the field, i.e. in the farming field of participants of Integrated Plants Management (PTT) for the improvement of national rice production. Several themes of the field school include management and marketing of agricultural products (SL-PHP), food sovereignty (SL-KP), and climate (SL-I). This program is targeted to implement 839 SL-KP activity units; 100 SL-PHP participant groups; and 2,971 SL-I activity units (KemenPPN/BAPPENAS, 2015, p.II.M.L.018-61,36 and 38).

- According to facilities and infrastructure for higher education in higher education institutions across Indonesia:

- o As of 2018, there are 63 nationally accredited study programs on forestry and 166 on agriculture across Indonesia. The number of the decree (SK) of accreditation issued for forestry study programme during the period of 2013-2014 was 9, or about ~4 SKs per year. This number increased during the period of 2015-2018, with the issuance of 63 SKs or roughly ~15 accreditations per year. The same occurred for agricultural fields, where during 2015-2018 as many as 120 SKs, or ~30 accreditations per year were issued; an increase from 9 accreditations per year derived from 36 SKs issued during 2011-2014 (BAN-PT, 2018).

Other programs/activities supporting the implementation of NT 1 for terrestrial biodiversity includes:

- **Biodiversity Warriors Program:** This is a movement initiated by Indonesia Biodiversity Foundation along with the youth to make changes as the safeguarding 'knights' of biodiversity in Indonesia (Biodiversity Warriors, 2019). They are encouraged to promote biodiversity across Indonesia, be it relating to uniqueness, benefit, potential, as well as its preservation. They utilize the internet to spread and exchange information with the public. Internet accessibility that reaches the entire parts of the country will develop the strength of information, thereby allowing the change to occur.

2. Proof of implementation progress of NT 1 relating to coastal and marine biodiversity

2.1. Implementation of KK-1, 2, 3, 5, 6, 8 is assessed based on the progress of several national programs or efforts supporting one or a few of the activity groups. These programs are as follows:

- Formal and informal education efforts:

- o In regard to higher education, there are 21 marine and fisheries educational units (SPKP) with a total of 412 educators, comprising 203 teachers and 209 lecturers, conducting teaching activities with a teaching approach comprised of 70% practical study and 30% theoretical study. The SPKP comprises, among others:

- i. One State College of Fisheries (STP).
 - ii. Nine Marine and Fisheries Polytechnics Colleges (Poltek KP), i.e. Poltek KP Bitung, Poltek KP Sorong, Poltek KP Sidoarjo, Poltek KP Bone, Poltek KP Kupang, Poltek KP Karawang, Poltek KP Jembrana, Poltek KP Pangandaran, Poltek KP Dumai.
 - iii. Nine Fisheries Business High Schools (SUPM), i.e. SUPM Tegal, SUPM Sorong, SUPM Waeheru, SUPM Pontianak,

SUPM Bone, SUPM Pariaman, SUPM Kotaagung, SUPM Ladong, SUPM Kupang.

iv. One Community Academy

These educational units under KKP implement free education and prioritize children of fisheries business players (fishermen/fish farmer) as their students, in order to increase human resources capacity within coastal areas and [isolated islands](#). SPKP accepted as much as 40% of its students from [children of main fisheries players](#) out of the total accepted students for 2014 and 2015, and the number increased to 44 % in 2016 (BRSDMKP-KKP, 2017).

o In regard to informal education, there are five Fisheries Education and Training Centers (BPPP), one Civil Servant Education and Training Center (BDA), 413 Marine and Fisheries' Independent Training Center (P2MKP), and 63 Competency Test Sites (TUK) spread across Indonesia, with trainers comprising of 75 widyaiswaras (senior instructors from retired civil servants) and 72 instructors (BRSDMKP-KKP, 2017). Thus, ~104% of the cumulative number of marine and fisheries training institutions as targeted for 2019 (481) has been achieved (KemenPPN/BAPPENAS, 2015, p.I.M.L.032-16).

o Informal education efforts: In fisheries extension services activities, currently there are 5,783 Fisheries Extension Agents, an increase from 4,660 extension agents in 2015 (BRSDMKP-KKP, 2017), thereby achieving 38% from the minimum number targeted for 2017 (15,350) (KemenPPN/BAPPENAS, 2015, p.II.M.L.032-17).

o As of 2017, as many as 37,000 groups have received an extension services and 6,290 people have received special training (KKP, 2018b), thereby achieving ~62% of the minimum number targeted for 2019 (60,000) (KemenPPN/BAPPENAS, 2015, p. II.M.L.032-17).

· Local Community Group for Surveillance (Pokmaswas): The Indonesian Government established monitoring community groups to encourage the role of community in managing biodiversity. It has been noted that since 2015, the number of Pokwasmas actively assist the monitoring of sea and coastal use has reached 1,488 groups (KKP, 2018b), thereby achieving ~83% of the minimum cumulative number targeted for 2019 (1,780 groups) (BAPPENAS, 2015, p.II.M.L.032-68). During the period of 2016-2018, 136 conservation-concerned community groups in 40 coastal areas and small islands have received facilities and infrastructure in enhancing the efforts of community-based conservation efforts (KKP, 2018b).

2.2 Programs/efforts supporting the implementation of KK-4 are, among others:

· Indonesian Government Programs:

- o Legal awareness activity program has boosted the compliance percentage of fisheries and marine business players to the marine and fisheries regulations from 82.35% in 2015 to 93.5% in 2017 (KKP, 2018a, p.23). As such, the minimum percentage targeted for the period of 2015-2018 has been achieved (KemenPPN/BAPPENAS, 2015, p. II.M.L.032-61). This is achieved through a variety of awareness activities such as, among others, the socialization on the use of marine resources in 34 provinces, technical guidance in the utilization of marine resources, "stop destructive fishing" campaigns; and law enforcement activities such as handling violations.
- o The increase of awareness activities involving the active participation of the community in the monitoring has also boosted the increase of violation handlings and law enforcement. For example, in 2017, there were 163 criminal cases processed into legal proceedings, with 150 (~92%) of them already completed (i.e. complete investigation result). This represents an increase from 2014 at 58 marine and fisheries criminal cases processed, with 36 cases (~62%) completed as of 2017 (KKP, 2018a).

CEPA activity program initiated by the Government of Indonesia and NGOs within the marine and fisheries sector:

- o Gita Laut, which is an awareness-raising, development, and introduction program to instill a sense of belonging on Indonesian sea in a true and integrated manner. Since 2017, Sea and Coastal Clean Up (GBPL) as a part of Gita Laut to overcome sea pollution has been commenced, complete with its related activities, in 10 coastal areas: Labuan Bajo, Bali, Batam, Wakatobi, Cirebon in 2017; and in Labuan Bajo, Makassar, Bandung, Muara Baru, Pantai Paloh-Kalbar in 2018.
- o Indonesian Coastal School (SPI), i.e. local content curriculum aimed at increasing awareness on marine environment about climate change and coastal resilience from an early age through the implementation of principles from, by, and for students through the 4A concept (*Amati/observe, Analisa/analyze, Ajarkan/educate, Aksi/act*). From 2013 to 2016, 37 provinces/regencies have adopted SPI as a part of local education curriculum, as seen in table 5.

Table 5. Provinces and Regencies which have adopted the Indonesian Coastal School between 2013 to 2016

Year	Provinces/Regencies
2016	9 locations: Aceh, West Sumatra, West Java, Central Java, D.I. Yogyakarta, East Java, South Kalimantan, North Maluku, DKI Jakarta
2015	15 locations: Aceh, North Sumatra, Bangka Belitung, Banten, DKI Jakarta, West Java, Central Java, D.I. Yogyakarta, East Java, East Kalimantan, North Kalimantan, NTB, NTT, Maluku, North Maluku

2014	11 locations: Aceh, Riau Islands, Lampung, West Kalimantan, Central Sulawesi, Southeast Sulawesi, Maluku, North Maluku, NTB, NTT
2013	3 locations: Tangerang, Demak, Kendal

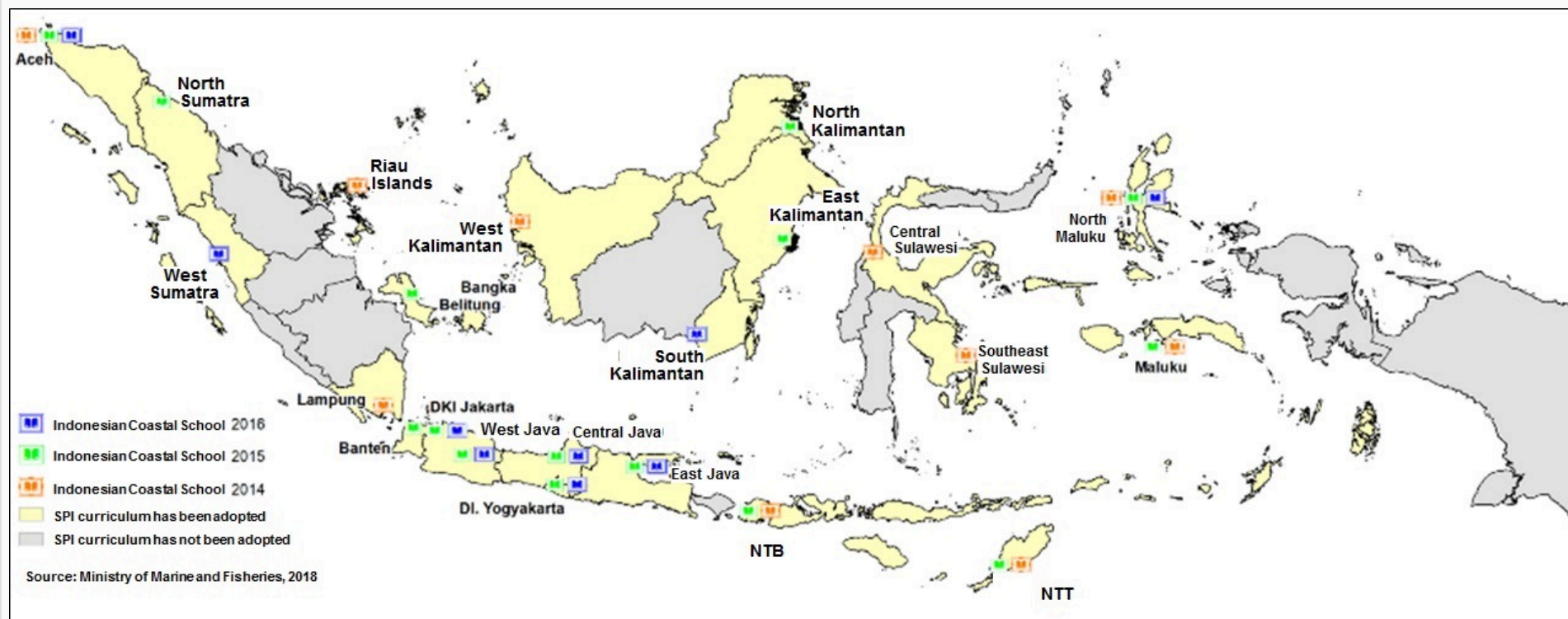


Figure 3. Map of distribution of Indonesian Coastal School (SPI) for the period of 2014-2016.



Figure 4. Students performing coral reef transplantation in the SPI program conducted in Tidung Kecil Island, Kepulauan Seribu, Jakarta (22/11/2018)

- o Awareness-raising of marine biodiversity, through the Jambore Pesisir, is conducted in the effort to raise awareness on early-age students through camps in coastal areas. As of 2018, Jambore Pesisir has been conducted in 40 coastal areas and small

islands initiated since 2013.

- o Networking of marine biodiversity observing communities, through the Pandu Laut Nusantara refers to a community-based organization acting as a cooperative place for various marine enthusiast's communities and the government in the collaborative maintenance of marine preservation. The program, which was formally commenced on 15 July 2018 and conducted simultaneously at 73 sites across provinces within Indonesia on 19 August 2018 through the "Face the Sea" movement (see Figure 5). Further information regarding the community activities within the National Sea Scout network can be seen here: <https://www.pandulaut.org/>.



73 Locations Across Indonesia Simultaneously “Face the Sea”

Laut Bukan Tempat Sampah
Don't Trash Our Oceans

Figure 5. Location of National Sea Scout Program

- o Product quality and security theme, through quality awareness and quarantine movements reaching more than 15,000 business players in the field of marine and fisheries (KKP, 2018b).
- Non-Government Institutions Programs:
 - o The Nature Conservancy (TNC), through its awareness-raising program, SIGAP (Inspiring Actions by Communities for Change), which helps communities in improving their understanding relating to mitigation and adaptation to climate change as well as sustainable management of natural resources. SIGAP is implemented as 'conservation agreements' in 150 coastal villages and 100 terrestrial villages spread across Kalimantan, Sulawesi, and Papua area with a total implementation target of 600 villages by 2020. Apart from that, TNC has also collaborated with the government in the preparation of local contents for primary schools in Raja Ampat, in which it has been adopted as the education curriculum at the regency level.
 - o Reef Check Indonesia, through community-based monitoring of coral reefs using the Reef Check method, and certifications on divers carrying out the Reef Check method (Reef Check EcoDiver Course) (Reef Check Indonesia, 2019). This activity is performed by the Reef Check Working Network Indonesia (JKRI), a network connecting communication among Reef Check implementors, observers, and volunteers in Indonesia. JKRI is spread in 21 provinces, with EcoDiver instructors distributed within all Indonesian large islands except Papua (totalling at 100 instructors in 2006), and more than 1000 volunteers involved throughout the 20 years of Reef Check activities in Indonesia. There are at least 15 newly certified instructors per year. EcoDiver Course Locations can be found in 14 sites across Indonesia, i.e. Aceh, Padang, Jakarta, Malang, Bali, Lombok, Labuan Bajo, West Kalimantan, East Kalimantan, South Sulawesi, Palu, Manado, Banda Naira, dan Ternate.
 - o WWF Indonesia, through:
 - § Coral Triangle Program, in the component of capacity building activities for 10,676 fishermen and fisheries players from various marine and fisheries sectors during 2010-2017.
 - § Preparation and development of local contents and dissemination of knowledge modules about the environment and natural resources to be adopted as a part of local teaching curriculum in the primary, middle, and high school levels in Wakatobi Archipelago.
 - § Since 2014, WWF-Indonesia has cooperated with KKP in facilitating the establishment and capacity building of Ecosystem

Approach to Fisheries Management (EAFM) Learning Center (WWF, 2017). To date, an EAFM Learning Center has been established for Fisheries Management Area (WPP) 714 in collaboration with Universitas Pattimura. The presence of the learning centre is expected to aid in the process of pushing the ratification of Draft of Government Regulation on the existing WPP. Other WPPs prioritized for the establishment of such a learning centre are WPP 715, 718, 713, and 573.

- § The WWF Marine Buddies Campaign, which is promoted using the hashtag #TemanTamanLaut. The campaign has successfully engaged the public through 321,250 online and offline activations.
- § National Symposium on Coastal and Small Islands Conservation held by KKP (Dirjen PRL) alongside WWF. This symposium raises awareness and knowledge on the benefits of marine protected areas, involves 102 speakers, and collects 217 scientific papers (Press release and proceeding).
- § The issuance of simple guidance relating to Better Management Practice (BMP) of Sustainable Fishery and Best Environmental Equitable Practice (BEEP) of Responsible Marine Tourism, and BMP on the handling of beached marine mammals, and reduced impact of the fishery on bycatches, especially sea turtles and sharks. In regard to BMP of bycatches, BMP training has been conducted from 2013 to 2016 in 12 regions (for sea turtle bycatches) and 66 villages across Indonesia (for shark bycatches). The training has engaged around 4,000 – 5,000 people in total and has improved the survival rate of sea turtles to more than 95% and enhanced the capacity of a trained fisherman by 44.6%.

2.3 Programs/efforts for supporting the implementation of KK-7 are as follows:

Awareness-raising program is also performed through development and empowerment of Cooperatives and Micro, Small, and Medium Enterprises (KUMKM), through KUMKM development and aids relating to facilities and infrastructure. In 2016-2017, the number of Main/Business Player Groups trained and improved in scale increased to 7,321 groups from 4,690 groups in 2015; accompaniment has been performed on 30,147 business players; and 500,000 fisherman insurance packets have been delivered (KKP, 2018a).

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 1 is determined based on indicators set out in the IBSAP, as well as indicators from

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other efforts supporting the implementation of activity groups of NT 1. The progress indicator for each activity groups of NT 1 that supports Action Plan 4 of the IBSAP, i.e. 'Capacity building of biodiversity management' are, among others:

1. The number of educational communities with improved roles in disseminating biodiversity awareness and knowledge (Activity group: Improvement of human resources through formal and nonformal education and training). This IBSAP indicator is reviewed based on:

- i. The number of Environmental Generations.
- ii. The number of schools implementing the Adiwiyata School Program.
- iii. The number of participants of Field Schools as part of the Integrated Plantation Management program.
- iv. The number of faculties and majors of forestry and/or agriculture in higher education institutions distributed across Indonesia.
- v. The number of Colleges, Marine and Fisheries Polytechnic, SUPM, and Academy of Communities; the number of teachers, number of BPPP, BDA, P2MKP, and TUK.
- vi. The number of groups receiving fisheries extension.
- vii. The number of people receiving special training on the fishery.

2. The number of thematic and cross-thematic issues which CEPA strategies have been prepared (Activity group: Development of CEPA). This IBSAP indicator is reviewed based on the number of CEPA activity themes in the field of marine and fisheries.

3. The number of strategy preparation facilities and community participation improvement models (Activity group: Improvement of community participation in biodiversity management). This IBSAP indicator is reviewed based on:

- i. The number of main players and business players in the community empowerment based on the KTH.
- ii. The number of monitoring community groups on marine and coastal areas.
- iii. The number of conservation-driving community groups receiving facilities and infrastructure for community-based preservation efforts.

4. The number and capacity of civil servants in handling environmental cases (Activity group: Awareness through enforcement on environmental criminal law). This IBSAP indicator is reviewed based on:
 - i. The number of foresters supporting site-level forest management.
 - ii. The number of human resources on the environment and forestry.
 - iii. The total land area relating to settled tenurial conflicts.
 - iv. The number of marine and fisheries criminal cases on which investigations have been completed.
 5. The number of people and stimulating aids on the development of forest resource (SDH) potential (Activity group: Awareness-raising through the alleviation of rural poverty and forest resource potential development of underdeveloped areas); the number of supporting facilities and institutions receiving the support (Activity group: Awareness-raising through the empowerment of KUMKM in the fields of forestry, agriculture, fishery, and animal husbandry). Both of these IBSAP indicators are reviewed based on:
 - i. The number of aids in the form of productive tools for social forestry.
 - ii. The number of KPHP involved in the development of villages within the conservation area buffer zones.
 - iii. The number of established productive businesses in the villages within the conservation area buffer zones.
 - iv. The number of trained accompanying KTH officers.
 - v. The number of business player groups receiving KUMKM development extension.
 6. The number of facilitated regions (Activity group: Awareness-raising through the degradation control and utilization of coastal, marine, and inland water ecosystem). This IBSAP indicator is reviewed based on the number of areas with existing marine conservation drivers.
- Other indicators from efforts/programs supporting the implementation of the eight activity groups supporting NT 1 are, including:
1. Education programs: The number of formal trainers (teacher and lecturer) as well as informal trainers (widyaaiswara, instructors, and fisheries extension agents).
 2. CEPA development program in the field of marine and fisheries: Location of CEPA activities, number of individuals reached by the CEPA activities. Among the activities considered cooperative activities between the government and civil society organizations in

marine awareness-raising, the indicators are:

- a. The number of villages engaged in conservation agreement for the SIGAP program, as a mitigation and adaptation efforts on climate change and sustainable management of natural resources with The Nature Conservancy (TNC).
- b. The adoption of local contents developed by TNC about the environment and natural resources for primary schools in Raja Ampat that has been adopted as part of the education curriculum at the regency level.
- c. The number of EcoDiver instructors and volunteers in the community-based coral reef monitoring network with JKRI.
- d. The number of fishermen and/or fisheries industry players engaged in capacity building activity program in various sectors of marine and fisheries with WWF Indonesia.
- e. The adoption of local contents developed by WWF Indonesia about the environment and natural resources, as a part of teaching curriculum for the primary, middle, and high schools within Wakatobi Archipelago.
- f. The number of online and offline activation for the hashtag #TemamTamanLaut from the Marine Buddies with WWF Indonesia campaign.
- g. The number of participants, the locations of BMP training with WWF Indonesia on the handling of stranded mammals, and reducing bycatches, especially sea turtles and sharks.

Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

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Relevant websites, links, and files

Direktori Hasil Akreditasi Program Studi (Database online)
Laporan Kinerja Badan Penyuluhan dan Pengembangan Sumber Daya Manusia Tahun 2017
E-Monev (Elektronik Monitoring dan Evaluasi)
OMSPAN (Online Monitoring Sistem Perbendaharaan dan Anggaran Negara)
Statistik Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem Tahun 2015
Statistik Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem Tahun 2016
Statistik Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem Tahun 2017
Matriks Kementerian dan Lembaga (Materi tambahan untuk Peraturan Presiden Nomor 2 Tahun 2015 tentang Rencana Pembangunan Jangka Menengah (RPJMN) 2015-2019)
Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2015-2020
Laporan Tahunan Kementerian Pertanian 2015
Laporan Tahunan Kementerian Pertanian 2016
Laporan Tahunan Kementerian Pertanian 2017
Statistik Pertanian 2017
Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2014
Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2015
Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2016
Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2017
KKP Website
Statistik Lingkungan Hidup dan Kehutanan Tahun 2017
Laporan Kinerja Kementerian Lingkungan Hidup dan Kehutanan 2017

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the implementation progress of National Target 1 is assessed 'based on comprehensive evidence'. Such consideration for the assessment are, among others:

1. The progress of implementation efforts indicator of National Target 1, for those based on the IBSAP 2015-2020 indicator and efforts target of the RPJMN 2015-2019 have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements.
3. Other efforts, be it from government institutions and/or non-governmental ones supporting the implementation of Activity Groups from National Target 1, which is well-documented and strongly correlate with the 'Establishment of awareness and participation of various parties through formal and non-formal educational program' despite having different achievement indicator from the IBSAP.

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions, which are: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the Presidential Regulation No. 29 Year 2014 on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

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Quantitative data are used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 2: Implementation of sustainable management of biodiversity resources in the planning and implementation of national and regional development to improve community economies



2018 - On track to achieve target

Targets

National Target 2: Implementation of sustainable management of biodiversity resources in the planning and implementation of national and regional development to improve community economies

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 2 is: Implementation of sustainable management of biological resources in the planning and implementation of national and regional development to improve community economies. NT 2 supports Aichi Biodiversity Target (ABT) 2 in regard to the integration of biodiversity values in development.

Based on the IBSAP 2015-2020, the implementation of NT 2 supports Action Plan 4 of the IBSAP i.e. 'Capacity building of biodiversity management' through three Activity Groups, which are:

- i. Preparation and determination of the updated IBSAP documents(KK-1).
- ii. Development of a germplasm organizational system (KK-2).
- iii. Development of plans and improvements related to terrestrial and marine biodiversity area (KK-3).

The implementation of KK-1 has reached its target. In this regard, the IBSAP 2015-2020 Document has been prepared in a participatory manner through several processes facilitated by three institutions: LIPI, Ministry of National Development Planning/National Development Planning Agency (KemenPPN/BAPPENAS), and Ministry of Environment and Forestry (KLHK); and established and issued by KemenPPN/BAPPENAS.

The implementation progress of KK-2 is assessed based on germplasm institutional development at the provincial level. In the agriculture sector, as of 2017, Controlling and Certification Centers for Crop and Horticultural Seeds (BPSBTPH) has been established in 32 (out of 34) provinces – as the institution managing certifications and controlling infield circulation of seeds; Protection Centers for Crops and Horticulture (BPTPH) has also been established in 33 (out of 34) provinces.

Among the implementation progresses from efforts directly supporting KK-3 are as follows:

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1. Validation of 205 documents on the management planning of conservation area (137% from target of 150 documents (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-2)), which comprise 50 documents on establishing management zones, and 155 documents on establishing non-national-park conservation area management blocks (DJKSDAE-KLHK, 2018, p.8, 16).
2. Based on the performances of social forestry programs, before the issuance of Minister of Environment and Forestry Regulation No. P.83/2016 on Social Forestry (2007-2014), social forestry permits were issued for a total forest area of 449,104 ha. In the first year of the Working Cabinet (2015), the total area of social forest increased by 105,237 ha. In 2016, the total area of social forest increased by 130,145 ha, and in 2017 the most significant increase of total area occurred, adding an area of 666,359 ha (KLHK, 2018a, p.100). As of June 2018, the total area of social forests amounts to 1.72 million ha (KLHK, 2018, p.19). Adding to that the area of Agrarian Reform Land (TORA) which tenurial conflicts have been resolved at 750,153 ha (KLHK, 2018a, p.V, 157) and a total TORA reservation area of 4,853,549 ha (KLHK, 2018a, p. 281), this renders~58 % (7,323,702 ha) of the total social forest area targeted for 2019 (12.7 million ha) being achieved (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-20).
3. Social forestry is a management program on forest area accessible to communities, which is applied through the Forestry Partnership schemes; where the local communities cooperate with the forest manager, forest utilization business permits, forest services, forest area borrow-and-use permit holders, or holders of business licenses for forest product primary industries (KLHK, 2018b, p.278).
4. Based on the progress on updates of national regulations/laws, Indonesia has revised the Government Regulation (PP) No. 26 Year 2008 with PP No. 13 Year 2017 on the National Plan of Spatial Planning. The update is performed based on the change of national policy and national development dynamics that has affected national spatial planning emphasizing the importance of environmental preservation, which are among others:
 - a. The policy on development, utilization, and management of the protection area for maintenance and manifestation of preserved environmental functions; and prevention of negative impacts of human activities that may result in environmental degradation.
 - b. Strategy for the maintenance and manifestation of preserved environmental functions.
 - c. Strategy prevention of negative impacts of human activities that may result in environmental degradation.
 - d. Development control of cultivation activities so as to not overwhelm environmental carrying capacity.
 - e. Establishment, development, utilization, and maintenance of sustainable crop farming area in order to promote food

autonomy, resilience, and sovereignty.

- f. Development of green open spaces with areas of at least 30% of the urban area.
- g. Limitation and control of cultivation area in locations with high conservational value.
- h. Control on change of allotment of forest area for development area for non-forest sectors taking into account environmental quality, characteristics of natural resources, ecological functions, and land needs for sustainable development.
- i. Drive the development of public forests in supporting the adequacy of forest cover, especially for watersheds or islands having a forest cover of less than 30%.
- j. Development of cultivation activities in consideration of ecoregions, for example, natural landscape situated within one or more watersheds.
- k. Ports (river, lake, ferry port, main port, collection, and feeder) to be developed outside protected forest area.
- l. Classification of national protected areas, which comprises of the area providing protection for its derived area; local protected area; conservation area (land, coast, or small islands, and marine); geology protected area; and other protected areas.
- m. Classification of cultivation areas, which comprises of production forest allotment area; public forests; agricultural land; fishery; mining; geothermal land; industry; tourism; residential area; and/or other allotments.

5. The Indonesian Government has issued Minister of Public Works and People's Housing Regulation No. 05/PRT/M/2015. This regulation serves as general guidance on the implementation of sustainable construction in the infrastructure development for public works and residential area, as a reference in the development of physical facilities fulfilling economic, social, and environmental needs.

The implementation of KK-3 is also supported by the preparation of plan and development for the marine area, which are among others:

1. In order to improve on the successful implementation of marine and fisheries development, a strategic plan has been prepared by the Ministry of Marine and Fisheries Year 2015-2019, which is promulgated by the most recent Minister of Marine and Fisheries

Regulation (PermenKP), i.e. PermenKP No. 63 Year 2017 on the Strategic Plan of Ministry of Marine and Fisheries Year 2015-2019.

2. In order to integrate coastal and marine biodiversity values in spatial planning, KKP has:

a. Performed survey on coastal ecosystem, as well as small islands ecosystem within 34 provinces (KKP, 2018b). The survey resulted in an analysis that serves as an obligatory information in the preparation of Zoning Plan of Coastal Areas and Small Islands(RZWP3K), as well as National Strategic Area Zoning Plan (RZ-KSN), Zoning Plan of Specific National Strategic Areas in Outer Small Islands (RZ-KSNT-PPKT)), and Zoning Plan Between Regions (RZ-KAW). The ecosystem information contained within the RZWP3K document is intended as follows:

i. Determine the direction of ecosystem management and determine the appropriate space/activity allocation where the ecosystem is located and the allocation of space/activities around the ecosystem

ii. Ensure the feasibility, conformity, and equitability between the development of coastal areas and small islands to the potency and carrying capacity, ecosystem, utilization and protection function, space and time dimension, technology and social culture dimension, integrated utilization of various resources, functions, environmental aesthetics, and coastal quality area; and

iii. Ensure the allocation of space and public access in the utilization of coastal and small island area having social and economic functions.

b. Assisted the preparation of RZWP3K for regional governments. As of 2018, out of 34 provinces, 15 provinces has had regulations relating to RZWP3K.

c. Established eight RZ-KSN, with three of them already entering harmonization stage in the Ministry of Law and Human Rights (Kemenkumham) to be promulgated, i.e. RZ-KSN for Jabodetabekpunjur (Jakarta, Bogor, Depok, Tangerang, Bekasi, Puncak, and Cianjur), BBK (Batam, Bintan, Karimun), and Gerbangkertosusila (Gresik, Bangkalan, Mojokerto, Surabaya, Sidoarjo, Lamongan).

d. Prepared 35 RZ-KSNT-PPKT, with four PPKTs promulgated as Ministerial Regulations, i.e. Pulau Maratua, P. Sambit, P. Senua, and P. Nipa.

e. Prepared six RZ-KAW, which are Java Sea, Makassar Strait, Natuna Sea of North Natuna, Sulawesi Sea, Tomini Bay, and Bone Bay. Two RZ-KAWs are entering harmonization stage in Minister of Law and Human Rights to be promulgated, i.e. for

the Java Sea and Makassar Strait (KKP, 2018b).

f. Indonesian Government has prepared Governmental Regulation Draft (RPP) for the Marine Special Planning (RTRL), RPP on Marine Planning (RPP-PRL) and RPP on Permits; of which all of them already entering harmonization stage to be promulgated (KKP, 2018b).

3. Marine Protected Area already has a management plan until 2018, as many as 40 Local Marine Protected Area (KKPD) and 10 National Marine Protected Area (KKPN) possess Zoning Management Plan (RPZ) (KKP, 2018b).

4. Several fisheries sectoral policies also ensure the sustainable utilization of fishery resources to prevent overcapacity and overfishing within the Indonesian fishery management area, which are among others:

a. KKP periodically issues information on estimated potential, fishery resources utilization rate, and allocation of permitted catchment with consideration of study from the National Commission on Study of Fishery Resources. The most recent allocation follows the Minister of Marine Affairs and Fisheries Decree No. 50 Year 2017 on the Estimation of Potential, Total Allowable Catch, and Fishery Resources Utilization Rate within the Fishery Management Area of Republic of Indonesia.

b. For vulnerable species, the policies implemented relates to full protection, a trading arrangement through utilization quota, and limited protection. There are 7 species groups with regulated utilization quota: Several coral species within the Anthozoa class), Humphead wrasse (*Cheilinus undulatus*), seahorse (*Hippocampus* spp.), hammerhead shark (*Sphyrna* spp.), Arowana fish (*Scleropages* spp.), Lola (*Rochia nilotica*), and Giant Clam (*Tridacna* spp.).

In the efforts to protect and ensure the existence and availability of sea mammals, we have prepared

National Conservation Action Plan (RANK) for Sea Mammals Year 2018-2022

that is stipulated through the Minister of Marine Affairs and Fisheries Decree

No. 79 Year 2018

5. Between 2012 to 2017, the Directorate General for Marine Spatial Management of KKP collaborated with International Fund for Agricultural Development (IFAD) in implementing the Coastal Community Development Project (CCDP). CCDP project activities are focused on poverty alleviation, the creation of jobs, economic growth, and sustainable development (pro-poor, pro-job, pro-growth and

pro-sustainability) with a specific aim at increasing the income of coastal communities as beneficiaries. This aim is achieved through three main activity components of CCDP, which are, including:

- a. Component 1 - Community Development, Development and Management of Coastal Resources with a focus on community development;
- b. Component 2 - Economic Development Based on Marine and Fishery, with a focus on the corporatization of business development; and
- c. Component 3 - Project Management.

Among the outcomes of CCPD and relevant policies from the IFAD program is the Plan Document for Village-Based Coastal Area for 181 districts in 12 Regencies.

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 2 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 2. The progress indicator for each activity groups of NT 2 that supports Action Plan 4 of the IBSAP, i.e. 'Capacity building of biodiversity management' are, among others:

1. Establishment of the IBSAP document (Preparation and establishment of the most recent IBSAP document).
 2. A number of germplasm institutions at the regional level (Institutional system development for germplasm).
 3. A number of management plans on conservation areas for terrestrial biodiversity (Plan preparation and development of forest area).
 4. Area of social forests and agrarian reform land.
 5. Update of regulations/laws relating to the National Spatial Planning, including an emphasis on the aspect of environmental preservation.
2. Preparation and ratification of a number of development plans and policies for conservation of coastal and marine biodiversity,

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especially those relating to spatial planning or fishery.

3. The partnership between governments and civil society organizations in the strengthening of conservation values on natural resources for the coastal and marine area managed by customary (*adat*) society.

Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

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Relevant websites, links, and files

[Statistik Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem Tahun 2017](#)

[Matriks Kementerian dan Lembaga \(Materi tambahan untuk Peraturan Presiden Nomor 2 Tahun 2015 tentang Rencana Pembangunan Jangka Menengah \(RPJMN\) 2015-2019\)](#)

[Website KKP](#)

[Laporan Kinerja Kementerian Lingkungan Hidup dan Kehutanan 2017](#)

[Statistik Lingkungan Hidup dan Kehutanan Tahun 2017](#)

[The State of Indonesia's Forest](#)

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the implementation progress of National Target 2 is assessed 'based on comprehensive evidence'. Such consideration for the assessment are, including:

1. The progress of implementation efforts indicator of National Target 2, for those based on the IBSAP 2015-2020 indicator and efforts target of the RPJMN 2015-2019 have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements.
3. Other efforts, be it from government institutions and/or non-governmental ones supporting the implementation of Activity Groups from National Target 2, which is well-documented and strongly correlate with the 'Realized awareness and participation of various parties through formal and non-formal educational program' despite having different achievement indicator from the IBSAP.

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions, which are: Ministry of Environment and Forestry (KLHK), Ministry of Marine Affairs and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the Presidential Decree No. 29 Year 2014 on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data are used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific

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reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 3: Realization of incentives and disincentives system in business and the sustainable management of biological resources



2018 - On track to achieve target

Targets

National Target 3: Realization of incentives and disincentives system in business and the sustainable management of biological resources

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 3 is: Realization of incentives and disincentives system in business and the sustainable management of biological resources. NT 3 supports Aichi Biodiversity Target (ABT) 3 in regard to incentive reforms affecting biodiversity.

Based on the IBSAP 2015-2020, the implementation of NT 3 supports Action Plan 4 of the IBSAP, i.e. 'Capacity building of biodiversity management' through two Activity Groups (KK), which are:

- o Development of environmental economics instrument (KK-1).
- o Financial management on distribution and return of revolving funds for the financing of forestry development (KK-2).

The implementation efforts directly supporting KK-1 (Development of environmental economics instrument) is assessed based on various initiatives/schemes such as:

- i. Ministry of Agriculture Regulation No. 1 Year 2015 concerning the Indonesian Sustainable Palm Oil Certification System (ISPO), which regulates that all palm oil plantations are required to attain certification, with threat of sanctions (as a disincentive) in the form of degradation of the plantation level to class IV, to revocation of plantation Business Permit.
- ii. Ministry of Marine Affairs and Fisheries Regulation No. 16 year 2016 concerning Fisherman Card, which serves to prevent misappropriation of subsidized fuel distribution. With this fisherman card, distribution of subsidized fuel would become transparent as the system is developed online and directly connected with the system of the Downstream Oil and Gas Regulatory Agency and Pertamina.
- iii. The implementation of Payments for Ecosystem Services (PES) scheme through entry fees for tourists who will dive in East Seram Regency, Maluku Province, as collaboration between KKP and WWF-Indonesia. Twenty per cent of the revenue is distributed for the conservation program, including mangrove plantation and community patrol. Ten percent is allocated to education and village development program, while 50% of the revenue is allocated to development of traditional customs, documentation, and promotion of the program (WWF, 2016).

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- iv. Development of Green Planning and Budgeting Strategy for Indonesia's Sustainable Development 2015-2020 by the Ministry of Finance (Kemenkeu). The program will be prioritized to support financing related to the environment in collaboration with related stakeholders.
- v. Government Regulation (PP) No. 46 Year 2017 concerning the Environmental Economic Instruments. This PP regulates a suite of economic policies in driving the Central Government, Regional Government, or Any Individual toward the Preservation of Environmental Functions; through, among others: development and economic activity planning; Environment Financing; and Incentives and/or Disincentives.
- vi. Permit issuance acceleration policy for fishing vessels over 30GT that is willing to be relocated to other fishing grounds with consideration on the availability potential and allocation of fishery resources.
- vii. A Thousand Independent, Strong, Beautiful, and Developed Fishermen Villages Program/SEKAYA MARITIM [A]) to replace Fishing Gear (API) prohibited by the government with the total of 9,201 assistance packages (KemenPPN/BAPPENAS, 2015, p. II.M.L.032-21).
- viii. Distribution of business transfer assistance program for former lobster hatchling catcher fishermen has reached 2,246 assistance packages (KKP, 2018b).
- ix. Facilities and infrastructure aid program for 136 Conservation-Concerned Community Groups ('Kompak'), i.e. community groups actively participating in the management of marine and fisheries environment has been distributed with the total of 811 packages (KKP, 2018b).
- x. Fishery port development program, including location of Integrated Marine and Fisheries Center (SKPT) and location of SEKAYA MARITIM has been developed in 13 locations (KKP, 2018b).
- xi. In accommodating social and economic interest within conservation areas, the determination of management zones and/or blocks has been regulated, which enable traditional access and utilization of resources needed by communities around the conservation area. The traditional access and utilization on the conservation are resources are performed through conservation partnership mechanisms as well as buffer community empowerment. As of 2017, the utilization of conservation are potential has performed on a total area of 27,606.56 ha, with 172 productive economic businesses handled by 154 community groups around the area (KLHK, 2018b).

- xii. Development of devices to support the implementation of Climate Village Program through two Activities: (1) Discussion Meeting on the Adaptation Guideline for Urban and Rural Area and (2) Development of Road Map for Implementation of Climate Village into Proklam Beyond 2000.

The implementation progress from efforts directly supporting KK-2 (Financial management on distribution and return of revolving funds for the financing of forestry development) are the amount of funds distributed for national priorities in financing the management of terrestrial and forestry biodiversity by the Ministry of Environment and Forestry in the 2014-2016 period is in the range of Rp3.6-3.9 trillion. (Ministry of Finance, 2018), thereby achieving beyond the minimum amount (2 trillion Rupiah) targeted for 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-46).

The implementation progress of other efforts indirectly supporting KK-1 and/or KK-2 based on indicators different from that of the 2015-2020 IBSAP, which includes:

- i. Corporate Performance Rating Program (PROPER), is one of the Indonesian Government's efforts in encouraging company compliance in environmental management through information instruments. This is conducted through various activities aimed to: (1) encourage companies to comply with legislation through reputation incentives and disincentives, and (2) encourage companies that have the good environmental performance to implement cleaner production. The indicators used are environmental management systems, energy efficiency, water conservation, emission reduction, biodiversity protection, 3R for B3 waste and Non B3 solid waste, and reducing economic inequalities by implementing community empowerment programs (KLHK Press Release, December 2017).
- ii. Economic instrument which are implemented through of Social Forestry Program, i.e. Village Forest (HD), Community Forest (HKm), Community Plantation Forest (HTR), Customary (*Adat*) Forests (HA), and Forestry Partnership. URL: <http://pkps.menlhk.go.id>
- iii. The learning practice for the implementation of positive fisheries subsidy principles which has been implemented in Aceh Besar, Wakatobi and East Flores, led to the issuance of the Aceh Besar Regulation No. 3 Year 2014 concerning the Green Subsidy Policy on Fishery Sector.

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 3 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 3.

Progress indicator for the activity group of “development of environmental economic instruments” are the achievements of the implementation of various programs, activities, schemes, initiatives, and/or regulations related to incentives for sustainable management of biological resources.

Progress indicator for the activity group of “financial management on distribution and return of revolving funds for the financing of forestry development” is the amount of distributed funds.

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Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id/> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>

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Relevant websites, links, and files

[Statistik Direktorat Jenderal Perubahan Iklim Kementerian Lingkungan Hidup dan Kehutanan \[DJPP-ILHK\] 2017](#)

[Laporan Kinerja Direktorat Jenderal Perikanan Tangkap \[DJPT\] 2017](#)

[Matriks Kementerian dan Lembaga \[Materi tambahan untuk Peraturan Presiden Nomor 2 Tahun 2015 tentang Rencana Pembangunan Jangka Menengah \(RPJMN\) 2015-2019 untuk KLHK, KKP, Kementerian Pertanian\]](#)

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

[Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2014](#)

[Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2015](#)

[Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2016](#)

Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2017

The Green Planning and Budgeting Strategy

SKPT: Membangun Indonesia dari pinggiran

KKP Website

Laporan Kinerja Kementerian Lingkungan Hidup dan Kehutanan 2017

Statistik Lingkungan Hidup dan Kehutanan Tahun 2017

Map of Conservation Areas in Indonesia

Mengungkap kekayaan Kawasan Konservasi Perairan Pulau Koon dan Pulau Neiden: Sebuah temuan awal ekologi, wisata dan sosial

Buku pedoman Penandaan Anggaran Hijau (Green Budget Tagging) di daerah

E-Monev (Elektronik Monitoring dan Evaluasi)

OMSPAN (Online Monitoring Sistem Perbendaharaan dan Anggaran Negara)

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the implementation progress of NT 3 is assessed 'based on comprehensive evidence'. Such consideration for the assessment are, including:

1. Implementation efforts indicator of National Target 3, for those based on the IBSAP 2015-2020 indicator and efforts target of the RPJMN 2015-2019 have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements.

EN

Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions, which are: Ministry of Environment and Forestry (KLHK), Ministry of Marine Affairs and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the Presidential Decree No. 29 Year 2014 on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data are used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 4: Establishment of increased availability and implementation of policies supporting sustainable consumption and production (SCP) in the utilization of biodiversity resources



2018 - On track to achieve target

Targets

National Target 4: Establishment of increased availability and implementation of policies supporting sustainable consumption and production (SCP) in the utilization of biodiversity resources

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 4 is: Establishment of increased availability and implementation of policies supporting sustainable consumption and production (SCP) in the utilization of biodiversity resources. NT 4 supports Aichi Biodiversity Target (ABT) 4 of sustainable production and consumption.

Based on the IBSAP 2015-2020, the implementation of NT 4 supports Action Plan 2 of the IBSAP, i.e. 'Development of Biodiversity Utilization'. Implementation of NT 4 has commenced and achieved the target. Overall, the implementation progress for NT 4 is reviewed based on:

- i. Quality development and standardization.
- ii. Preparation of standardization, technology and clean production policies in environmental management.

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The implementation progress from efforts directly supporting 'Quality development and standardization' based on indicator of biological resource-based commodities having sustainability standard/criteria, i.e.:

- a. There have been 8 paper, plastic, and/or textile products having Indonesian National Standard based ecolabels (Ecolabel Type I) (PSLK-KLHK, 2018a); as well as 20 paper, polyethylene, polypropylene, and/or textile products having self-declared ecolabels (Ecolabel Type II) (PSLK-KLHK, 2018a).
- b. The area of forest managed through the Sustainable Production Forest Management (PHPL) program reaches 68,831,008 ha. This area covers the location of forest areas in 34 provinces, with additional five provinces in 2015-2016 (Aceh, Riau, South Sumatra, Riau Islands, East Nusa Tenggara) from the HPL area in 28 Provinces established between 1999 and 2014. Sustainable Production Forest Management (PHPL) is a forest certification scheme to ensure that the Forest Management Unit has managed forest production functions sustainably and produces legal timber or non-timber forest products (KLHK, 2018b, p.161).

The implementation progress of other efforts supporting 'Quality development and standardization' based on different indicators from those of IBSAP 2015-2020 are availability of 20 practical methods for seed quality testing and application of quality system for seed-testing laboratories (Ministry of Agriculture, 2015, 2016, 2017), thereby achieving 40% of the cumulative target for 2019 (50 methods) (KemenPPN/BAPPENAS, 2015, p.II.M.L.018-19).

The implementation progress from efforts supporting 'Preparation of standardization, technology and clean production policies in environmental management' based on the IBSAP 2015-2020 indicators are, including:

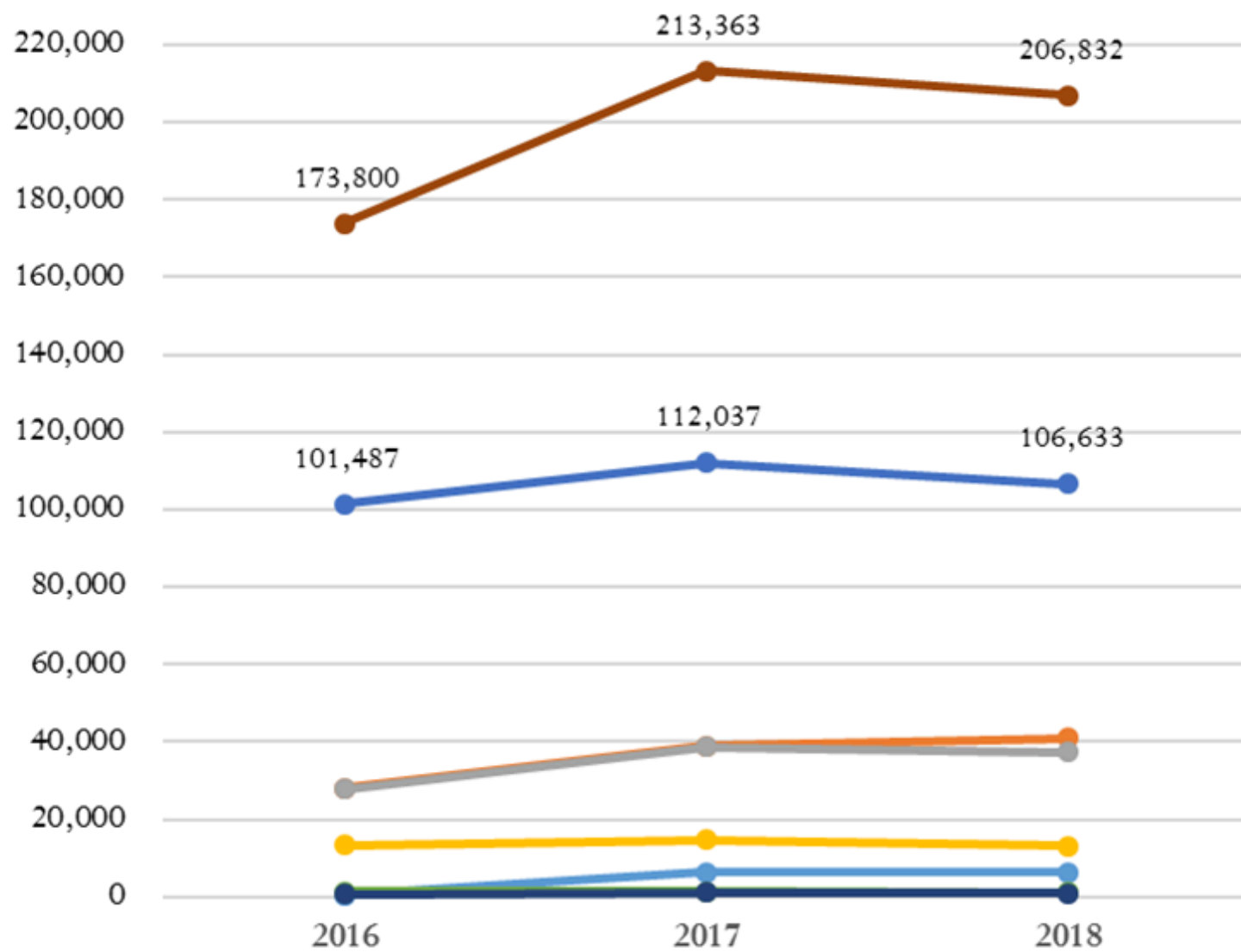
1. Based on the number of biodiversities identified:

- a. The number of fauna species identified was 1,605 birds; 723 reptiles; 385 amphibians; 720 mammals; 1,248 freshwater fish; 197,964 invertebrates; 5,137 arthropods (spiders); 151,847 insects. The number of flora species identified was 91,251 spore-bearing plants, 120 vascular plants producing non-enclosed seeds (gymnosperms) and 19,112 of flowering vascular plants (Angiospermia, from an estimated 30-40 thousand existing species). This number increases compared to the number of species identified before 2015 and is estimated to be far from the total number of flora and fauna found within the area of Indonesia (KLHK, 2018).
- b. The number of currently recorded marine fauna in Indonesia is around 5,319 species which 3,476 species of them are fish, which was followed by Echinodermata with 557 species, Polychaeta, coral, and Crustaceans. The amount of marine algae and flora found in Indonesian waters consists of 13 species of seagrass, 971 types of algae, 55 species of mangroves, 75 types of

mangrove associates. (Kekinian Keanekaragaman Hayati Indonesia, 2014)

- c. Utilization of non-protected wild plants and animals as well as those listed in CITES Appendix II, the collection activity from the wild is regulated by **Governmental Regulations (PP) No. 8 Year 1999** on the utilization of wild plants and animals species, and the Minister of Forestry Decree (Kepmenhut) No. 447/Kpts-II/2003 on the Administration of Harvesting and Circulation of Wild Plants and Animals. The volume of the collection is regulated through annual quotas set by the Director General of KSDAE
 - d. In addition, **Governmental Regulations No. 7 Year 1999** on the preservation of plant and animal species also regulates the use of protected species of wild plants and animals. This regulation is supported by the Minister of Environment and Forestry Regulation (PermenLHK) No. P.20/MenLHK/Setjen/Kum.1/6/2018 in conjunction with PermenLHK P.92/MenLHK/Setjen/Kum.1/8/2018 in conjunction with Permen LHK P.106/MenLHK/Setjen/Kum.1/12/2018 on protected plants and animals species.
 - e. Implementation of chain of custody mechanism, through the Timber Legality Verification System (SVLK), and the Forest Product Administration Information System (SIPUHH). SVLK has been recognized as an effective instrument by a number of consumer countries such as European Union countries and Australia, thereby enabling the Indonesian Government to issue a Forest Law Enforcement, Governance and Trade license unilaterally (KLHK, 2018, p. 126). The licensing document is known as V-Legal, and information relating to the issuance of V-Legal can be seen in the following website: <https://silk.dephut.go.id/index.php>
 - f. The number of invasive plant species (IAS) which has been identified in Indonesia is 357 species (Setyawati et al. 2015).
 - g. As summarized from *Market Fishes of Indonesia* (White et al. 2013), The number of fish species traded in and from the area of Indonesia have been identified at 873 species (from 124 families) of bony fish, as summarized from *Market Fishes of Indonesia* (White et al. 2013).
2. Based on the amount of production and/or consumption of commodities fulfilling the sustainability standard/criteria:
- a. The declining consumption level of ozone-depleting substances (ODS) type HCFC from a 2013 value of 403.9 Ozone Depleting Potential (ODP) ton to a 2017 value of 239.5 ODP ton, which shows a 40.7% decline of ODP value (DJPPi-KLHK, 2018). As such, the targeted decline percentage of 30% (reduction to 282.71 ODP ton) has been exceeded (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-25).
 - b. Based on information on the Timber Legality Verification System (SILK) online database, export activities of forestry industry

products equipped with V-Legal documents have generally increased from 2016 to 2018, as shown in Figure 6:



Asia EU North America
Oceania Africa South America
Europe Total

Figure 6. The number of V-Legal documents issued in the 2016-2018 period from each of seven regional export destinations and in total.

- c. Regarding the application of forest commodities having sustainability standard/criteria:
 - In support of the implementation of rehabilitation, the Directorate General of PDASHL undertakes efforts to breed, procure, manage and circulate plant seeds through the development and management of the Community Seed Nurseries (KBR), Provision of Permanent Seed Nurseries and Provision of Quality Seeds with detailed developments as presented in Figure 7.

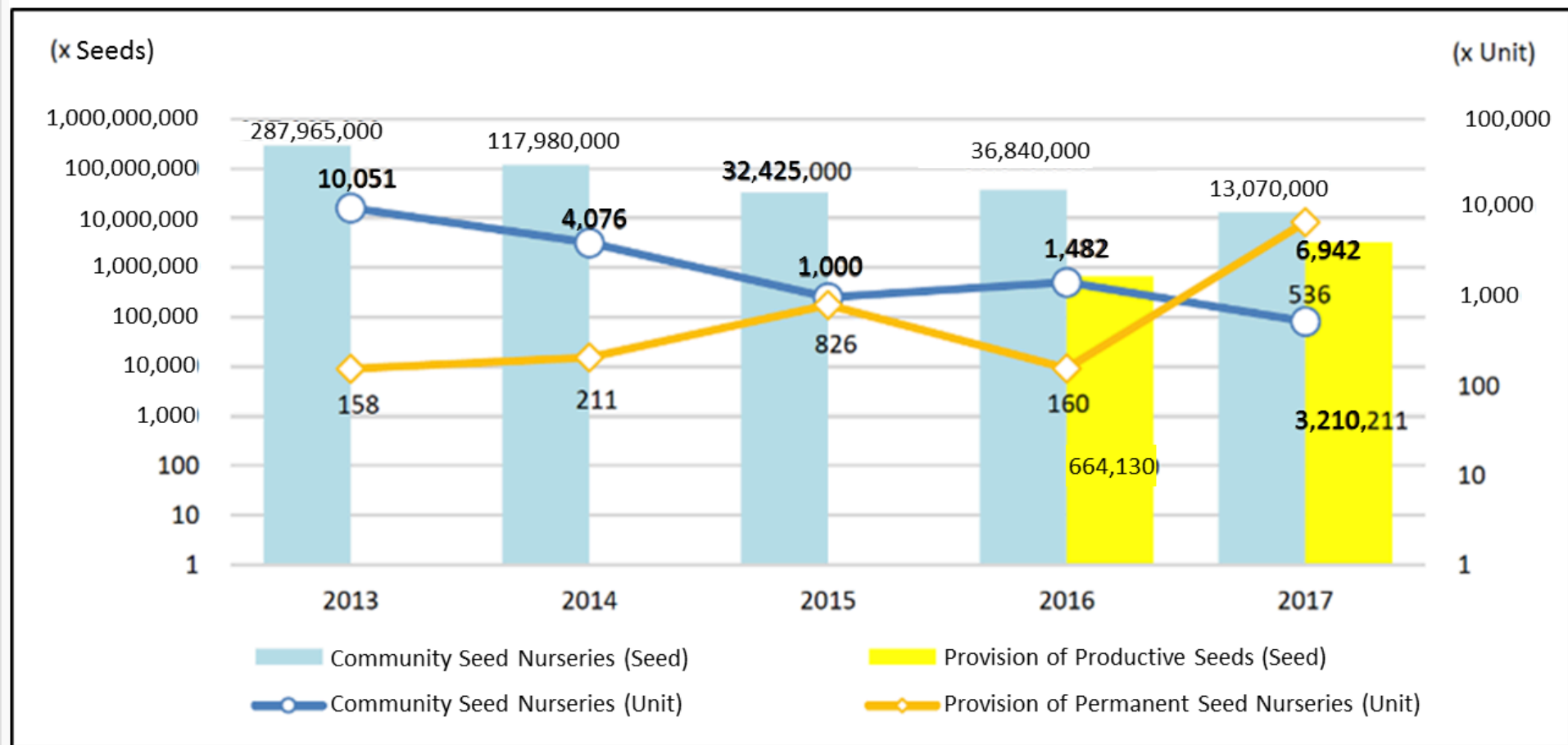


Figure 7. Development of Quality Seed Activities in the 2013-2017 Period

§ During the period of 2015 to 2017, the number of seeds produced for seeding of forest plants as well as rehabilitation of forests reached 110.4 million seeds (Permanent Nursery Seeds, 2015-2017: 24.3 million seeds (KLHK, 2018a, p. 153), Productive Seeds, 2016-2017 : 3.8 million seeds (KLHK, 2018a, p. 150), Community Seeds 2015-2017: 82.3 million seeds (KLHK, 2018a, p. 150)), thereby achieving ~58.8% of 187.5 million seeds targeted for 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-13).

- During the period of 2015 to 2017, the total production of logs from Natural Forests and Industrial Plantation Forests has reached a total of 119.68 million m³ (KLHK, 17a; Table 4.6, 4.7), or ~63.3% of the targeted amount (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-16).

d. Regarding the application of sustainable standards/criteria for terrestrial commodities:

- Forestry permits can also contribute to climate change mitigation, one way of which is through a Reduced Impact Logging (RIL) policy to reduce the volume of carbon emissions from logging activities. The Guidance for RIL in Indonesia has now been available. One of the learning from the implementation of RIL is obtained from the REDD+ Implementation in East Kalimantan.

- During the tenure of Working Cabinet in 2015 - 2019, a new policy on Social Forestry and Environmental Partnership was introduced. The Social Forestry and Environmental Partnership program accommodates several old policies combined into 5 Social Forestry Schemes (through Minister of Environment and Forestry Regulation No. P.83/Menlhk/Setjen/KUM.1/10/2016 on Social Forestry), two of which are Community Forest (HKm) and Forestry Partnership (KK). HKm represents state forests which main utilization is aimed at empowerment of local communities. Meanwhile, KK is a cooperation scheme between local communities and forest managers holders of Forest Utilization Business Permits, forest services, borrow-and-use licenses for forest areas or holders of business permits for primary forest products. The forestry products resulted from this forest scheme contribute to improving economic equality and reducing economic inequality through three pillars; i.e.: land, business opportunity, and human resources. As of 2017, the total area of HKm was 276,420.67 ha and the same for KK was 93,891.53 ha (KLHK, 2018a, p. 283)

- The Social Forestry Program is also supported by the use of traditional zones in conservation areas in Indonesia. Traditional zones or blocks, as written in the Minister of Environment and Forestry Regulation No. P.76 Year 2015, is interpreted as, "natural conservation areas which are defined as areas for traditional use by the community, which have been dependent on natural resources for generations.

e. Regarding fishery commodities:

- A total of 20 fish species are managed through the establishment of limited protection status and trade arrangements through its utilization quotas: corals (*Anthozoa*), humphead wrasse (*Cheilinus undulatus*), sea horse (*Hippocampus* spp.), hammerhead sharks (*Sphyrna* spp.), arowana fish (*Schlerophages* spp.), top shell (*Trochus niloticus*), and giant clam (*Tridacna* spp.).

A number of regulations relating to fish species issued by the KKP are, including:

- i. Minister of Marine Affairs and Fisheries Regulation (PermenKP) No. 18 Year 2009 on Prohibition of Export of Eel Seed.
 - ii. Minister of Marine Affairs and Fisheries Decree (KepmenKP) No. 43 Year 2016 on Establishment of Protection Status for Hilsa shad (*Tenuulosa ilisha*).
 - iii. KepmenKP No. 18 Year 2013 on Establishment of Full Protection Status for Whale Shark.
 - iv. KepmenKP No. 37 Year 2013 on Establishment of Protection Status for Humphead wrasse.
 - v. PermenKP No. 59 Year 2014 on Prohibition of Export of Hammerhead Shark and Oceanic Whitetip Shark.
 - vi. KepmenKP No. 4 Year 2014 on Establishment of Full Protection Status for Manta Ray.
 - vii. KepmenKP No. 49 Year 2018 on Establishment of Limited Protection Status for Banggai Cardinal Fish.
- f. The management of the main fishery commodities is regulated according to a specific Fisheries Management Plan (RPP) such as for tuna, skipjack tuna, and mackerel tuna which was published in 2015 and for swimming crabs in 2016; and RPP is currently being drafted specifically for reef fish resources.
- g. In maintaining lobster, swimming crab, and crab population, PermenKP No. 1 Year 2015 concerning the Prohibition of Lobster, Crab, dan Swimming Crab Catching during the laying-eggs condition and regulate the size allowed to be caught.
- h. Indonesia has also implemented fishery standards for the entire supply chain, through the Indonesian National Standard (SNI). As of 2017, there are at least 111 SNI for aquaculture, 69 SNI for fishery testing methods, and 265 SNI for fishery products (BKIPM-KKP, 2018).

- i. A number of industries/associations are also supported to be involved in market-based incentive schemes through fisheries improvement programs towards product certification.

The certification upgrading project is carried out for 34 fishery commodities such as tuna, swimming crab, red snapper, grouper, and giant tiger prawn. As many as 52 tuna processing companies and fisheries companies are approved by taking into account the sustainability of dolphin (dolphin safe) in addition to 15 approved importers, distributors, brokers, retailers, and agents. Several companies have started fisheries improvement projects to improve their supply chains to comply with the Marine Stewardship Council certification. At least one giant tiger prawn company has obtained an Aquaculture Stewardship Council certificate.

3. The number/area of origin of biological resources protected by the application of sustainable standard/criteria

- a. Based on the progress of the sustainable production forest management program, the total area of timber ecosystem restoration that has been included in all issued Business Permits for Timber Forest Products - Ecosystem Restoration (IUPHHK-RE) has reached 662,861 ha (KLHK, 2018a p. 180), thereby the targeted cumulative minimum area for 2019, which are 500.000 ha, has been exceeded (Hal. II.M.L.029-18, KemenPPN/BAPPENAS, 2015).
- b. Act No. 45 of 2009 mandates sustainable fisheries management. The number of Fisheries Management Area (WPP) managed in accordance with the Fishery Management Plan (RPP) is 11 WPP consistent with PermenKP No. 18 Year 2014 (Figure 8; KKP, 2018c), or 100% from targeted regions in 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.032-19). The RPP action plan refers to three main groups of objectives: (a) Realizing sustainable management of fish resources and their habitat Ecosystem Approach to Fisheries Management (EAFM); (b) increasing economic benefits from sustainable fisheries to guarantee employment opportunities and poverty alleviation, and (c) active participation and stakeholder compliance in order to eradicate IUU Fishing activities. In relation to the implementation of EAFM, it is determined in every RPP WPP that a safe ecological limit to update the estimation of potential and amount of allowable catches, and the level of utilization of fish resources, in line with KepmenKP No. 50 Year 2017 concerning Estimation of Potential, Total Allowable Catches, and The Rate of Utilization of Fish Resources in the Fisheries Management Areas of the Republic of Indonesia.



Figure 8. Map of 11 fisheries management area of the Republic of Indonesia

- c. The Indonesian government has implemented the recording of fishing log-books and catch data as one of the catch information for fishing management through the Minister of Marine and Fisheries Regulation No. 48/2014. The number of vessels involved in implementing the fishing log-book in 2017 reached 4,463 ships in 35 fishing ports.
- d. Since 2015, Indonesia requires that every fishing vessel measuring more than 30 GT operating in the Fisheries Management Area of the Republic of Indonesia (WPPNRI) and on the high seas is required to install VMS transmitters through Minister of Maritime Affairs and Fisheries Regulation No. 42/PERMEN-KP/2015 concerning Monitoring Systems of Fishing Vessel.

The implementation from the efforts indirectly supporting the activity group 'Preparation of standardization, technology and clean production policies in environmental management' based on different indicators from those of IBSAP 2015-2020 are, including:

- a. Issuance of eight regulatory documents related to efforts to eradicate illegal, unreported, and unregulated (IUU) fishing :
 - Minister of Marine Affairs and Fisheries Regulation No. 56/2014 on a moratorium on permits for ex-foreign vessels.
 - § Minister of Marine Affairs and Fisheries Decree No. 76/KEPMEN-KP/2014 on a task force to perform analysis and evaluation (anev) on 1,605 ex-foreign vessels.
 - § Minister of Marine Affairs and Fisheries Regulation No. 57/2014 on the restriction of mid-sea transshipment.
 - § Presidential Regulation No. 115/2015 on the task force for the eradication of illegal fishing.
 - § Presidential Regulation No. 44/2016 on the negative list of foreign investment with fishing businesses declared to be closed to foreigners.
 - § Minister of Marine Affairs and Fisheries Regulation No. 2/2015 on the prohibition on the use of trawls and seine nets in the fisheries management area of the Republic of Indonesia.
 - § Minister of Marine Affairs and Fisheries Regulation No. 15/PERMEN-KP/2016 on Live Fish Transport Vessel as amended by Minister of Marine Affairs and Fisheries Regulation No. 32/PERMEN-KP/2016.
 - § Director General of Aquaculture Decree No. 54/KEP-DJPB/2016, on which 181 (one hundred eighty-one) Transit & Loading Ports has been assigned for live fish transports ships with overseas destinations.

- b. In ensuring the quality assurance on marine and fisheries products, and mitigate the negative impacts of aquacultures, the following guidelines have been published:
- § Proper Fish Handling (CPIB);
 - § Proper Fish Breeding (CBIB), which includes Proper Ways to Hatch Fish, Proper Ways to Grow Fish, Proper Ways to Produce Fish Feed, and Proper Ways to Produce Fish Medicine;
 - § Proper Fish Quarantine;
 - § Standardization of the entire fisheries supply chain, through Indonesian National Standards on capture fisheries, aquaculture, as well as fisheries and marine products;
 - § Implementation of certification and traceability in the Fish Processing Unit.
- c. Fisheries regulations issued to ensure quality assurance are:
- § Minister of Marine Affairs and Fisheries Decree No. KEP.01/MEN/2007 on Requirements for Quality and Safety Assurance of Fisheries Products in the Process of Production, Processing, and Distribution.
 - § Minister of Marine Affairs and Fisheries Regulation No. PER.19/MEN/2010 on Control of Systems for Quality Assurance and Fisheries Products Security.
 - § Head of BKIPM Regulation No. PER.03/BKIPM/2011 on Technical Guidance on the Application of Systems for Quality Assurance and Fisheries Products Security.
 - § Minister of Marine Affairs and Fisheries Regulation No. 35/Permen-Kp/2016 on Proper Fish Stocking.
- d. Based on the support from Indonesian NGO for the efforts to develop sustainable fisheries production and consumption, there are several programs which includes:
- i. Seafood Savers was intended as a business-to-business platform to facilitate fisheries producers; retails; restaurants; hotels; and financial institution groups towards sustainable fisheries business and practices.
 - ii. Signing Blue, an innovation and forum for tourists and tourism service providers to play a role in the protection of marine resources; and encourage the government, business sector, and local communities to manage and utilize marine assets to

realize a responsible tourism system.

iii. JARING-Nusantara carries out three major programs, i.e. commitment to a sustainable and responsible fisheries business; support the eradication of Illegal, Unreported, and Unregulated (IUU) Fishing; and implement FIP and/or AIP schemes in fisheries improvement practices in Indonesia. In addition, there are two additional leading programs which facilitates sustainable fisheries business transactions between groups of fishermen/fish farmers assisted with companies, with better selling prices of fishery products.

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 4 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of NT4 activity groups of NT 4. Progress indicator for every NT4 Activity Group supporting IBSAP Action Plan 2 'Development of Biodiversity Utilization', which are:

1. Number of traded commodity based on biological resources which has sustainability standards/criterias
2. Number of biodiversity identified;
3. Percentage of total production and consumption that meets the sustainability standards/criteria;
4. Number/area of origin of biological resurces protected with the implementation of sustainability standards/criteria.

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Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

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All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of

Finance in OMSpan program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

Relevant websites, links, and files

[Index Standar Nasional Indonesia Badan Karantina, Pengendalian Mutu, dan Keamanan Hasil Perikanan](#)
[Pengelompokan Jenis Kayu Perdagangan Indonesia](#)
[Statistik Direktorat Jenderal Perubahan Iklim Kementerian Lingkungan Hidup dan Kehutanan \[DJPPi-KLHK\] 2017](#)
[Kekinian Keanekaragaman Hayati Indonesia 2014](#)
[Matriks Kementerian dan Lembaga \[Materi tambahan untuk Peraturan Presiden Nomor 2 Tahun 2015 tentang Rencana Pembangunan Jangka Menengah \(RPJMN\) 2015-2019 untuk KLHK, KKP, Kementerian Pertanian\]](#)
[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)
[Laporan Tahunan Kementerian Pertanian 2015](#)
[Laporan Tahunan Kementerian Pertanian 2016](#)
[Laporan Tahunan Kementerian Pertanian 2017](#)
[Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2014](#)
[Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2015](#)
[Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2016](#)
[Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2017](#)
[Laporan Kinerja Badan Riset dan Sumber Daya Manusia Kelautan dan Perikanan](#)
[KKP Website](#)
[Peraturan Menteri Kelautan Dan Perikanan Republik Indonesia Nomor 18/Permen-Kp/2014 Tentang Wilayah Pengelolaan Perikanan Negara Republik Indonesia](#)
[Statistik Lingkungan Hidup dan Kehutanan 2017](#)
[Laporan Kinerja Kementerian Lingkungan Hidup dan Kehutanan 2017](#)
[The State of Indonesia's Forest 2018](#)
[Daftar Produk dengan Ekolabel yang Berbasis SNI](#)
[Daftar Produk dengan Ekolabel Swadepklarasi](#)
[Daftar Registrasi Teknologi Ramah Lingkungan](#)
[A Guide Book of Invasive Plant Species in Indonesia](#)
[Market fishes of Indonesia](#)

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the implementation progress of National Target 4 is assessed 'based on comprehensive evidence'. Such consideration for the assessment is:

The progress of implementation efforts indicator of National Target 4, for those based on the IBSAP 2015-2020 indicator and efforts target of the RPJMN 2015-2019 have been reported in LKJ. LKJ is a comprehensive report containing complete and detailed activities and achievements.

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Mentan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the Presidential Regulation No. 29 Year 2014 on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical

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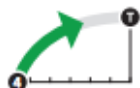
report of ministries or government institutions.

Both quantitative and qualitative data are used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 5: Development of ex-situ conservation areas to protect local ecosystems



2018 - On track to achieve target

Targets

National Target 5: Development of ex-situ conservation areas to protect local ecosystems

EN

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 5 is: Development of ex-situ conservation areas to protect local ecosystems. NT 5 supports Aichi Biodiversity Target (ABT) 5.

Based on the IBSAP 2015-2020, the implementation of NT 5 supports Action Plan 3 of the IBSAP, i.e. "Maintenance and preservation of biodiversity".

The implementation of NT 5 broadly has commenced and is expected to achieve the relevant target. Generally, the implementation progress of the activity groups is reviewed based on the efforts on 'Development of important ecosystems outside conservation areas'.

The implementation progress from efforts supporting the 'Development of important ecosystems outside conservation areas' based on the indicators of IBSAP 2015-2020 are, among others:

1. As of 2017, the number of developed terrestrial ex-situ areas comprise of the following:
 - a. Botanical Gardens as much as 37 units, managed by LIPI (5 units), Local Government (30 units), and Universities (2 units).
 - b. Essential Ecosystem Area (KEE) of 35 units, representing 103% of target stipulated in the IBSAP 2015-2020 with a total area of 710,554.781 ha, provides as a habitat for wild plants and animals outside conservation areas (DJKSDAE-KLHK, 2018). Essential ecosystem is mandated by Act No. 23 Year 2014 on Regional Government, which stipulates that regional governments are required to carry out the management of areas.
 - c. KEE of Biodiversity Parks, which numbers increased by 22 units in 2015 to 2017 (2015: 10, 2016: 4, and 2017: 8), or ~73% of the targeted number for 2019 (30 units). This unit amount is an increase from 73 Biodiversity Park units across Indonesia, most of which originally developed and/or served as an Arboretum and/or Conservation Forests (KLHK 2017, KLHK 2015;

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Table 2.4).

- d. Urban Forest: Between 2013 and 2017, the total cumulative area of urban forest that has been maintained and/or rehabilitated reaches 2,427 ha (KLHK 2017; Reanalysis from Graph 3.4, p. 125), thereby achieving ~48.6% of the cumulative target for 2019 (5,000 ha) (KemenPPN/BAPPENAS, 2015 p. II.M.L.029-12).
- e. Germplasm gardens and banks for food and agriculture. Inventory, exploration and collection of local SDGs for food crops, horticulture, plantations, and livestock have been carried out both by the central government and local governments simultaneously in various provinces. Indonesian Center for Agricultural Biotechnology and Genetic Resources Research and Development (BB Biogen) Agriculture Research and Development Agency () Ministry of Agriculture has a Germplasm Bank (<http://biogen.litbang.pertanian.go.id/bank-plasma-nutfah>) to collect various types of plant SDGs, especially food crops. As of 2018, 10,790 accessions. of horticulture plantations and livestock are scattered in various research institutions under the Ministry of Agriculture and other related Ministries.

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 5 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 5.

The IBSAP indicators for Activity Group 'Development of important ecosystems outside conservation areas' supporting the implementation of NT 5 for the Action Plan 'Maintenance and preservation of biodiversity' are the number and area of developed terrestrial ex-situ area, which comprises of Biodiversity Parks as part of Essential Ecosystem Areas (KEE), Botanical Gardens, Urban Forests, and Germplasm Parks.

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Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

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All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

Relevant websites, links, and files

[Statistik Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem 2017](#)
[Fish Species Database](#)
[Database Dokumen Rencana Aksi Nasional Direktorat Jenderal Pengelolaan Ruang Laut Kementerian Kelautan dan Perikanan](#)
[Matriks Kementerian dan Lembaga \[Materi tambahan untuk Peraturan Presiden Nomor 2 Tahun 2015 tentang Rencana Pembangunan Jangka Menengah \(RPJMN\) 2015-2019 untuk KLHK, KKP, Kementerian Pertanian\]](#)
[Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2016](#)
[Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2017](#)
[KKP Website](#)
[Statistik Kementerian Lingkungan Hidup dan Kehutanan 2017](#)

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the implementation progress of National Target 5 is assessed 'based on comprehensive evidence'. Such consideration for the assessment are, among others:

1. The progress of implementation efforts indicator of National Target 5, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements.

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine Affairs and Fisheries (KKP), Ministry of Agriculture (Mentan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the Presidential Regulation No. 29 Year 2014 on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical reports of ministries or government institutions.

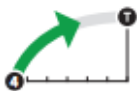
Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 6: Implementation of policies for sustainable management and harvesting



2018 - On track to achieve target

Targets

National Target 6: Implementation of policies for sustainable management and harvesting

EN

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 6 is: Implementation of policies for sustainable management and harvesting. NT 6 supports the Aichi Biodiversity Target (ABT) 6, i.e. sustainable management of marine biodiversity resources.

Based on the IBSAP 2015-2020, the implementation of NT 6 supports Action Plan 3 of the IBSAP 3, i.e. 'Maintenance and preservation of biodiversity' through Activity Groups (KK) with a theme of surveillance efforts on marine water and the marine biodiversity species that are protected and managed. In general, the implementation of the KK has been running and increasing – either as new programs/activities or continuation from pre-2015.

Regarding water area surveillance efforts, the Indonesian Government has made efforts to eradicate Illegal Fishing in 11 Indonesian Fisheries Management Areas (WPP). This effort was taken through the Establishment of the Task Force 115 on 19 October 2015, which was ratified by Presidential Regulation (Perpres) No. 115 Year 2015 on Task Force to Eradicate Illegal Fishing. The purpose of the formation of this Task

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Force is to support efforts in increasing law enforcement against violations and crimes in the fisheries sector, especially illegal fishing, in an integrated manner. This Perpres is in line with Minister of Marine Affairs and Fisheries Regulation (PermenKP) No. 56 Year 2014 on moratorium on permits for ex-foreign vessels, PermenKP No. 57 Year 2014 on restriction of mid-sea transshipment, as well as a form of implementation of Act No. 45 Year 2009 on fisheries, especially article 69 paragraph 4 that relates to burning and sinking of foreign vessels performing illegal fishing.

The eradication policy on Illegal Unreported and Unregulated (IUU) Fishing has boosted increase in the handling of violations and law enforcement. For example, in 2014 there were 58 cases followed up all the way to legal proceeding, and this number jumped to 163 cases in 2017 (KKP, 2017a, p. 75). In addition, since the establishment of Task Force 115, 317 vessels caught performing illegal fishing has been sunken. Most of the vessels are foreign-flagged vessels, originating from countries such as Vietnam, the Philippines, Malaysia, Thailand, and China. In addition, Task Force 115 also cooperates with country partners and international organizations such as Norway, the United States, Australia, INTERPOL, and UNODC to gain intelligence information regarding foreign vessels entering Indonesian waters (KKP, 2017b).

The eradication of IUU Fishing has dramatically boosted national marine capture fisheries production during the first semester of 2017. During this period, marine catches reached 3.35 million tons, an increase of 11.3 percent compared to the same period in 2016 of 3.01 million tons. As fish production increased, the welfare of fishermen has also improved. This is evident from the increasing trend of Fisherman Exchange Rate (NTN) indicator and Fisheries Business Exchange Rate (NTUN; Figure 9)

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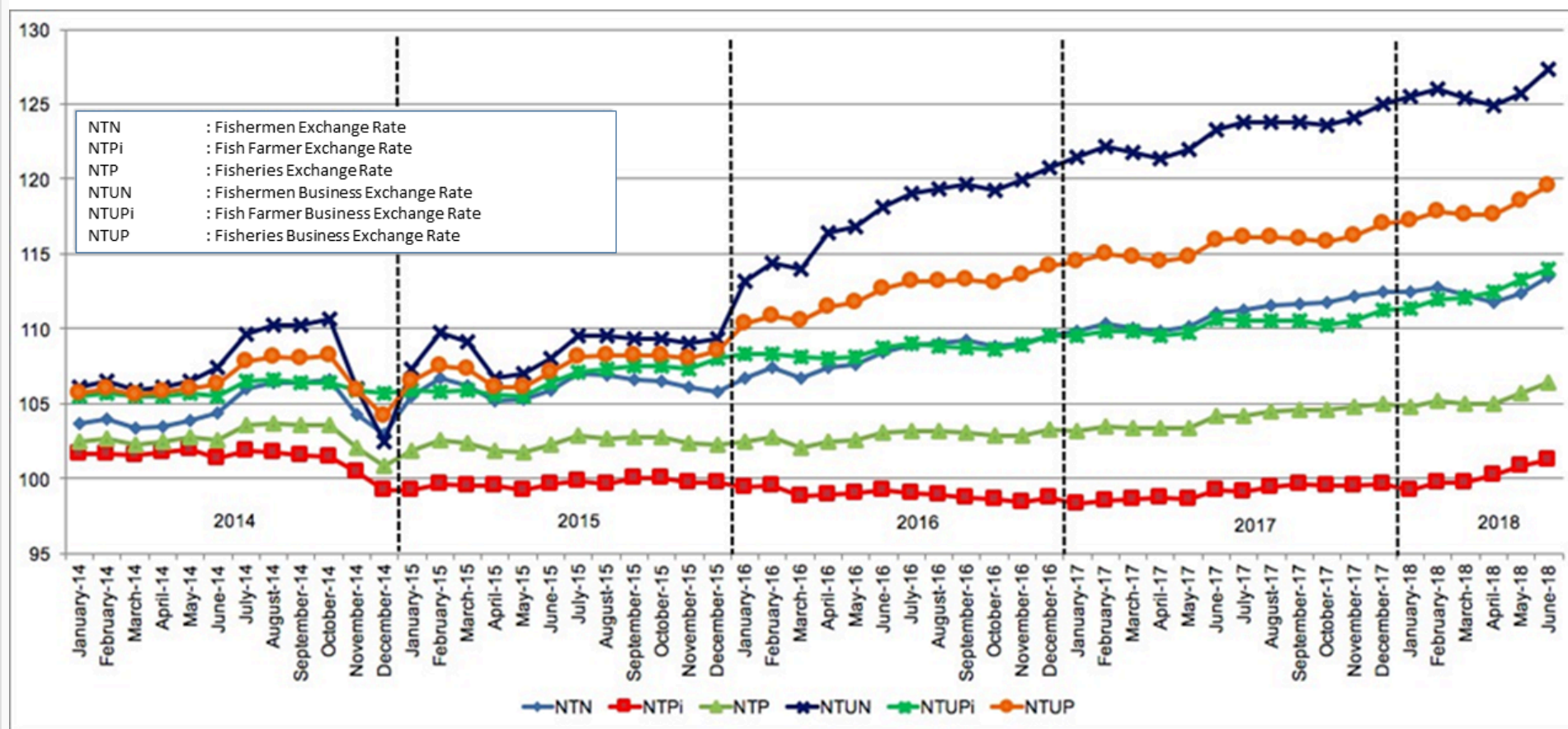


Figure 9. Exchange Rate Trend for Fishery Sector (KKP. 2018c)

The eradication of IUU Fishing also boosted the maximum sustainable yield (MSY) 7.31 million tons per year in 2013 to 12.54 million tons in 2017 (Figure 10; KKP, 2017c).

Maximum Sustainable Yield (MSY) in Indonesia (million tons/year)

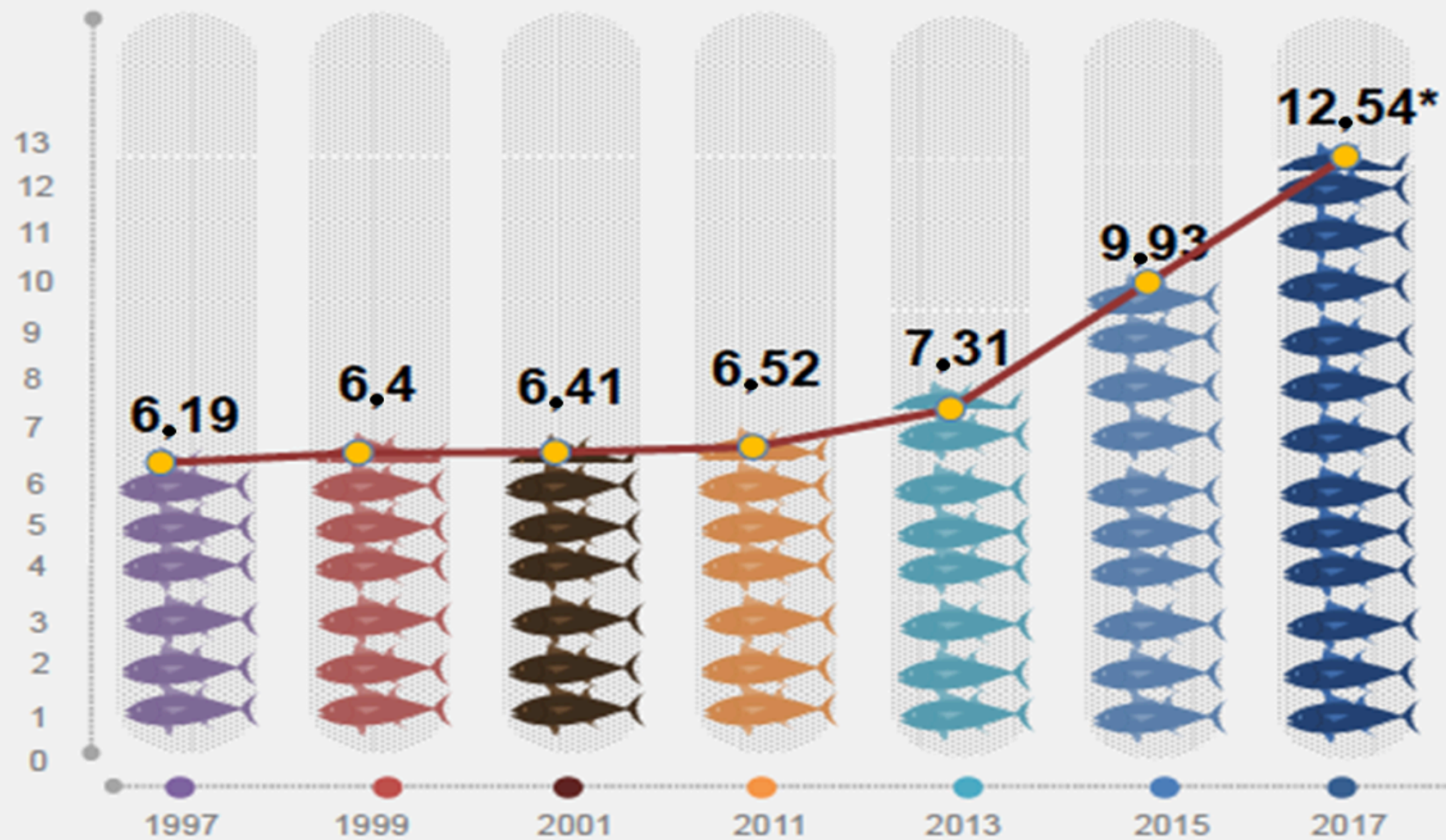


Figure 10. The number of Maximum Sustainable Yield (MSY) in Indonesia (million tons/year; KKP, 2017c)

In order to ensure sustainability and quality within the marine and fisheries sectors, the following main steps have been carried out:

1. Ensure the sustainable management and harvesting of all stocks of fish and invertebrates and aquatic plants, with consideration to the carrying capacity of the ecosystem:
 - The mapping marine and fisheries resources potential across 11 Fisheries Management Areas (WPPs) (KKP, 2017a).
 - Assessments based on the ecosystem approach (Ecosystem Approach to Fisheries Management/EAFM) on all WPPs (KKP, 2017a).
 - The stipulation of Minister of Marine Affairs and Fisheries Decree (KepmenKP) on estimation data of resources potential, total allowable catch, and the utilization level of fish resources across WPPs.
 - The requirement to implement logbooks for the recording of fishing and catch data through [Minister of Marine Affairs and Fisheries Regulation \(PermenKP\) No. 48 Year 2014](#). The number of vessels involved in the implementation of fish catchment log-book in 2017 was 4,463 vessels in 35 fishery ports (KKP, 2017a).
 - The recording of tuna fishing vessels is carried out both in Indonesian waters and EEZ (KKP, 2018b).
 - The requirement to install vessel monitoring system (VMS) transmitter on every fishing vessel measuring more than 30 gross tonnes (GT) operating in the Fisheries Management Area of Republic of Indonesia (WPPNRI) and on the open sea through [PermenKP No. 42 Year 2015](#).
2. Establish a Fisheries Management Plan specifically for important fishery commodities, which are, among others:
 - Tuna, skipjack, and little tuna, through the KepmenKP No. 107/KEPMEN-KP/2015.
 - Swimming crab, through KepmenKP No. 70/KEPMEN-KP/2016.
 - Flying fish, through KepmenKP No. 69/KEPMEN-KP/2016.
 - Lemuru fish, through KepmenKP No. 68/KEPMEN-KP/2016.
3. Overcome problems relating to the decrease of fish resource production relating to damage on marine ecosystems from the use of trawls and seine nets and conflicts between traditional/commercial fishermen and small/subsistent fishermen; through the issuance of Minister of Marine Affairs and Fisheries Regulation (PermenKP) No. 2 Year 2015 on prohibition on the use of trawls and seine nets in the WPPs (KKP, 2017c).

4. Management of 20 prioritized threatened species, through full protection, trade arrangements, utilization quotas, and limited protection, which are regulated in several regulations, as follows:
 - § PermenKP No. 18 Year 2009 on Ban on Export of Eel Seed.
 - § KepmenKP No. 43 Year 2016 on Establishment of Protection Status for Hilsa shad (*Tenualosa ilisha*).
 - § KepmenKP No. 18 Year 2013 on Establishment of Full Protection Status for Whale Shark.
 - § KepmenKP No. 37 Year 2013 on Establishment of Protection Status for Humphead wrasse.
 - § PermenKP No. 59 Year 2014 on Ban on Export of Hammerhead Shark and Oceanic Whitetip Shark.
 - § KepmenKP No. 4 Year 2014 on Establishment of Full Protection Status for Manta Ray.
 - § KepmenKP No. 49 Year 2018 on Establishment of Limited Protection Status for Banggai Cardinal Fish.
 - § PermenLHK No. P.92 Year 2018 on Amendment to Ministry of Environment and Forestry Regulation No. P.20/2018 on Species of Protected Animals.
5. The arrangement of utilisation quota on seven groups of marine animals:
 - § Coral (*anthozoa*).
 - § Humphead wrasse (*Cheilinus undulatus*)
 - § Seahorse (*Hippocampus* spp.).
 - § Hammerhead shark (*Sphyrna* spp.).
 - § Arowana fish (*Scleropages* spp.).
 - § Lola (*Trochus niloticus*), and
 - § Giant clam (*Tridacna* spp.)
6. The issuance of PermenKP No. 1 Year 2015 that regulates restriction on the capture of lobster, crab, and swimming crab.

7. The Indonesian government has conducted recording program on bycatches, as well as endangered, vulnerable, and protected species such as sea turtles, sharks and rays, through the placement of onboard observers and Turtle Excluding Devices for longline, purse seine, and gillnet capture devices. The number of vessels with observers in 2017 is 183 ships across 14 fishing ports (DJPT-KKP, 2017).
8. Several fishing industries/associations receive support for their involvement in the market-based incentive schemes such as fishery improvement programs leading to certification of products.

The certification upgrading project is conducted for 34 fishery commodities such as tuna, crab, red snapper, grouper, and tiger shrimp. 52 tuna processing companies and fisheries companies has been approved, taking into account the sustainability of dolphin (dolphin safe) in addition to 15 approved importers, distributors, brokers, retailers, agents and approved agents. Several companies have commenced fisheries improvement projects to improve their supply chains to comply with the Marine Stewardship Council certification. At least one tiger shrimp company has acquired an Aquaculture Stewardship Council certification.

Other activities contributing to the achievement of NT 6 globally are, among others:

1. Ratification of Agreement on Port State Measure through Presidential Regulation No. 43 Year 2016 on Ratification of Agreement on Port State Measures to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing.
2. Indonesia's involvement at an international level as a contracting party or member of the Regional Fisheries Management Organisations, i.e. Indian Ocean Tuna Commission (IOTC), Commission for the Conservation of Southern Bluefin Tuna (CCSBT), Western and Central Pacific Fisheries Commission (WCPFC); as well as a cooperating non-member on Inter-American Tropical Tuna Commission (IATTC).
3. Indonesia is the first country that shares its Vessel Monitoring System information to Global Fishing Watch in initiating global fisheries transparency.
4. Implementation of FAO's Code of Conduct for Responsible Fisheries.

The government partners with relevant civil society organizations in support of the protection and sustainable management of several fish species and create several supporting activities, which are, among others:

1. Mapping of Bycatch Endangered, Threatened, and Protected (ETP) Marine Species in several regions.

2. Capacity building of ETP bycatch handling: Implementation of Best Management Practice (BMP) as guidance in handling and mitigation of sea turtles caught by longlines or entangled by fishing nets. As an example, this implementation of BMP has boosted the survival rate of turtle bycatches beyond 95% in tuna longline catchers in Benoa; Bitung; and Muaran Baru.
3. Development of mitigation technology for ETP Bycatches such as green LED lamps: Sea turtle mitigation technology development has been conducted in waters of Paloh, Sambas Regency in the period 2016-2017, and has reduced turtle bycatches by more than 60% in the 2014-2017 period with the catch per unit of effort (CPUE) value lowered by 2.32%.
4. Development of Electronic Shield System (ESS) technology: The use of ESS at a frequency of 50 Hz can reduce the rate of guitarfish bycatch by 26.09% and other ray species by 35.07%.
5. Initiation of Rescue of Leatherback Turtles in the Kei Kecil Islands: A customary agreement between the King and Nufit customary council with communities in three villages (*ohoi*) within the Nufit customary area in Kei Kecil Islands, Maluku Province on the use of leatherback turtles.
6. Initiation of Surveillance of Leatherback Turtles Nesting Locations in Buru Island: Mapping of distribution of tracks and turtle nests on the coastal area of Buru Island. A total of 390 sea turtle tracks and egg nests have been identified, which includes 152 leatherback turtle traces and nests, while the rest are those of green and hawksbill sea turtles.
7. National Plan of Action (NPOA):
 - a. Mitigation of Sea Turtle Bycatches (2016-2020) includes strategies for handling and mitigating sea turtle bycatches for three types of fishing gears, i.e. longline fishing, gillnet fishing, and trawling in 12 priority provinces in Indonesia that have potential nesting beaches, such as National Marine Protected Area (KKPN) Pieh, Local Marine Protected Area (KKPD) Mentawai, KKPD Pesisir Selatan Regency, TWP Anambas Islands, and KKPD Bintan (Tambelan Islands).
 - b. Conservation of Indonesian Cetaceans, period 2016-2020 identify various threats, as well as action programs for managing cetacean tourism in natural habitats to reduce the biological impact on cetacean populations.
 - c. Conservation of Dugongs and their Habitat (Seagrass), period 2017-2021.
8. Publication on Whale Shark (*Rhincodon typus*) Population Distribution and Habitat with Whale Shark Indonesia (WSID; Figure 11).



Figure 11. Population and habitat distribution of whale sharks in Indonesia as of 2016. (WSID)

9. Publication on Distribution of Dugong Populations and Habitats in Indonesian Waters. This publication also includes data of bycatches and beached dugongs (Figure 12).

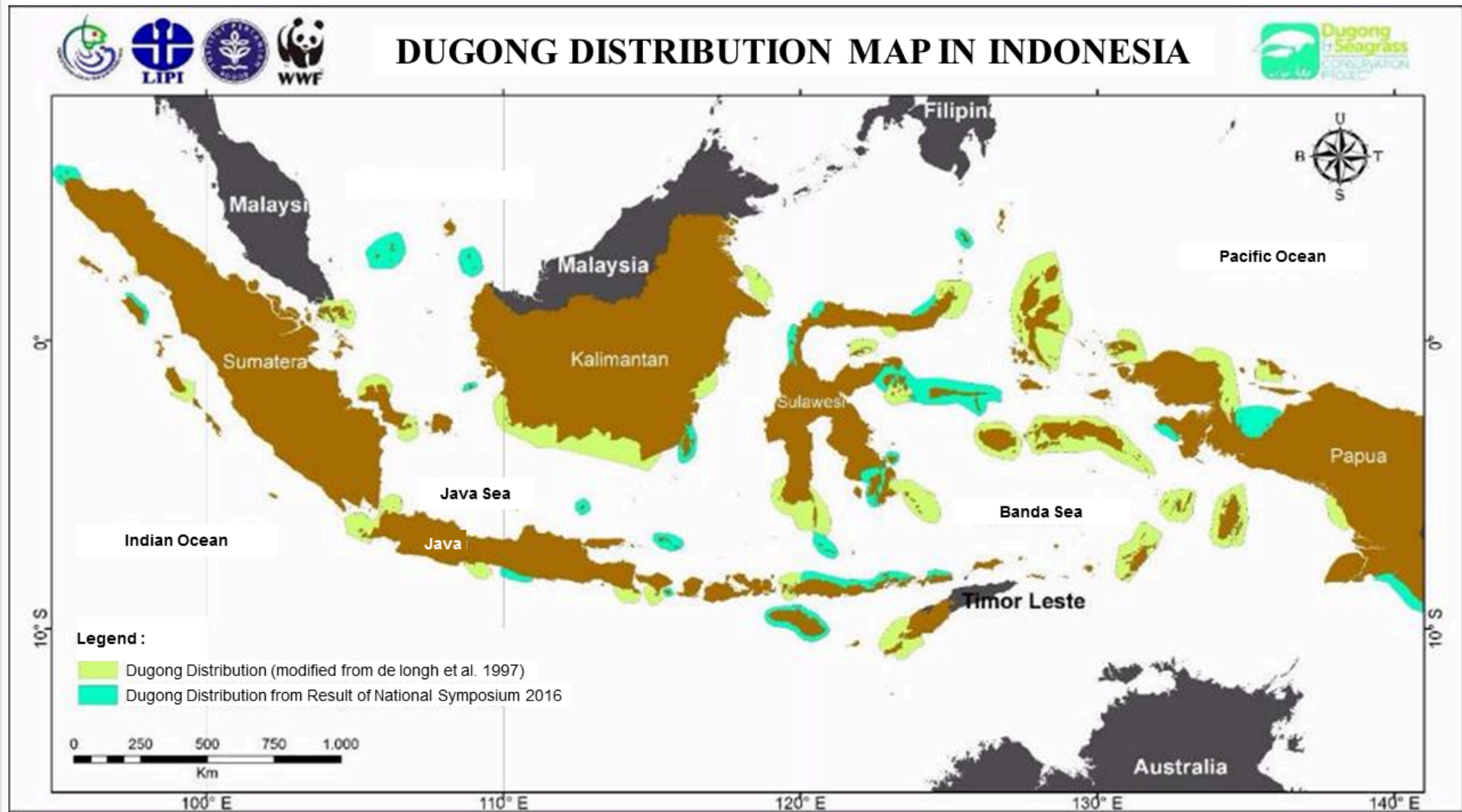


Figure 12. Dugong distribution map in Indonesia as of 2016

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 6 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 6. The progress indicator for every Activity Groups of NT 6 supporting Action Plan 3 of the IBSAP, i.e. 'Maintenance and preservation of biodiversity', is in the form of area monitoring as well as determination of species to be protected and managed.

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During the implementation period of the National Target (2015-2018), all achievement indicators contained in the IBSAP 2015-2020 and/or achievement targets mentioned in the Medium-Term National Development Plan/RPJMN (KemenPPN/BAPPENAS, 2015).

Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

All activity programs from grants to the government that are not reported in the LKJ of ministries/institution will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

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Relevant websites, links, and files

[Matriks Kementerian dan Lembaga \[Materi tambahan untuk Peraturan Presiden Nomor 2 Tahun 2015 tentang Rencana Pembangunan Jangka Menengah \(RPJMN\) 2015-2019 untuk KLHK, KKP, Kementerian Pertanian\]](#)
[Laporan Kinerja Direktorat Jenderal Perikanan Tangkap 2017](#)
[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)
[Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2017](#)

Rakornas Satgas 115 "Perkokoh Barisan" Berantas IUU Fishing
Laut Masa Depan Bangsa: Kedaulatan, Keberlanjutan, Kesejahteraan
KKP Website
Nilai Tukar Sektor Perikanan

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the implementation progress of NT 6 is assessed 'based on comprehensive evidence'. Such consideration for the assessment are, among others:

1. The progress of implementation efforts indicator of National Target 6, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements.

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the

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Presidential Regulation No. 29 Year 2014 on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 7: Improved sustainably managed land for agricultural, plantation and animal husbandry



2018 - On track to achieve target

Targets

National Target 7: Improved sustainably managed land for agricultural, plantation and animal husbandry

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 7 is: Improved sustainably managed land for agricultural, plantation and animal husbandry. NT 7 supports Aichi Biodiversity Target (ABT) 7 i.e. sustainable agriculture, aquaculture, and forestry.

Based on the IBSAP 2015-2020, the implementation of NT 7 supports Action Plan 3 of the IBSAP, i.e. 'Maintenance and preservation of biodiversity' through Activity Groups relating to the preparation of national and regional regulations to support the target for sustainable management and harvesting.

The implementation NT 7 has broadly run and is expected to reach the targets set out for several indicators, with implementation progress of activity groups elaborated in the two segments below, for both terrestrial and marine biodiversity.

1. Proof of implementation progress of NT 7 relating to terrestrial biodiversity

The implementation progress from efforts supporting 'Preparation of national and regional regulations to support the target for sustainable management and harvesting' based on the IBSAP 2015-2020 are, among others:

1. Based on sustainable food agriculture land protection efforts, in 2017, 1,499 UPPO Organic Fertilizer Processing Units has been established, an increase from 897 units in 2015, through activities to develop organic farming villages for rice in improving the fertility and productivity of agricultural land and preserve agricultural land resources and environment (Kementerian Pertanian, 2017a, p. 64; Kementerian Pertanian, 2015, p.100).
2. Other activities are supervision of the production process (on farm) through prime certification 1, 2 and 3 by the Competent Authority for Food Safety in the regional level (OKKPD) or in the national level (OKKPP) to farmers/farmer groups/business

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actors, where one of the assessments is on security and food and social aspects as well as environmental quality (Kementerian Pertanian, 2017a, p. 332, Table 104). Between 2015 and 2017, the cumulative number of certified fresh food products has reached 90.47%, exceeding the targeted amount at 80 percent (Kementerian Pertanian, 2017a, p.334, Table 104).

3. Conducting advocacies, campaigns, promotions, and socialization on diversifying local food consumption to officials and communities. This is related to the rice consumption, which, at 124 kg/capita/year, is still considered too high by the Indonesian Government. Diversification of local non-rice foods that are considered in the program include tubers (cassava, sweet potatoes, sago, potatoes, other tubers) and corn, to achieve a variety of nutritious, balanced and safe food conditions (B2SA).
4. Planting intensification area (LTT) reached 16.39 million ha, an 16.65% increase compared to that of 2014 (Kementerian Pertanian, 2017a, p.1). The increase in LTT is part of a special effort program for Indonesian food self-sufficiency by utilizing new technologies on both agricultural production facilities and crop cultivation systems to increase sustainable self-sufficiency in food production such as rice, corn and soybeans.
5. Utilization of protected wild plants and animals is regulated by Governmental Regulations (PP) No. 8 Year 1999 on the preservation of wild plants and animals species, which also regulates the utilization of protected wild plants and animals. This is supported by Minister of Environment and Forestry Regulation (PermenLHK) No. P.92/MenLHK/Setjen/Kum.1/8/2018 on the amendment of PermenLHK No. P.20/MenLHK/Setjen/Kum.1/6/2018 on protected plants and animals species.
6. Utilization of unprotected wild plants and animals is regulated through Governmental Regulation (PP) No. 8 Year 1999 on utilization of wild plants and animals species, and Minister of Forestry Decree (Kepmenhut) No. 447/Kpts-II/2003 on Administration of Harvesting or Capture and Distribution of Wild Plants and Animals.

Governance on production forest is also improved through various efforts, which are:

- i. Development of forest certification system and chain of custody in ensuring legality of timber, through the Timber Legality Verification System (SVLK), and the Forest Product Administration Information System (SIPUHH).
- ii. Establishment of production forest management units (KPHP).

2. Proof of implementation progress of NT 7 relating to marine biodiversity

The implementation progress from efforts supporting ‘Preparation of national and regional regulations to support the target for sustainable management and harvesting’ based on the IBSAP 2015-2020 are, among others:

1. The issuance of Proper Fish Handling (CPIB), Proper Fish Breeding (CBIB) guidances through Minister of Marine Affairs and Fisheries Decree (KepmenKP) No. 2 Year 2007 which comprises Proper Ways to Hatch Fish as stipulated further in Minister of Marine Affairs and Fisheries Regulation [PermenKP] No. 35 Year 2016, Proper Ways to Grow Fish, Proper Ways to Produce Fish Feed , and Proper Ways to Produce Fish Medicine, as well as Proper Ways to Quarantine Fish. As of 2016, 10,980 fish farming units has obtained Proper Fish Handling certification, a 8.6% increase from 2014 (DJPB-KKP, 2015, 2016).
2. The issuance of 55 regulations relating to aquaculture, as presented in table 6:

Table 6. Regulations relating to aquaculture

No.	Regulation No.	Topic
1	KEP.41/MEN/2001	Release of Vanamae shrimp as a superior variety
2	KEP.42/MEN/2001	Release of giant freshwater prawn as a superior variety
3	KEP.09/MEN/2002	Intensification of fish farming
4	KEP.15/MEN/2002	Release of rostris prawn as a superior variety
5	KEP.07/MEN/2004	Procurement and circulation of fish seeds
6	KEP.08/MEN/2004	Procedure for importing new types/varieties of fish into the territory of the Republic of Indonesia
7	KEP.26/MEN/2004	Release of catfish varieties as superior varieties
8	KEP.28/MEN/2004	General guidelines for shrimp farming in ponds
9	KEP.52/MEN/2004	Release of a JICA tilapia variety as a new variety
10	PER.15/MEN/2005	Fish catching and/or farming within the Fisheries Management Area of the Republic of Indonesia that is not for commercial purposes
11	KEP.23/MEN/2006	Release of red claw crayfish (<i>Lobster Huna Capit Merah</i>) as a superior variety
12	KEP.24/MEN/2006	Release of blue claw crayfish (<i>Lobster Huna Capit Biru</i>) as a superior variety

No.	Regulation No.	Topic
13	KEP.25/MEN/2006	Release of Pasupati shark catfish variety as a superior variety
14	KEP.26/MEN/2006	Indonesian Commission on Seaweed
15	KEP.44/MEN/2006	Release of Gesit Tilapia varieties as superior male parent lines
16	KEP.45/MEN/2006	Release of Nirwana Tilapia varieties as superior great grand parent stock varieties
17	KEP.02/MEN/2007	Proper Fish Breeding
18	PER.02/MEN/2007	Monitoring drug residues, chemicals, biological materials, and contaminants in fish farming
19	KEP.06/MEN/2007	Revocation of Minister of Marine Affairs and Fisheries Decree No. KEP.55/MEN/2004 on Determination of Sumatra Region as a Quarantine Area for Goldfish and Koi
20	KEP.33/MEN/2007	Determination of types of fish diseases that may potentially develop into becoming fish disease outbreaks
21	PER.15/MEN/2008	Procedure for collecting non-tax state revenues at the Department of Marine Affairs and Fisheries in aquaculture that originates from fisheries levies
22	PER.29/MEN/2008	Requirements for importing carrier media in the form of live fish
23	PER.05/MEN/2009	Business scale in the field of fish farming
24	PER.09/MEN/2009	Revocation of Minister of Marine Affairs and Fisheries Decree No. 04 Year 2003 on Requirements for Export of Neners (Milkfish seeds) from the territory of Republic of Indonesia
25	PER.15/MEN/2009	Fish species and re-stocking areas and aquaculture-based fishing
26	PER.30/MEN/2009	Delegation of authority to grant permanent business permits for investment in marine and fisheries for the purpose of one-stop integrated investment services to the Head of Investment

No.	Regulation No.	Topic
		Coordinating Board
27	PER.02/MEN/2010	Procurement and circulation of fish feed
28	PER.12/MEN/2010	Minapolitan
29	KEP.32/MEN/2010	Establishment of minapolitan area
30	PER.12/MEN/2011	Fishery products and facilities for aquaculture products from Japan entering the territory of the Republic of Indonesia
31	PER.15/MEN/2011	Quality control and safety of fishery products entering the territory of the Republic of Indonesia
32	PER.16/MEN/2011	Analysis on importation risk of fish and fish products
33	KEP.18/MEN/2011	General guidelines on minapolitan
34	KEP.39/MEN/2011	Amendment to Minister of Marine Affairs and Fisheries Decree No. KEP.32/MEN/2010 on the establishment of minapolitan area
35	KEP.66/MEN/2011	Release of Torsoro fish
36	PER.04/MEN/2012	Fish Medicine
37	PER.19/MEN/2012	Prohibition on export of eel (<i>Anguilla</i> spp.) seeds outgoing from the territory of Republic of Indonesia
38	KEP.09/MEN/2012	Release of Srikandi Tilapia
39	KEP.23/MEN/2012	Release of Nirwana II Tilapia
40	KEP.28/MEN/2012	Release of Sultana Tilapia

No.	Regulation No.	Topic
41	KEP.38/MEN/2012	Release of Heavy Grouper fish
42	KEP.46/MEN/2012	Release of Anjani Tilapia
43	KEP.47/MEN/2012	Release of Nilasa Red Tilapia
44	KEP.48/MEN/2012	Release of Pandu tilapia male parent and Kunti tilapia female parent
45	04/PERMEN-KP/2013	Guidelines for community group based fisheries business development
46	14/PERMEN-KP/2013	Amendment to Minister of Marine and Fisheries Regulation No. PER.04/MEN/2012 on Fish Medicines
47	37/KEPMEN-KP/2013	Establishment of protection status for Humphead wrasse (<i>Cheilinus undulatus</i>)
48	24/PERMEN-KP/2014	Proper ways to produce fish medicine
49	25/PERMEN-KP/2014	New fish species for aquaculture
50	41/PERMEN-KP/2014	Prohibition of Importing Dangerous Fish Species from Abroad Into the Territory of the Republic of Indonesia
51	43/PERMEN-KP/2014	Amendment to Minister of Marine and Fisheries Regulation No. 32/PERMEN-KP/2013 Prohibition of Importing Shrimp and Natural Feed from Countries and/or Transit Countries Affected by Early Mortality Syndrome or Acute Hepatopancreatic Necrosis Disease Outbreak
52	49/PERMEN-KP/2014	Efforts in Aquaculture
53	52/KEPMEN-KP/2014	Classification of Fish Medicine
54	3/PERMEN-KP/2015	Delegation of authority to grant business permits for aquaculture for the purpose of one-stop integrated investment services to the Head of Investment Coordinating Board

No.	Regulation No.	Topic
55	12/PERMEN-KP/2015	General guideline for the cultivation of Arowana super red ornamental fish (Schleropagus formosus)/Siluk
56	15/PERMEN-KP/2016	Live fish transport ship
57	32/PERMEN-KP/2016	Amendment to Minister of Marine and Fisheries Regulation No. 15/PERMEN-KP/2016 on live fish transport ships
58	35/PERMEN-KP/2016	Proper Fish Breeding

3. Indonesia has also implemented fisheries standardization for the entire supply chain, through the Indonesian National Standard (SNI). As of 2018, there are at least 111 SNIs for aquaculture, 69 SNI for fisheries testing methods, and 265 SNI for fishery products (BKIPM-KKP, 2018).
4. Quality assurance system certification (Hazard Analysis Critical Control Point/HACCP certification) and traceability in the Fish Processing Unit, which includes aquaculture products. There have been 7,496 such certificates being issued within the period of 2014-2017. The number of rejection cases on fishery product exports per partner country in the last 4 years is below 4 cases per year (BKIPM-KKP, 2016, 2017 and 2018). Several companies also run the Aquaculture Improvement Program in order to obtain the Aquaculture Stewardship Council (ASC) certification.
5. Development of Offshore Floating Net Cage in three locations and revitalization of 1,000 floating net cages, which is expected to yield more than 342 tons/year of production (DJPB-KKP, 2017).
6. The implementation of Independent Fish Movement (GERPARI) to curb carbon footprint from fish feed needs has increased the production of local raw fish feed by 300% from 2015 to 2016, while reducing the import of fish feed ingredients by up to 27% (DJPB-KKP, 2017).
7. Development of seed systems with broodstock centre reinforcement, and release of superior types/varieties of 10 fish species.

8. Launching of aquaculture business insurance program to encourage fish farming through risk protection, covering an area of 3,300 ha in 2017, and will be increased to 5,000 ha by 2018 (DJPB-KKP, 2017).
9. Regulations issued in ensuring quality assurance are:
 - § KepmenKP No. KEP.01/MEN/2007 on requirements for quality assurance and safety of fishery products in the process of production, processing and distribution.
 - § PermenKP No. PER.19/MEN/2010 on control of quality assurance and security system of fishery products.
 - § Head of Quarantine Agency, Quality Control and Safety of Fisheries Products Regulation No. PER.03/BKIPM/2011 on technical guidelines for implementing quality assurance and security system for fishery products.
 - § PermenKP No. 35/Permen-Kp/2016 on Proper Fish Breeding.

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 7 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of the activity group of NT 7. The progress indicators for every Activity Groups of TN 7 supporting Action Plan 3 of the IBSAP, i.e. 'Maintenance and preservation of biodiversity', is the number of national and regional regulations in support of the targeted sustainable management and harvesting.

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Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

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All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of

Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

Relevant websites, links, and files

[Laporan Kinerja BKIPM 2015](#)
[Laporan Kinerja BKIPM 2016](#)
[Laporan Kinerja BKIPM 2017](#)
[Indeks Standar Nasional Indonesia Badan Karantina, Pengendalian Mutu, dan Keamanan Hasil Perikanan](#)
[Laporan Kinerja Direktorat Jenderal Perikanan Budidaya KKP 2015](#)
[Laporan Kinerja Direktorat Jenderal Perikanan Budidaya KKP 2016](#)
[Matriks Kementerian dan Lembaga \[Materi tambahan untuk Peraturan Presiden Nomor 2 Tahun 2015 tentang Rencana Pembangunan Jangka Menengah \(RPJMN\) 2015-2019 untuk KLHK, KKP, Kementerian Pertanian\]](#)
[Laporan Tahunan Kementerian Pertanian 2015](#)
[Laporan Tahunan Kementerian Pertanian 2017](#)
[Statistik Pertanian 2017](#)
[Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2016](#)
[Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2017](#)
[KKP Website](#)
[The State of Indonesia's Forest 2018](#)

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the implementation progress of National Target 7 is assessed 'based on comprehensive evidence'. Such

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consideration for the assessment in this confidence level are:

1. The progress of implementation efforts indicator of National Target 7, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements.

Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Mentan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the Presidential Regulation No. 29 Year 2014 on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

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Other relevant website address or attached documents

National Target 8: Reduction of pollution that damages biological resources and ecosystem functions



2018 - On track to achieve target

Targets

National Target 8: Reduction of pollution that damages biological resources and ecosystem functions

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 8 is: Reduction of pollution level that damages biological resources and ecosystems functions. NT 8 supports Aichi

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Biodiversity Target (ABT) 8 which is pollution reduced.

Based on the IBSAP 2015-2020, the implementation of NT 8 supports Action Plan 3 of the IBSAP, i.e. 'Maintenance and preservation of biodiversity' through Activity Groups 'Pollution control from many types of activities'.

The implementation NT 8 has broadly run and is expected to reach the targets set out for several indicators, with implementation progress of activity groups elaborated in the two segments below for both terrestrial and marine biodiversity.

1. Proof of implementation progress of NT 8 relating to terrestrial biodiversity

Implementation progress from the efforts to support 'Reduction of pollution level that damages biological resources and ecosystems functions' based on IBSAP 2015-2020 indicators are:

1. Since the merging of two ministries, Ministry of Environment and the Ministry of Forestry (becoming KLHK) in 2015, there are 3 national programs related to pollution control (KemenPPN/BAPPENAS, 2015). In a broader sense, the various activities in this program are still continuing the previous activities set out in the previous National Medium Term Development Plan (RPJMN) (2010-2014) (KemenPPN/BAPPENAS, 2010). Priority programs/activities from the 2015-2019 RPJMN for pollution control:
 - a. Environmental and forestry law enforcement programs, which include pollution prevention activities through socialization and patrolling (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-2).
 - b. Pollution and environmental damage control programs, which include control activities for air pollution, water pollution, pollution and damage to coastal and marine areas, pollution and damage to peatlands (KemenPPN/BAPPENAS, 2015, p.II.M.L.029-36)
 - c. Pollution and environmental damage control programs, which include Toxic and Hazardous Materials (B3) management activities, B3 waste management, B3 waste and non-B3 waste business development, recovery of B3 waste contamination, and waste management (KemenPPN/BAPPENAS, 2015, p.II.M.L.029-38).

The progress of the implementation of other efforts that support Pollution control from many types of activities ' based on indicators that are different from the 2015-2020 IBSAP indicators.

1. Related to changes in the air, water and land cover quality:

- a. Air Quality Index (IKU) during 2015—2017 period was between 84.96 and 87.03 (KLHK, 2018, p. 198), fluctuate from year to year around the minimum index targeted at 2019, which is 84 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-36; Figure 13).
- b. Water Quality Index (IKA) during 2015—2017 period was between 53.1 and 53.2 (KLHK, 2018, p. 198) fluctuate from year to year below the minimum index targeted at 2019, which is 55 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-36; Figure 13).
- c. Land Cover Quality Index (IKTL) during 2015—2017 period is in the range of 58.55 to 60.31 (KLHK, 2018, p. 198), fluctuate from year to year below the minimum index targeted at 2019, which is 62 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-36; Figure 13).

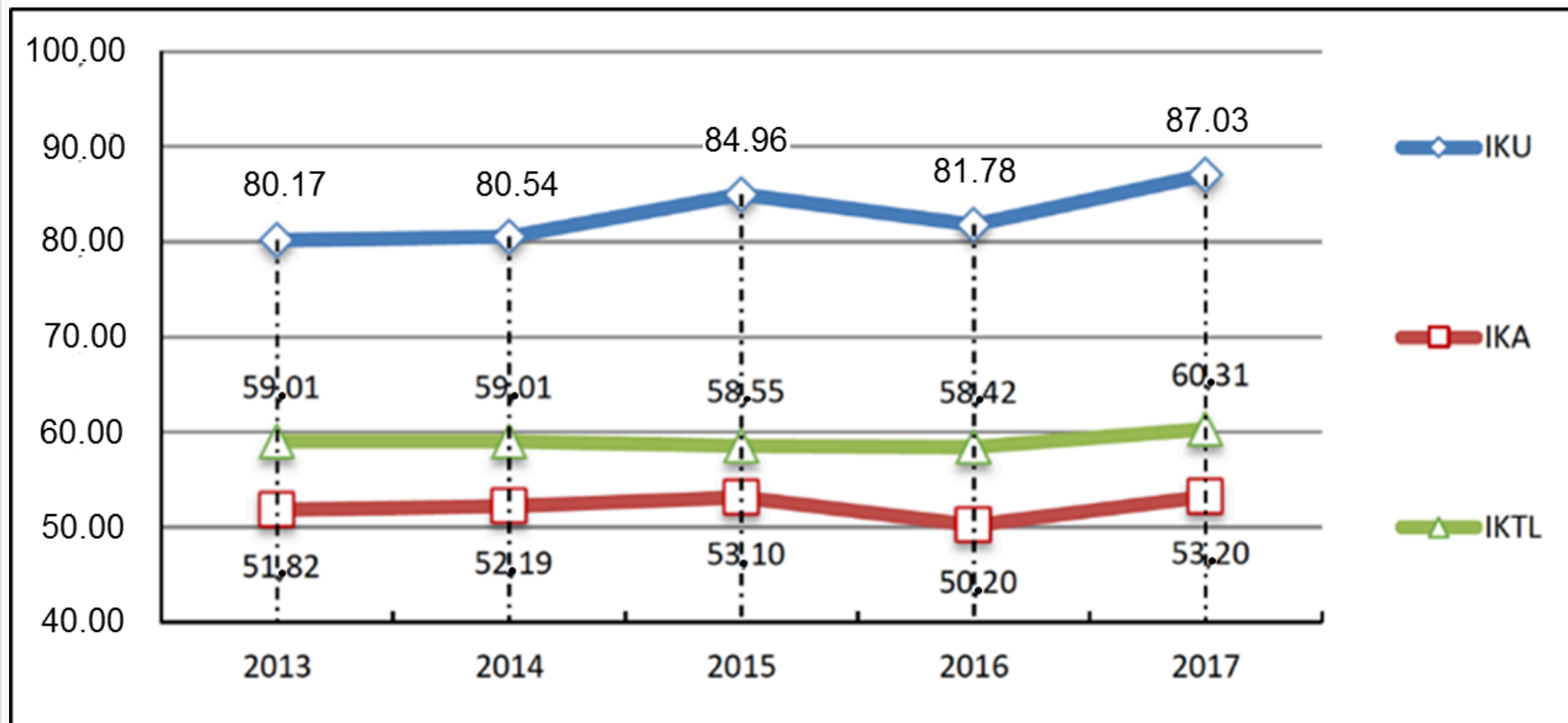


Figure 13. Changes in the Value of IKA, IKU and IKTL in 2013-2017 (KLHK, 2018, p. 198)

2. Regarding the reduction in a load of air pollution emissions:

- a. National air emission loads are targeted to drop by 15% in 2019, compared to that of the 2014 basis (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-36). The latest depiction of changes in emissions up to 2015 for five industries can be seen in Figure 14:

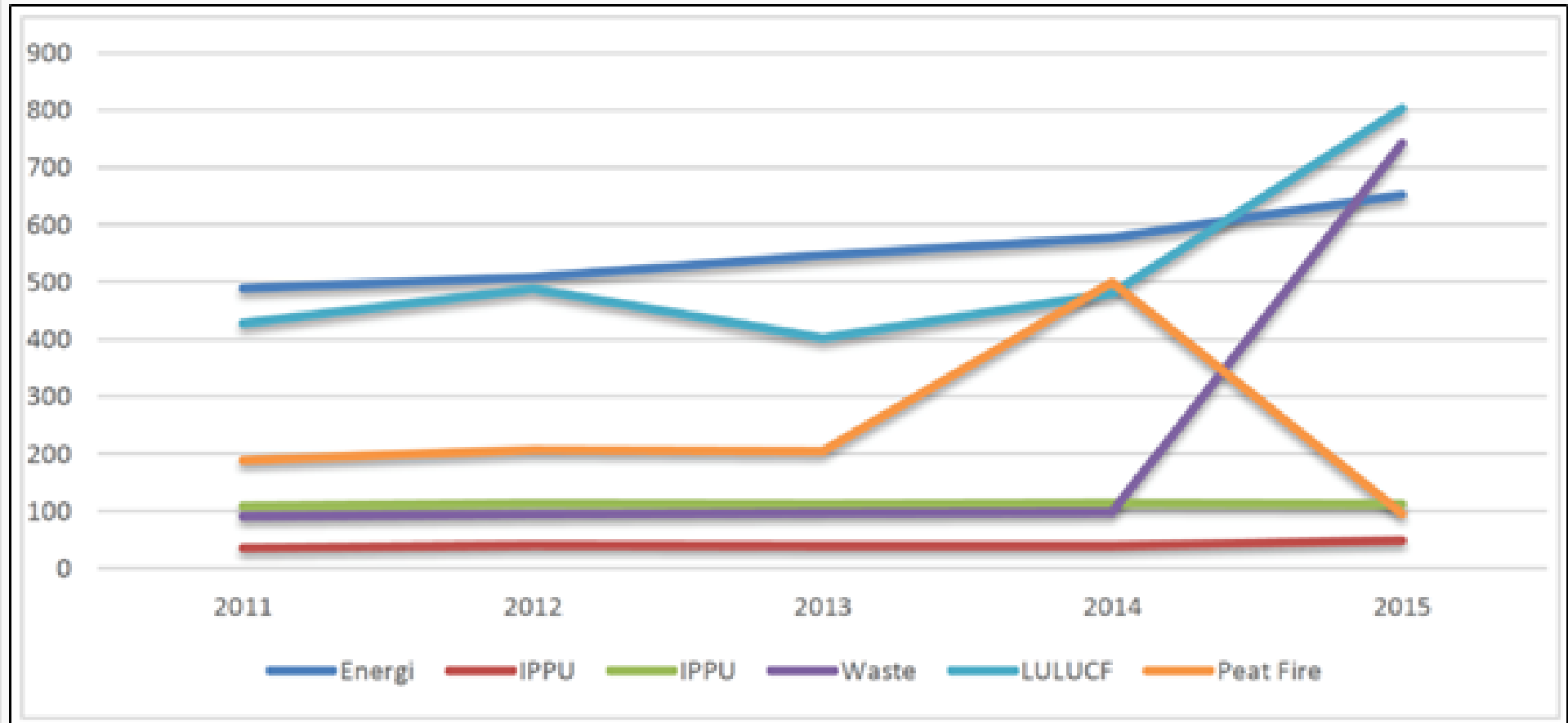


Figure 14. Sectoral greenhouse gas emissions from 2011 to 2015 (DJPPi-KLHK, 2018, p. 41, Table V.6)

- b. The number of cities having continuously operating Air Quality Monitoring System (AQMS) is 13 cities in 2018 [DJPPKL-KLHK, 2018, p. 37], or 28.98% from the targeted achievement for 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-36).
 - c. The number of cities implementing 'Green Transportation' as of 2017 is 5 cities (DJPPKL-KLHK, 2018, p. 32), or 10% from the targeted achievement for 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-36).
3. Regarding the decrease in water pollution load:
- a. The number of Watersheds (DAS) possessing continuously operating online water monitoring system (ONLIMO) as of 2017 is 7 priority watersheds (DJPPKL-KLHK, 2018, p. 42) or 46.67% from the targeted number for 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-36)
 - b. The Minister of Environment and Forestry Decree (KepmenLHK) on the Pollution Load Capacity (DTBP) and Pollution Load Allocation has been issued in 2017 for 3 rivers, i.e. Ciliwung, Cisadane, and Citarum with Decree No. SK. 298-300/Menlhk/Setjen/PKL.1/6/2017. In 2018 DTBP was established for 4 rivers, i.e. Bengawan Solo, Brantas, Kapuas, and Siak.
 - c. To find out the effect of intervention activities carried out through forest and land rehabilitation, both vegetatively or by building soil and water conservation buildings to the improvement of watershed quality in 15 priority watersheds, we can look at indicators such as Flow Regime Coefficient/KRA. The KRA value trend in each priority watershed from 2014-2017 shows relatively diverse values, with declining trends in 5 watersheds (Asahan Toba, Siak, Moyo, Brantas and Citarum), increasing trend in 5 watersheds (Ciliwung, Kapuas, Solo, Serayu, and Jeneberang) and fluctuating trend in 5 watersheds (Musi, Way Sekampung, Cisadane, Saddang and Limboto; Figure 15). (DJPEPDAS-KLHK, 2018, p. 18).

KRA VALUES $Q_{\text{MAKS}}/Q_{\text{MIN}}$ YEAR 2014-2017 IN 15 PRIORITY WATERSHEDS (DAS)

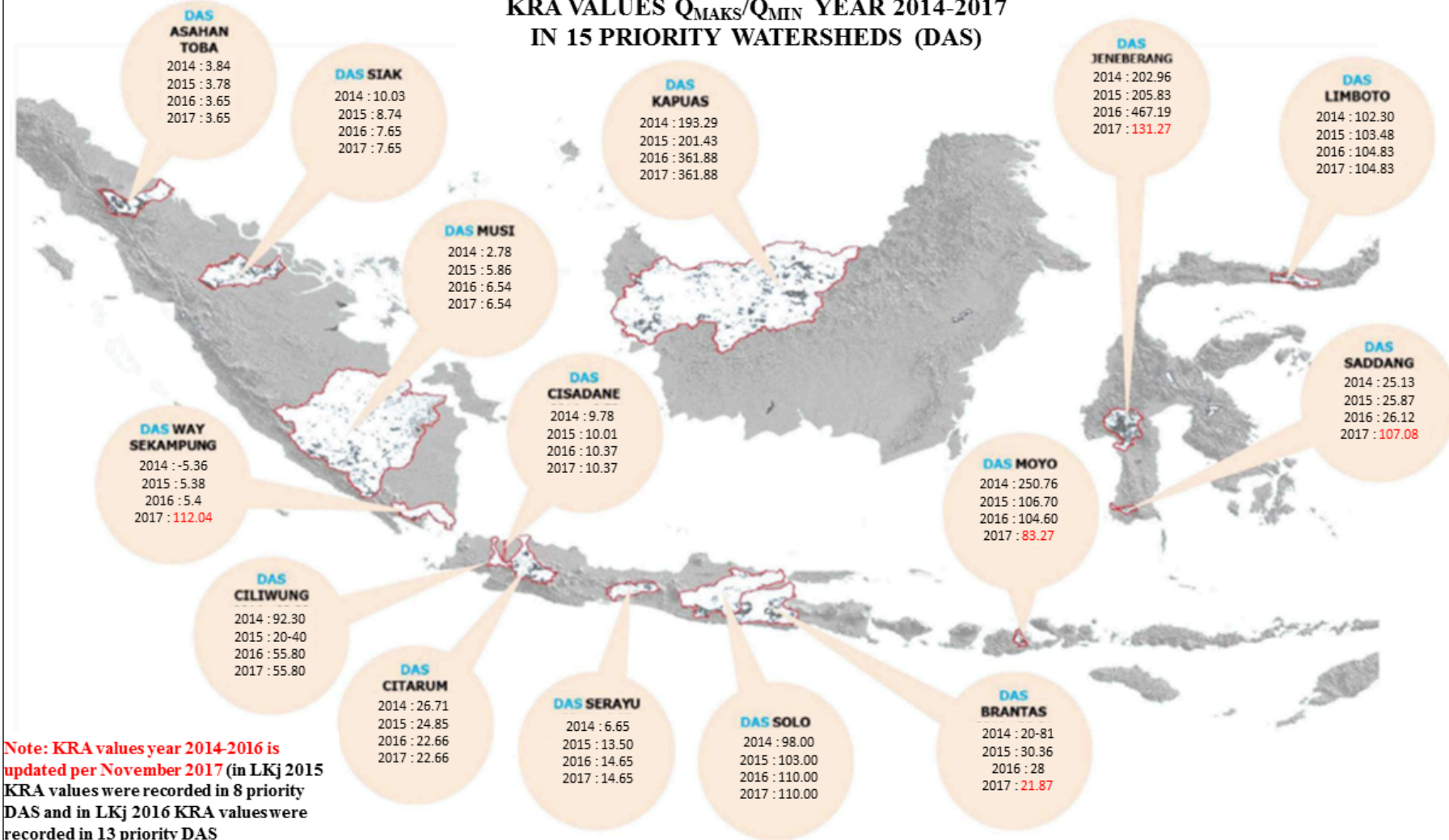


Figure 15. KRA values (Qmax/Qmin) in 15 priority watersheds for 2014-2017 (PEPDAS-KLHK, 2018)

2. In regard to the management of Hazardous and Toxic Materials (B3) waste and restoration of land contaminated with B3 waste:
 - a. The number of B3 managed until 2017 accumulatively reaches 2.16 million tons, or 72% of the targeted amount for 2019. (DJPSLB3-KLHK, 2018, p. 17).
 - b. The amount of B3 waste managed until 2017 accumulatively reaches 367.29 million tons, or 48.61% of the targeted amount for 2019 (DJPSLB3-KLHK, 2018, p. 17).
 - c. The number of lands contaminated with B3 waste that has been recovered until 2017 has accumulatively reached 1,369,894 tons (DJPSLB3-KLHK, 2018, p. 85), or 228% of the targeted number for 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-38).
 - d. Utilization of liquid and solid B3 waste (used motor oil and sludge oil) as alternative fuels until 2016 accumulatively reached 753,467 tons (DJPSLB3-KLHK, 2015, p. 57; --, 2016, p. 34), or 54% of the targeted amount for 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-40).
 - e. Laboratory quality management standards certification (ISO 17025) is granted to 16 Regional Environment Laboratories (Figure 16). In addition, the establishment of Mercury Research Center in Indonesia (MeRRCI) has been initiated to support the ratification of the Mercury Convention (Act No. 11 Year 2017). The distribution of the Regional Environmental Labs can be seen on the map below:

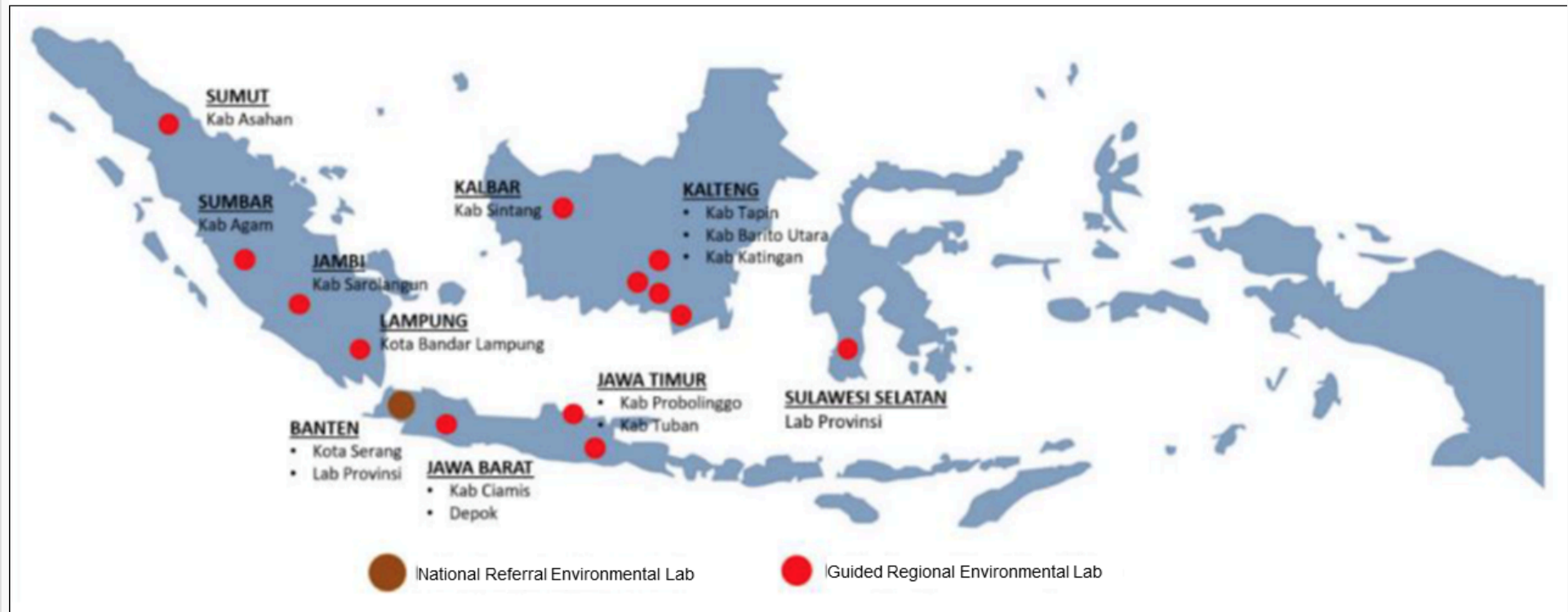


Figure 16. The distribution of the guided Regional Environmental Labs

3. In regard to the distribution management of B3, requests for the distribution management of B3 between 2015-2017 amounted to 6,087 applications, all of which are approved. (DJPSLB3-KLHK, 2015, p. 38; --, 2016, p. 22; --, 2017, p. 36).
4. In regard to waste management:
 - a. Percentage of solid waste managed until 2017 accumulatively reaches 14.9 million tons (DJPSLB3-KLHK, 2018, p. 18), or 54.8% of the targeted amount for 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-39).
 - b. Percentage of a waste reduction up to 2017 has accumulatively reached 14.44 million tons (DJPSLB3-KLHK, 2018, p. 18), or 170% of the targeted amount for 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-39).
 - c. Number of regencies/cities reaching the 'good' category of Adipura points (greater than 71) accumulatively reaches 355 regencies/cities (DJPSLB3-KLHK, 2018, p. 18), or 118% of the targeted number for 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-39).
 - d. Amount of waste managed up to 2017 accumulatively reaches 67.45 million tons, or 54.13% of the targeted amount for 2019 (DJPSLB3-KLHK, 2018, p. 17).
 - e. The performance of mandate of Act of Energy Conservation to ensure national energy security in 2017 through the Ministry of Environment and Forestry (KLHK) in the establishment of a pilot project for biomass energy supply facilities for communities through the utilization of Oil Palm Empty Bunches (TKKS) in Lampung Tengah Regency, Lampung Province. (DJPSLB3-KLHK, 2018, p. 71; Figure 17).



Figure 17. Non-B3 waste biomass reactor for oil palm empty bunches (DJPSLB3-KLHK, 2018)

2. Proof of implementation progress of NT 8 relating to marine biodiversity

The implementation progress of efforts that support 'Pollution control of many types of activities' based on the 2015-2020 IBSAP indicators, i.e. the number of pollution control programs in the marine areas in the period of 2015-2018 conducted by the Ministry of Marine Affairs and Fisheries (KKP) are 3 programs (Matriks KKP, KemenPPN/BAPPENAS, 2015), which are:

- a. Coastal and ocean utilization program: as of 2017, there have been 11 National Strategic Areas (KSN) or Specific National Strategic Areas (KSNT), i.e. Bangka Belitung, Kep. Seribu-DKI Jakarta, Serang, Cirebon, Surabaya, Manado, Kendari, Banyuwangi, Padang, Mataram and East Lombok, with installed water pollution monitoring facility and marine space utilization monitoring facility, out of 26 areas (46%) targeted for 2019 (DJPSDKP-KKP, 2017, p. III-14; KemenPPN/BAPPENAS, 2015, p. II.M.L.032-57)
- b. Operational monitoring program for the utilization of marine resources: as of 2017, there have been 29 Fish Processing Unit (UPI) and Aquaculture Business, or 96.7%, managing their own wastewater (DJPSDKP-KKP, 2017, p. III-14), and 11 KSN/KSNT locations has conducted surveillance of water pollution caused by non-fishery activities (oil spill, mining, and industry), representing 79% of the targeted number for 2019 (14 regions) (KemenPPN/BAPPENAS, 2015, p. II.M.L.032-65)
- c. *Pandu Laut Nusantara* (Archipelago Sea Guide) Program: *Pandu Laut Nusantara* is a community-based organization which serves as a forum for collaboration between various sea-lover communities and the government to preserve the sea in a collaborative manner, which was inaugurated on July 15, 2018, and carried out simultaneously at 73 points across Indonesian provinces on August 19, 2018. (<https://www.pandulaut.org/>).

The progress of the implementation of other efforts that support 'Pollution control of many types of activities' is based on indicators that are different from the 2015-2020 IBSAP indicators, in relation to various efforts to reduce pollution from activities within the marine and fishery sectors conducted as of 2017 are:

- a. Percentage of compliant fisheries and non-fisheries business actors whose activities did not result in pollution in 2016 amounted to 48.57% (DJPSDKP-KKP, 2017).
- b. The implementation of Certificate of Eligibility for Processing (SKP) for fish processing units (UPI) which include waste handling. As of 2017, there have been 2,107 UPI units possessing SKP, an increase from 1,084 in 2014 (KKP, 2017, p. 72; KKP, 2015, p. 27).
- c. Regulation on waste management in fishery ports through Director General of Capture Fisheries Regulation No. 7 Year 2017 on

Technical Guidelines for Hygienic (TPI/Fish Auction Center) at Fishery Ports.

- d. Director General Regulation PSDKP No 6 Year 2017 on Technical Guidelines for Water Pollution Monitoring Due to Fisheries Activities in the Fisheries Management Areas of the Republic of Indonesia.
- e. The Love the Ocean Movement (GITA LAUT) in 10 locations, Coastal Jamboree, Indonesia Coastal School(SPI), which is an awareness and support raising program for coastal garbage management community groups at 73 locations in 2018.
- f. Mapping of marine biotoxin and heavy metals pollution spread in 6 locations in 2014-2016 (BKIPM, 2015, 2016); and monitoring the freshness of fish, residues and hazardous materials in 68 locations (213% from the cumulative target of 32 monitoring in 2019 has reached) (BKIPM, 2016, p. 49); research related to pollution in coastal areas and small islands (BALITBANG-KP, 2016, Annex, p. 40, Table e).
- g. Presidential Regulation No. 83 Year 2018 on Handling of Marine Waste was followed up with National Action Plan for the Management of Plastic Waste at Sea (2018-2025) which focuses on four aspects, namely increasing stakeholder awareness, plastic waste management, funding, and institutional support.

Indicators and Activities

Indicator(s)used in this assessment

Assessment on the implementation progress of NT 8 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 8. The progress indicator for every Activity Groups of NT 8 supporting Action Plan 3 of the IBSAP, i.e. 'Maintenance and preservation of biodiversity', is:

1. 32% reduction in pollution from fisheries activities;
2. The number of pollution control program.

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Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of

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activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

Relevant websites, links, and files

[Laporan Kinerja Badan Penelitian dan Pengembangan Kelautan dan Perikanan KKP 2017](#)
[Rencana Pembangunan Jangka Menengah Nasional \(RPJMN\) periode 2010-2014](#)
[Laporan Kinerja BKIPM 2015](#)
[Laporan Kinerja BKIPM 2016](#)
[Laporan Kinerja BKIPM 2017](#)
[Statistik Direktorat Jenderal Pengendalian Daerah Aliran Sungai dan Hutan Lindung 2017](#)
[Statistik Direktorat Jenderal Pengelolaan Perubahan Iklim KLHK 2017](#)
[Laporan Kinerja Direktorat Jenderal Pengendalian Pencemaran dan Kerusakan Lingkungan 2017](#)
[Laporan Kinerja Direktorat Jenderal Pengawasan Sumber Daya Kelautan dan Perikanan 2017](#)
[Laporan Kinerja Direktorat Jenderal Pengelolaan Sampah Limbah dan Bahan Berbahaya dan Beracun 2017](#)
[Laporan Kinerja Direktorat Perencanaan dan Evaluasi Pengendalian DAS 2017](#)
[E-Monev \(Elektronik Monitoring dan Evaluasi\)](#)
[OMSPAN \(Online Monitoring Sistem Perbendaharaan dan Anggaran Negara\)](#)
[Matriks Kementerian dan Lembaga \(Materi tambahan untuk Peraturan Presiden Nomor 2 Tahun 2015 tentang Rencana Pembangunan Jangka Menengah \(RPJMN\) 2015-2019\)](#)
[Laporan Kinerja Kementerian Kelautan dan Perikanan Tahun 2015](#)
[Statistik Kementerian Lingkungan Hidup dan Kehutanan 2017](#)

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Level of confidence of the above assessment

The confidence level on the progress of implementation of NT 8 is assessed 'based on partial evidence', as there are several national achievement target indicators for which explanation is not possible due to lack of available data.

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the Presidential Regulation No. 29 Year 2014 on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

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Other relevant website address or attached documents

National Target 9: Implementation of prevention and eradication programs for invasive alien species (IAS)



2018 - On track to achieve target

Targets

National Target 9: Implementation of prevention and eradication programs for invasive alien species (IAS)

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 9 is: Implementation of prevention and eradication programs for invasive alien species (IAS). NT 9 supports *Aichi*

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Biodiversity Target (ABT) 9 related to prevention and control of IAS.

The existence of invasive alien species is very dangerous for an ecosystem because it can compete and constrain the native species, change natural ecosystems, and cause degradation and loss of a species and even a habitat.

Alien species have a very wide distribution because they have high adaptability to grow and develop in their new habitat. Indonesia is an area with potentials for the development of various invasive alien species.

Various types of alien species become invasive in its new habitat, such as *Barlettina sordida* (Compositae) in Gede Pangrango National Park (NP), *Ruellia tuberosa* (Acanthaceae) in Bali Barat NP, *Acacia nilotica* (Leguminosae) in Baluran NP, and *Maesopsis eminii* (Rhamnaceae) in Bodogol, Gunung Halimun NP. However, several alien plant species are used as important commodity for plantation (rubber, oil palm, coffee, cacao), agriculture (rice, corn, and vegetables), and decorative plants (Compositae, Acanthaceae).

Based on the 2015-2020 IBSAP, the implementation of NT 9 supports IBSAP Action Plan 3, i.e. 'Maintenance and Preservation Biodiversity'. The implementation of NT 9, in general, has reached the relevant target. The implementation progress of the relevant activity groups, which are:

1. Control of Invasive Alien Species (IAS) through mapping the distribution, implementation of regulations, and eradication.
2. Institutional development of IAS management.
3. Development of an environmentally friendly horticulture crop protection system.
4. Improvement of system and quality of quarantine for agriculture, animals and fishes as well as monitoring biosafety.

Implementation progress of efforts that support "IAS Control through mapping distribution, regulation implementation and eradication" is based on the 2015-2020 IBSAP indicators, which includes:

1. Availability of database on IAS that are prohibited from entering Indonesia include:
 - § 891 IAS profiles identified in the Global Invasive Species Database, managed by the Invasive Species Specialist Group (ISSG) from IUCN Species Survival Commission (GSID website).
 - § 31 IAS profiles of plant groups and organisms identified in the book Description and Visualization of Invasive Alien Species (IAS) (Badan Karantina Pertanian, 2017).

§ 79 IAS profiles of pisces groups identified in the book List of Potentially Invasive Alien Species for Pisces in Indonesia (KKP, 2015).

§ 187 IAS profiles already living within Indonesia based on Minister of Environment and Forestry Regulation No. P.94 Year 2016.

2. Regulations issued in regard to the control of IAS in Indonesia:

- a. Act (UU) No. 5 Year 1990 on Conservation of Biological Resources and their Ecosystems.
- b. UU No. 16 Year 1992 on Animal, Fish and Plant Quarantine.
- c. UU No. 5 Year 1994 on Ratification of the United Nations Convention on Biological Diversity (State Gazette of the Republic of Indonesia Year 1994 No. 41, Supplement to the State Gazette of the Republic of Indonesia No. 3556).
- d. Governmental Regulation (PP) No. 27 Year 1999 on Analysis on Environmental Impact Analysis.
- e. UU No. 41 Year 1999 on Forestry as amended by UU No. 19 Year 2004 on Establishment of Government Regulations to Substitute UU No. 1 Year 2004 on Amendment to UU No. 41 Year 1999 on Forestry.
- f. UU No. 31 Year 2004 on Fishery as amended by UU No. 45 Year 2009 on Amendment to UU No. 31 Year 2004 on Fishery.
- g. UU No. 32 Year 2009 on Protection and Management of the Environment.
- h. UU No. 13 Year 2010 on Horticulture.
- i. UU No. 18 Year 2013 on Prevention and Eradication of Forest Destruction.
- j. UU No. 23 Year 2014 on Regional Government, as amended several times, the latest by UU No. 9 Year 2015 on the Second Amendment to UU No. 23 Year 2014 on Regional Government.
- k. PP No. 7 Year 1999 on Preservation of Plants and Animals Species.
- l. PP No. 8 Year 1999 on Utilization of Species of Plants and Wildlife.
- m. PP No. 45 Year 2004 on Forest Protection, as amended by PP No. 60 Year 2009.

- n. Minister of Environment and Forestry Regulation (PermenLHK) No. 94 Year 2016 on Invasive Species.
 - o. Minister of Marine Affairs and Fisheries Regulation (PermenKP) No. 17 Year 2009 on the ban on the Importation of Several Dangerous Fishes Species from Abroad into the Territory of the Republic of Indonesia.
 - p. PermenKP No. 16 Year 2011 on Risk Analysis on Importation of Fishes and Fisheries Products.
 - q. PermenKP No. 33 Year 2014 on Fish Quarantine Installation.
 - r. PermenKP No. 41 Year 2014 on the ban on importing dangerous fish species from abroad into Indonesian waters. Minister of Marine Affairs and Fisheries Decree No. 80 Year 2015 on Determination of Pest Species and Quarantined Fish Diseases, Groups, Carrier Media and Distribution.
 - s. KepmenKP No. 81 Year 2015 on Establishment of Areas Not Cleared from Fish Quarantine Diseases, Groups, Carrier Media and Distribution within the Territory of the Republic of Indonesia.
 - t. KepmenKP No. 58 Year 2016 on Status Designation on Areas Not Cleared from From Fish Quarantine Diseases within the Territory of the Republic of Indonesia.
 - u. PermenKP No. 50 Year 2017 on Commodity Species Requiring Checks for Fish Quarantine, Fishery Product Quality and Safety.
3. Availability of map of IAS distribution in Indonesia:
- § 252 IASs data mapped in 4 Regional Natural Resources Conservation Center/BKSDA and 14 National Parks between 2017 and 2018.
 - § 107 mapped locations of protected, prohibited, and invasive biological agent marine species, and 37 invasive species identified in 2015 and 2016, thereby achieving 124% of the targeted number of locations for 2019 ([BKIPM-KKP, 2018, 2017, 2016, p. 59](#)).
 - § 21 risk analysis studies generated on protected, prohibited, and invasive biological agent marine species by Ministry of Marine Affairs and Fisheries during 2015-2017, or 26% of the targeted number for 2019 ([BKIPM-KKP, 2018, 2017, 2016, p. 39](#)).

4. IAS prioritized for eradication:

§ In 2017, 301 plant IASs were reported for eradication (5 species from BKSDA, 296 from National Park).

§ In 2018, 88 plant IASs were reported for eradication (8 species from BKSDA, 80 from National Park).

The implementation progress of efforts supporting "Development of IAS management institution' based on the IBSAP 2015-2020 indicator, as indicated by the issuance of National Strategy and Direction for Action Plan on Management of Invasive Alien Species, which contains IAS management institution.

The implementation progress of efforts supporting "Improving the system and quality of quarantine for agriculture, animals, and fish; and monitoring biosafety" based on the IBSAP 2015-2020 indicators are:

1. There is a cross-sectoral study on the implementation of regulations, and eradication of IAS conducted by KLHK, Ministry of Agriculture (Agriculture Quarantine Agency), KKP (Fish Quarantine Agency and Quality Control/BKIPM), LIPI, SEAMEO BIOTROP;
2. The establishment of national quarantine agency in July 2018;
3. The availability of application on alien and invasive fish species dubbed 'AIS Indonesia' developed by College of Fisheries (STP) in supporting the active participation of communities in the management of IAS. This application can be accessed through [Google Play](#) under the keywords 'AIS Indonesia' or 'Invasive Indonesia'.
4. Surveillance on biosafety through the Biosafety Clearing Center mechanism (KLHK, 2018).

Indicators and Activities

Indicator(s) used in this assessment

Assessment of the progress of NT 9 implementation is assessed based on the indicators set out in IBSAP as well as indicators of other efforts that support the implementation of NT 9 activity groups. The progress indicators for every Activity Groups of NT 9 supporting IBSAP Action Plan 3, i.e. 'Maintenance and preservation of biodiversity', are:

1. The number of IASs prohibited to enter Indonesia (for KK-1).
2. The number of regulations supporting IAS prevention (for KK-1).
3. Map of IAS distribution in Indonesia (for KK-1).
4. The number of priority IAS to be eradicated (for KK-1).
5. The number of institutions managing IAS (for KK-2).
6. The number of recommendations and target groups (for KK-3).
7. The number of policies, certifications and effectiveness of IAS prevention and disease (for KK-4)*.

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Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

EN

Relevant websites, links, and files

[Combating Invasive Alien Species.pdf](#)

[Deskripsi dan Visualisasi Jenis Asing Invasif \(JAI\)/Invasive Alien Species \(IAS\) Kelompok Tumbuhan dan Organisme yang Berasosiasi dengan Tumbuhan](#)

[Daftar Pisces yang Berpotensi Sebagai Spesies Asing Invasif di Indonesia](#)

[Laporan Kinerja BKIPM 2015](#)

[Laporan Kinerja BKIPM 2016](#)

[Laporan Kinerja BKIPM 2017](#)

[Global Invasive Species Database](#)

[Matriks Kementerian dan Lembaga \(Materi tambahan untuk Peraturan Presiden Nomor 2 Tahun 2015 tentang Rencana Pembangunan Jangka Menengah \(RPJMN\) 2015-2019\)](#)

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

[Balai Kliring Keamanan Hayati Indonesia](#)

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Level of confidence of the above assessment

The confidence level on the progress of implementation of National Target 9 is assessed 'based on partial evidence' as there is one out of seven national achievement target indicators for which explanation is not possible due to lack of available data.

EN

Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Mentan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the Presidential Regulation No. 29 Year 2014 on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

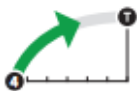
Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

EN

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 10: Reduced level of anthropogenic pressure on coral reefs and other vulnerable ecosystems affected by climate change



2018 - On track to achieve target

Targets

National Target 10: Reduced level of anthropogenic pressure on coral reefs and other vulnerable ecosystems affected by climate change EN

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 10 is: Reduced level of anthropogenic pressure on coral reefs and other vulnerable ecosystems affected by climate change. NT 10 supports *Aichi Biodiversity Target* (ABT) 10 regarding minimizing anthropogenic pressures in vulnerable ecosystems.

Based on the 2015-2020 IBSAP, the implementation of NT 10 supports the number 3 IBSAP Action Plan, namely 'Maintenance and preservation of biodiversity' through several Activity Groups (KK) with the following themes:

- i. Increase of study on climate change mitigation and adaptation.
- ii. Increase of climate change adaptation and mitigation activities at national and regional level

The implementation progress of efforts supporting 'More reviews on climate change mitigation and adaptation' based on the 2015-2019 IBSAP indicators, includes at least 17 study titles relating to climate change as documented by KKP since 2014 ([BRSDMKP, 2017](#)), which

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are:

- a. Study of Habitat Rehabilitation as an effort to mitigate the impact of Climate Change.
- b. Study the role of Indonesian through flow (ARLINDO) on climate change and its relation to the Ocean Health Index
- c. Adaptive Capacity of Coastal Communities to Face Climate Change: Case of Gangga Island, North Minahasa.
- d. Interaction of Climate Variability with Coral Reef Ecosystems and Coral Fish Resources.
- e. The effect of Climate on Seaweed Planting Season, *Kappaphycus alvarezii* in Gerupuk Bay Central Lombok Regency, West Nusa Tenggara.
- f. Working Paper on Policies for Calculating Losses and Ecosystem Damage in Coastal and Small Islands due to Climate Change.
- g. Significant Values and Estimated Economic Value of Carbon Deposits of Mangrove Vegetations in Kema, North Sulawesi.
- h. Seagrass Ecosystem Carbon Stock in The Small Islands: Case Study in Spermonde Island, South Sulawesi.
- i. Ecology and Community Structure of Seagrass in Ratatotok Bay, Southeast Minahasa, North Sulawesi.
- j. Marine Characteristics and Potential as Support for Seagrass Growth in Buyat and Ratatotok Bay, North Sulawesi.
- k. Seagrass Ecosystem as Environmental Bioindicator in Lembeh Island, Bitung, North Sulawesi.
- l. Detection of Change in Seagrass Bed using Remote Sensing Technology and its Relation to the Ability to Store Carbon in the Banten Bay.
- m. Indonesia's Blue Carbon: A Globally Significant and Vulnerable Sink for Seagrass and Mangrove Carbon.
- n. Blue Carbon: Blue Carbon Initiative Program Indonesia Derawan-Berau Islands, East Kalimantan
- o. Blue Carbon Stock of Mangrove Ecosystem in Nusa Penida, Bali.

- p. Ecosystem Role of Seagrass as Blue Carbon in Climate Change Mitigation, Case Study of Tanjung Lesung, Banten.
- q. Carbon Stock and Mangrove Community Structure as Blue Carbon in Tanjung Lesung, Banten.

The progress

of the implementation of other efforts that support the 'More reviews on climate change mitigation and adaptation' based on indicators that are different from the 2015-2019 IBSAP indicators, includes:

- a. Based on the publication of the Oceanographic Research Center (P2O) LIPI (Giyanto et al., 2017), coral reefs condition in Indonesia based on measurements conducted in 1,064 observation stations in 108 locations showed that the conditions of coral reef area cover are: 6.39 % is in very good condition, 23.40% is in good condition, 35.06% is in a sufficient condition and 35.15% is in bad condition.
- b. In 2016, the occurrence of coral bleaching in Indonesia took place at the west coast of Sumatra, the southern coast of Java, Bali, Lombok, NTB, southern Flores, South Sulawesi, and Maluku; those have been monitored jointly by the KKP, P2O LIPI, and the Indonesian Reef Check Network. The results of the evaluation of collaborative monitoring were followed up by drafting Indonesia Coral Bleaching Response Plan for the first time in Indonesia (KKP, 2016).

The progress of the implementation of efforts that support 'Improvement of activities dealing with climate change adaptation and mitigation at national and local levels' based on the 2015-2019 IBSAP indicators, which includes:

- 1. Climate Change Adaptation Activities:
 - a. 15 regions in Indonesia having a climate change scenario model, climate change action plan, and has implemented land-based adaptation activities.
 - b. Availability of Vulnerability Index Data Information System (SIDIK), integrated with climate data and priority sector vulnerability data. There are five indicators from socio-economic and climate data that is targeted to be incorporated within the database, which are: education, families residing on river banks, poverty, sources of income, and population density. In addition, rainfall data is also processed from SIDIK in determining probability and risk of flood and drought hazards. The SIDIK book can be downloaded in the following address: <http://km.reddplusid.org/d/380a2d63cef1d5d702278e2b561e2e51>
 - c. The preparation of National Action Plan for Adaptation to Climate Change (RAN-API), which comprises four priority sectors,

i.e. Water Resources, Coastal and Marine Resources, Agriculture, and Health.

2. Climate Change Mitigation Activities

a. The issuance of 6 policies relating to the reduction of Greenhouse Gas (GHG) in forestry, peatlands, and waste, or 86% of cumulative target for 2019 at 7 policies (DJPPI-KLHK, 2018

;

<http://ditjenppi.menlhk.go.id/peraturan-perundangan.html>

). The relevant policies are:

- [First Nationally Determined Contribution Republic of Indonesia](#) (NDC)
- Guidelines for Calculating GHG Emissions for Community Based Climate Change Mitigation Action through the Directorate General of Climate Change Regulation
- Monitoring NDC Implementation based on Minister of Environment and Forestry Decree No. [SK.679/MENLHK/SETJEN/KUM.1/12/2017](#).
- Procedures for organizing REDD+ as regulated by Minister of Environment and Forestry Regulation (PermenLHK)
- Implementation of the Climate Change Control National Registry System regulated by PermenLHK
- Guidelines for Implementation and Reporting of National Greenhouse Gas Inventories regulated by PermenLHK

b. The number of updated policies on climate change mitigation (MPI) is 10 policies, or 67% of the targeted cumulative number for 2019 (DJPPI-KLHK, 2018). The updated documents are

- Guidelines for Field Monitoring of MPI Activities for Forestry & Peatlands and Waste.
- Guidelines for Calculating GHG Emissions for Community Based Climate Change Mitigation Action in the Sectors of Energy, Forestry, Agriculture, and Waste through the Directorate General of Climate Change Regulation

- Guidelines for Implementation of the Climate Change Control National Registry System regulated by PermenLHK
- Guidelines for Operation and Implementation of REDD+ in Sub-National Level
- [NDC Implementation Strategy Book](#)
- [Book of Climate Change Adaptation & Mitigation and Sustainable Development Roadmap in Maluku Province](#) _

The implementation progress of other efforts supporting 'Improvement of activities dealing with climate change adaptation and mitigation at national and regional levels' based on different indicators from those in the 2015-2019 IBSAP indicator, i.e. efforts on improving the resilience of coastal areas to climate change, are detailed below:

- Providing assistance on facilities and infrastructure relating to climate change mitigation and adaptation on 25 islands (KKP, 2018b).
- Construction of coastal protectors using Hybrid Engineering and breakwater methods in 21 locations, coastal belts using geotextile method in 9 coastal districts with a total length of around 17 km (KKP, 2018b).
- Increased knowledge on climate change through the Indonesian Coast School and Coastal Jamboree for students in 40 coastal areas and small islands (KKP, 2018b).
- PDPT KPT program as a village development program to increase resilience for climate change mitigation and adaptation. This program has reached 47 regencies/cities (KKP, 2018b).

Indicators and Activities

Indicator(s) used in this assessment

Assessment of the progress of NT 10 implementation is assessed based on the indicators set out in IBSAP as well as indicators of other efforts that support the implementation of NT 10 activity groups. In general, for each NT 10 activity group assessed from several progress assessment indicators as part of IBSAP Action Plan 3, i.e. 'Maintenance and preservation of biodiversity', which are:

1. The number of study on climate change mitigation and adaptation.
2. The number of programs on climate change adaptation and mitigation at national and regional levels.

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Other indicators from efforts supporting the implementation of NT 10 relating to the Activity Groups and Action Plans above are:

1. Changes in the condition of coral reefs in Indonesia.
2. Efforts to manage climate impacts on community groups, coastal areas, and vulnerable small islands.
3. Climate change studies by KKP and drafting of Indonesia Coral Bleaching Response Plan.

Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

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Relevant websites, links, and files

[Status terumbu karang Indonesia 2017](#)

[Matriks Kementerian dan Lembaga \(Materi tambahan untuk Peraturan Presiden Nomor 2 Tahun 2015 tentang Rencana Pembangunan Jangka Menengah \(RPJMN\) 2015-2019](#)

[Panduan pemantauan pemutihan karang.](#)

[Website KKP](#)

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the progress of implementation of National Target 10 is assessed 'based on comprehensive evidence'. Such consideration for the assessment in this confidence level are:

1. The progress of implementation efforts indicator of National Target 10, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ and SAKIP.
2. LKJ and SAKIP are comprehensive reports containing complete and detailed activities and achievements.

EN

Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Mentan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

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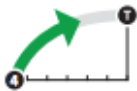
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EN

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020.](#)

National Target 11: Realization of sustainable maintenance and improvement of conservation areas



2018 - On track to achieve target

Targets

National Target 11: Realization of sustainable maintenance and improvement of conservation areas

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 11 is Realization of sustainable maintenance and improvement of conservation areas. NT 11 supports Aichi Biodiversity Target (ABT) 11 of increase and improvement of the conservation area.

Based on the IBSAP 2015-2020, the implementation of NT 11 supports Action Plan 3 of the IBSAP, i.e. 'Maintenance and preservation of biodiversity' through several Activity Groups (KK), with the following themes:

- i. Expansion of marine protected area to 20 million ha.
- ii. Recovery of terrestrial conservation area.
- iii. Sustainable management of protected forest.
- iv. Integrated management of watersheds.
- v. Essential ecosystems management.
- vi. Expansion and sustainable management of lands for agriculture, plantations and animal husbandry.

Broadly, the implementation of the activity groups above is underway through various programs supporting indicators set out by the IBSAP with various extent of achievements.

Based on the IBSAP, implementation of KK-1 (expansion of marine protected area) is assessed based on the total area of the marine protected area. **As of 2018, the Indonesian Government has established marine protected areas with a total cumulative area of 20.871 million ha** (KKP, 2018b; Figure 18 & 19), or 100% of the targeted total marine protected area of 20 million ha in 2020 (KemenPPN/BAPPENAS, 2015, p. II.M.L.032-46). This is targeted to increase to 30 million ha by 2030, which is equivalent to 10% of Indonesia's territorial waters (KKP, 2018b). In 2017, data on conservation area has been updated into the World Database on Protected Areas system (WDPA, 2018) .

The implementation progress of KK-1 is also supported by improvement efforts on the management of other marine protected areas, which are as follows:

1. As of 2018, 40 Local Marine Protected Areas (KKPD) and 10 National Marine Protected Area (KKPN) under Ministry of Marine Affairs and Fisheries (KKP) management have had a Zoning Management Plan (RPZ) in place (KKP, 2018c). 75 marine protected areas have been evaluated for their effectivity improvement (KKP, 2015, 2016 and 2017) based on data availability referring to assessment methods in the Effectivity Evaluation on Management of Marine, Coastal, and Small Islands Protected Area (E-KKP3K; Director General of Marine, Coastal, and Small Islands Area Decree No. KEP.44/KP3K/2012).

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Indonesia MPA Achievement



Figure 18. Achievement of Indonesian Marine Protected Area (KKP, 2018b)

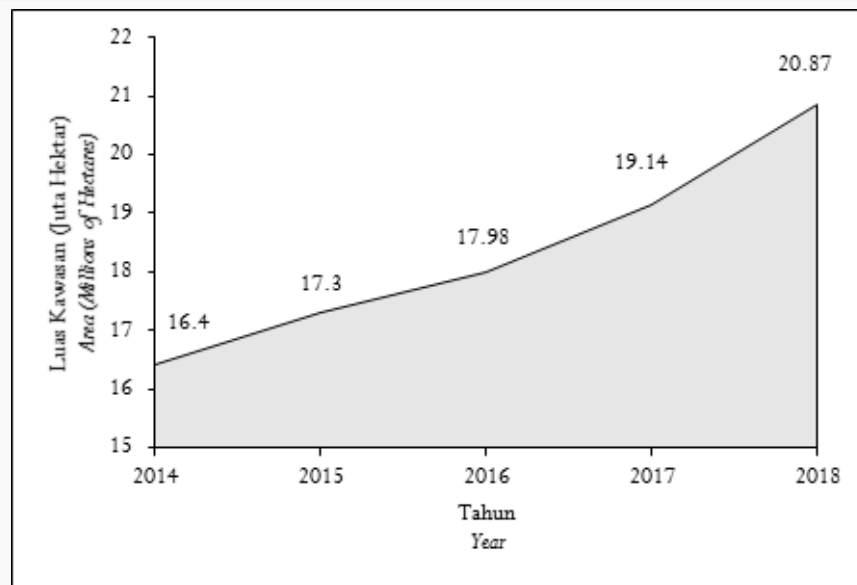


Figure 19. Development of total cumulative area of Indonesian Marine Protected Area between 2014 and 2018 (KKP, 2018b)

2. KKP together with a CSO established Marine Protected Area/MPA networks in 3 (three) seascapes, i.e. Lesser Sunda (Figure 20), Southeast Sulawesi (Figure 21), and Inner Banda (Figure 22), pursuant to Minister of Marine Affairs and Fisheries Regulation No. 13 Year 2014 on Marine Conservation Area Networks.



Figure 20. The geographic map of Lesser Sunda MPA locations

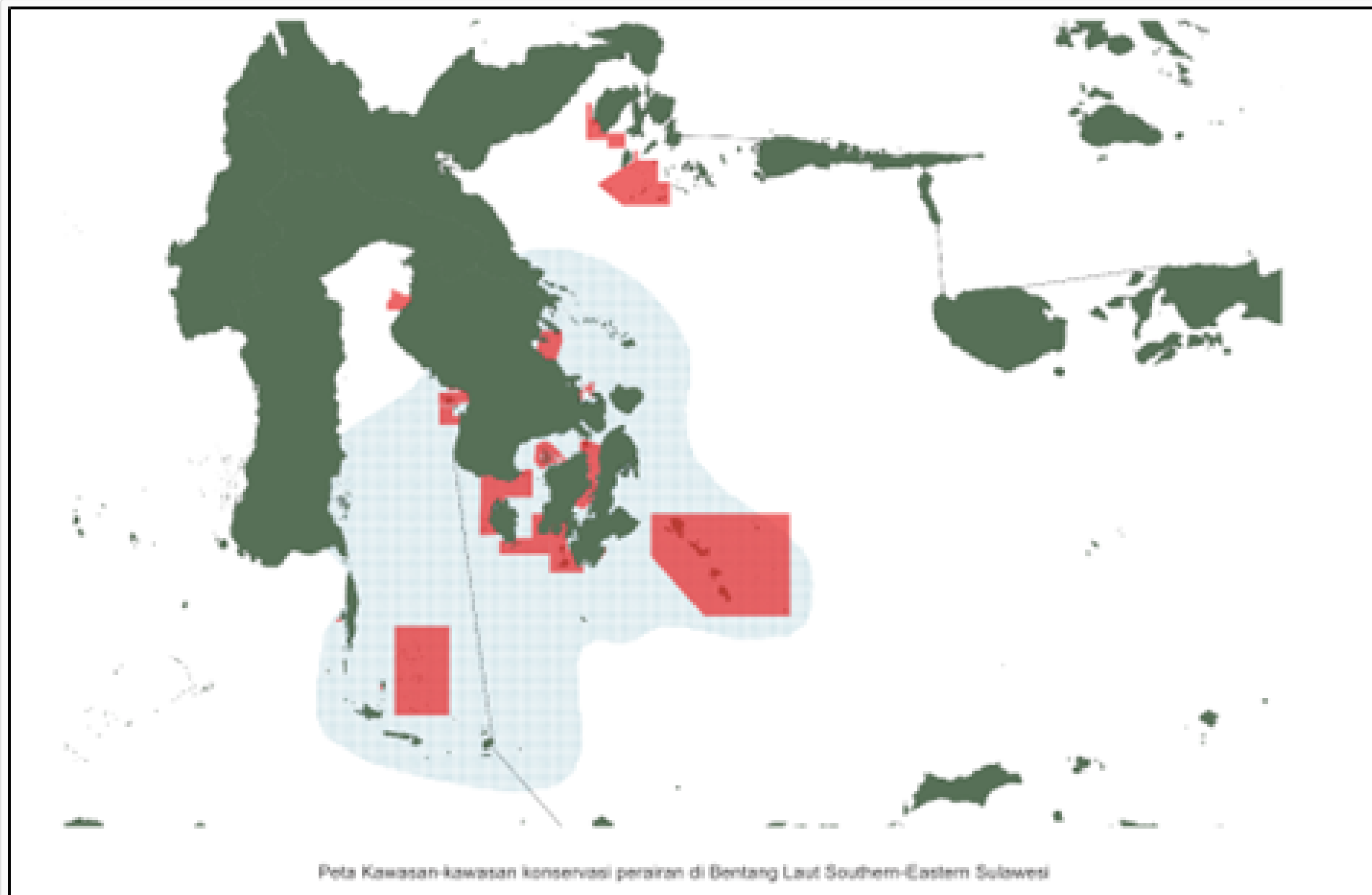


Figure 21. Southeast Sulawesi MPA Network

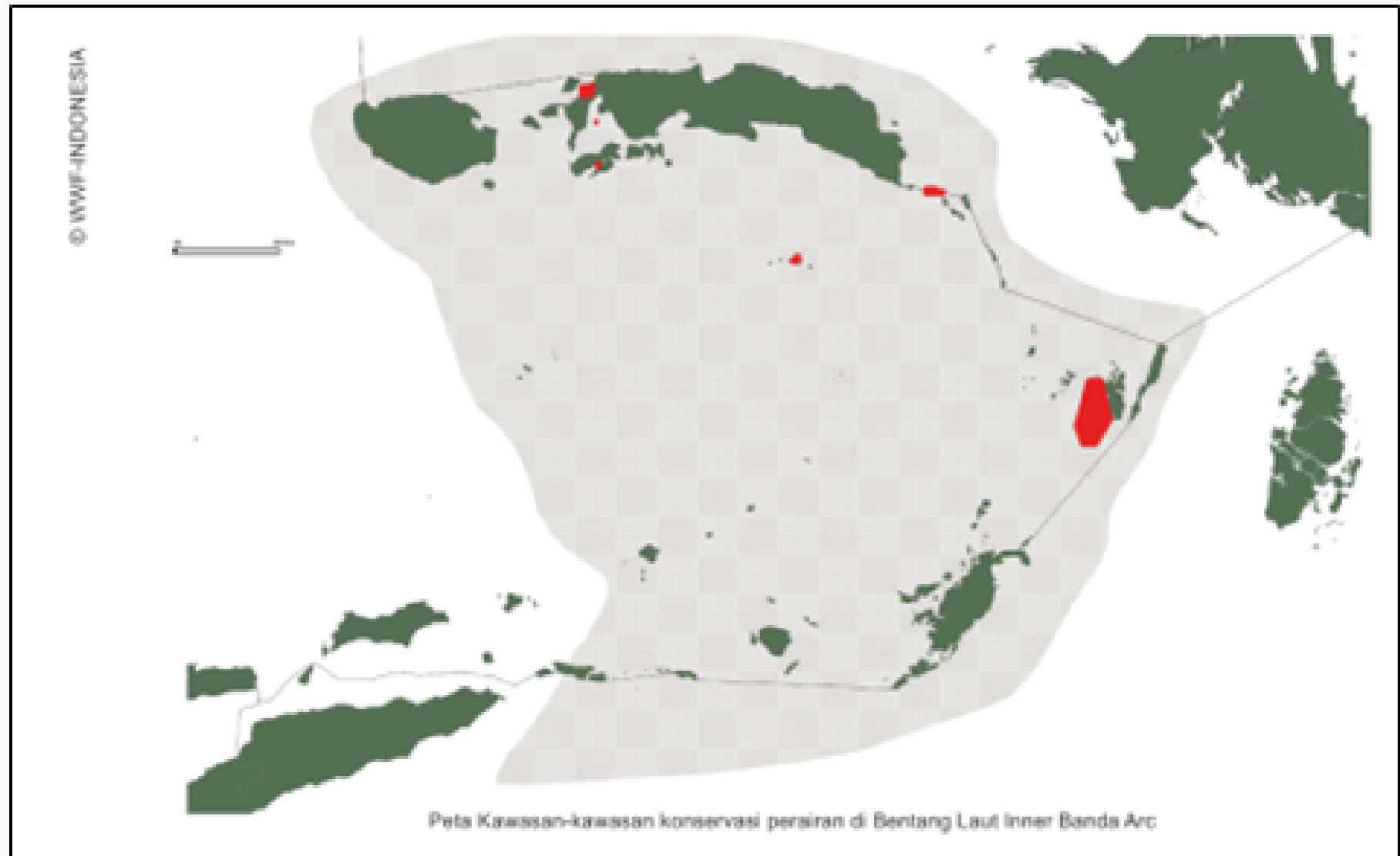


Figure 22. Inner Banda MPA Network

Based on the IBSAP, the implementation of KK-2 (recovery of terrestrial conservation areas) is assessed based on the total area of terrestrial conservation areas with a recovering ecosystem. As of 2017, the recovered area reached 25,943.97 ha (DJKSDAE-KLHK, 2018, p. 30), or 26% of the targeted area for 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-6).

Alongside the above progress on the implementation of KK-2, as of 2017, the total area of terrestrial conservation area in Indonesia is 22.1 million ha (which comprises part of the 27.4 million ha of conservation forests), with various functions, i.e. Nature Reserve, Animal Sanctuary, National Park, Nature Park, Forest Park, Hunting Park, and Nature Reserve Area/Nature Conservation Area (SOIFO, 2018).

Based on the IBSAP, the implementation of KK-3 is assessed based on the number of documents on sustainable management of protected forest areas. As of 2018, the number of decree (SK) issued for establishment of Protection Forest Management Units (KPHL) amounted at 56 documents (KLHK, 2018a, p. 43, Table 1.15), or 31% of the targeted number for 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-12).

The implementation of KK-4 (Integrated management of watersheds (DAS)) has been conducted on 15 s with DAS prioritized recovery handling (DJPDASHL-KLHK, 2018; Figure 23), which are: DAS Citarum, DAS Ciliwung, DAS Serayu, DAS Solo, DAS Brantas, DAS Cisadane, DAS Kapuas, DAS Siak, DAS Musi, DAS Asahan Toba, DAS Jeneberang, DAS Saddang, DAS Moyo, DAS Way Sekampung, and DAS Limboto. As such, the targeted number of prioritized DAS having relevant Data and Information regarding the decline Q_{max}/Q_{min} (Flow Regime Coefficient/KRA) has been achieved for 2019 (KemenPPN/BAPPENAS, 2015, p. II.M.L.029-13).

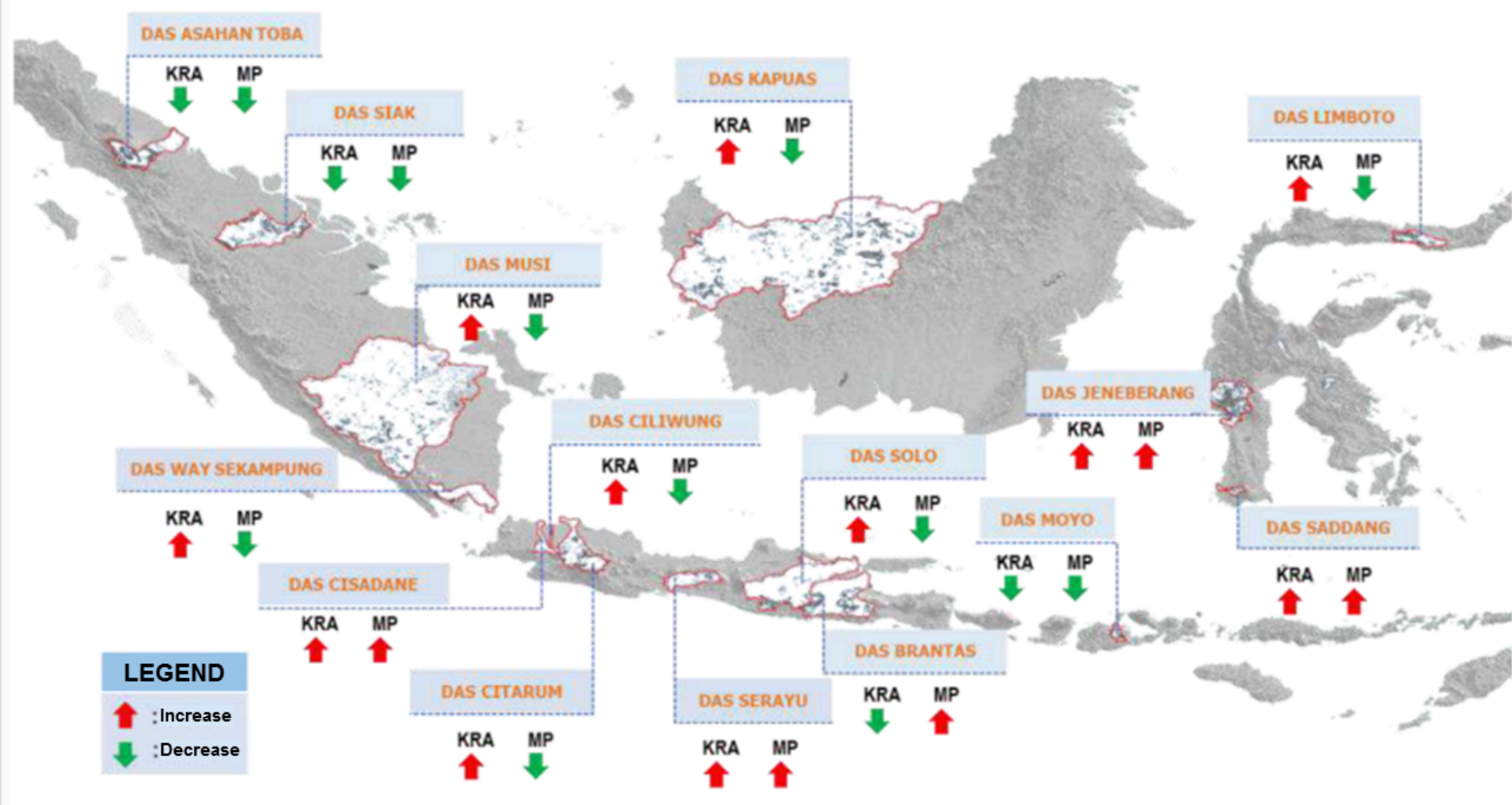


Figure 23. The distribution of declining trend for KRA and MK in 15 priority DAS

The implementation of KK-5 (Essential ecosystems management) in accordance with the IBSAP is assessed based on the number of established Essential Ecosystem Area (KEE). In the context of biodiversity conservation outside conservation areas, the government has prepared a policy on protection of KEE having important values and ecologically supports the sustainability of life through management based on conservation principles. KEE is established without imposing any changes on the function of the area and the status of land rights in accordance with the prevailing laws and regulations. Typologies that can be defined as KEE are: wetland ecosystems (karst, mangroves), wild life corridor, high conservation value area, and biodiversity park.

As of 2017, there have been established 35 units of KEE, 103% of the targeted number in the BISAP 2015-2020, which are spread across several Indonesian islands with a combined total area of 710,554.731 ha (DJKSDAE-KLHK, 2018; Figure 24). The developed KEEs are established through a Decree (SK) issued by a Head of Regional Government (Governor/Regent/Mayor), with independent and collaborative management with relevant stakeholders. (Table 7).

Figure 24. Map of KEE locations in Indonesia

Table 7. List of KEE in Indonesia established by Regional Governments

Year	No	KEE
2015	1	Biodiversity Park, West Jawa Province
	2	Biodiversity Park, Belitung Regency
	3	Biodiversity Park, West Lampung Regency
	4	Biodiversity Park, Kuningan Regency
	5	Biodiversity Park, Sumedang Regency
	6	Biodiversity Park, Gunung Kidul, Special Region of Yogyakarta
	7	Biodiversity Park, Jombang Regency
	8	Biodiversity Park, Banjarbaru City
	9	Biodiversity Park, Sekadau Regency
	10	Biodiversity Park, West Sumatra Province
	11	Pangpang Bay Mangrove, East Java Province
	12	Jaring Halus Mangrove, North Sumatra Province
	13	Sangkulirang Mangkalihat Karst, East Kalimantan Province
2016	1	Biodiversity Park, Bedegung, Muara Enim Regency, South Sumatra Province
	2	Biodiversity Park, Pelawan, Central Bangka Regency, Bangka Belitung Islands Province
	3	Biodiversity Park, Universitas Tadulako, Palu City, Central Sulawesi Province
	4	Biodiversity Park, Kokolomboi, Banggai Kepulauan Regency, Central Sulawesi Province
	5	Mojo Village Mangrove, Pemalang Regency, Central Java Province
	6	Orangutan Corridor, Wehea-Kelay Landscape
	7	Sea Turtle Corridor, West Lombok Regency
	8	High Conservation Value Area, Ciamis Regency, West Java Province
2017	1	Biodiversity Park, Solok City
	2	Biodiversity Park, Pariaman
	3	Biodiversity Park, North Konawe
	4	Biodiversity Park, Pupuk Kujang
	5	Biodiversity Park, Baubau
	6	Biodiversity Park, Muna
	7	Biodiversity Park, Nyaru Menteng
	8	Biodiversity Park, Blitar
	9	Mangrove Gorontalo
	10	Mangrove, West Lombok Regency

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 11 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 11. The progress indicators for every Activity Groups of NT 11 supporting Action Plan 3 of the IBSAP 'Maintenance and preservation of biodiversity' are:

1. 20 million ha of marine protected area.
2. 250.000 ha of recovered terrestrial conservation area.
3. The number of documents on management of conservation area.
4. The number of integrated management of watersheds.
5. The number of established essential ecosystem area units.
6. The total area of agriculture, plantation, and animal husbandry.

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Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

EN

Relevant websites, links, and files

[Laporan Kinerja Direktorat Jenderal Perikanan Tangkap 2017](#)
[Matriks Kementerian dan Lembaga \(Materi tambahan untuk Peraturan Presiden Nomor 2 Tahun 2015 tentang Rencana Pembangunan Jangka Menengah \(RPJMN\) 2015-2019\)](#)
[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)
[Laporan Kinerja Kementerian Kelautan dan Perikanan 2017](#)
[Rakornas Satgas 115 "Perkokoh Barisan" Berantas IUU Fishing](#)
[Laut Masa Depan Bangsa: Kedaulatan, Keberlanjutan, Kesejahteraan](#)
[KKP Website](#)
[KKP Website - Marine Protected Area](#)
[Statistik Kementerian Lingkungan Hidup dan Kehutanan 2017](#)
[MPAtlas](#)
[WDPA](#)
[The State of Indonesia's Forest \(SOIFO\)](#)
[Case Study of Conservation Area Network Management.pdf](#)
[Exemplary Activities of KPHL Unit I Rinjani Barat.pdf](#)
[Ten New Ways.pdf](#)

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the implementation progress of NT 11 is assessed 'based on comprehensive evidence'. Such consideration for the assessment are, among others:

1. The progress of implementation efforts indicator of National Target 11, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ and SAKIP.
2. LKJ and SAKIP are comprehensive reports containing complete and detailed activities and achievements.

EN

Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Mentan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the Presidential Regulation No. 29 Year 2014 on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

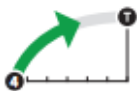
Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

EN

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

National Target 12: Realization of efforts to maintain the populations of endangered species as a national conservation priority



2018 - On track to achieve target

Targets

National Target 12: Realization of efforts to maintain the populations of endangered species as a national conservation priority

EN

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

Indonesia's biodiversity with its high number of species and abundance is often overused without considering its sustainability, thereby increasing permanent risks such as species extinction. In addition, some human activities that cause habitat degradation, pollution, environmentally friendly harvesting, and the introduction of invasive species can also increase the threat of species extinction. Therefore, in order to manage endangered biodiversity species, priority must be given to protection activities by considering the level of threat of species that can cause a decrease in the number of population and eventually lead to extinction. Animals that are endangered and need to be protected generally have several features which include a rare, endemic, and drastic drop in its population number. In addition to declaring protection for endangered species, protection is also carried out for the living habitat of those protected species.

Based on the IBSAP 2015-2020 document, achievement of **National Targets (NT) 12 Realization of efforts to maintain the populations of endangered species** are carried out through the Action Plan for Maintenance and Preservation Biodiversity with activity groups on

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increased populations of protected, endangered species in biodiverse ecosystems.

In efforts to conserve this biodiversity of animals in terrestrial areas, one of the targeted priorities is an increase in endangered animal populations with a 10% increase in the monitoring location in 2019 from the 2013 data baseline (DJKSDAE-KLHK, 2015, p. 46). While conservation efforts for priority protected and/or threatened marine biodiversity targets is to increase the species of marine biodiversity protected and preserved up to at least 20 species for 2019 (KKP, 2017, p. 96).

In order to maintain and increase the population of endangered species in the terrestrial region, several things have been done (DJKSDAE-KLHK, 2016b), which are:

- A. In 2018, a list of protected species of plants and animals has been established to revise the previous list of protected species of plants and animals based on the attachment to Government Regulation No. 7 Year 1999 on Preservation of Plants and Animals as amended by PermenLHK No. 20 Year 2018 in connection to Minister of Environment and Forestry Regulation No. 92 Year 2018. This change in the list of protected species of plants and animals are based under the consideration of the Scientific Authority.
- B. Assignment of 25 endangered animals which population are targeted for population programs during the 2015-2019 period based on Director General of KSDAE Decree No: SK.180/IV-KKH/2015 dated 30 June 2015 on Assignment of Twenty-Five Priority Endangered Animals for Population Increase by 10% at monitoring sites until 2019. The listed 25 endangered species in Indonesia have all been listed in the IUCN Red List of Threatened Species.

Indonesia has intended to increase the population of these 25 endangered species by a targeted increase of 10% from the baseline number recorded in 2013 at several monitoring sites, with details as follows:

1. Sumatran Tiger with the Strategy and Action Plan of Sumatran Tiger (*Panthera tigris sumatrae*) Conservation 2007-2017 which are in the process of extension ([Permenhut No. P.42 Year 2007](#))
2. Sumatran Elephant (*Elephas maximus sumatrensis*) with the Strategy and Action Plan for Sumatra and Borneo Elephant Conservation 2007-2017 ([DJPHKA-KLHK, 2007](#))
3. Rhinoceros (*Rhinoceros sondaicus*, *Dicerorhinus sumatrensis*) with the Strategy and Action Plan of Rhino Conservation 2007-2017, currently in the process of extension ([Permenhut No. 43 Year 2007](#))
4. Bull (*Bos javanicus*) with the Strategy and Action Plan of Banteng (*Bos javanicus*) Conservation 2010-2020 ([Permenhut No. P.58 year 2011](#))
5. Gibbon (*Hylobates moloch*, *Hylobates klossii*, *Hylobates agilis*) with the Strategy and Action Plan of Javan Gibbon (*Hylobates*

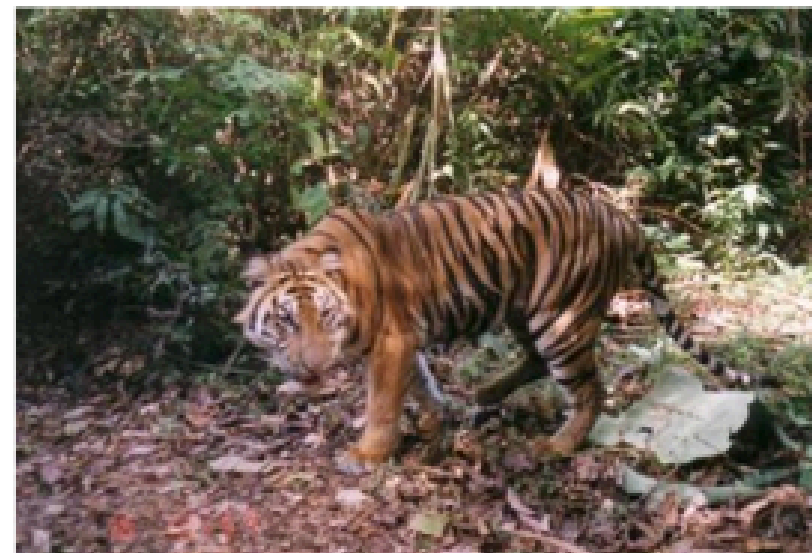
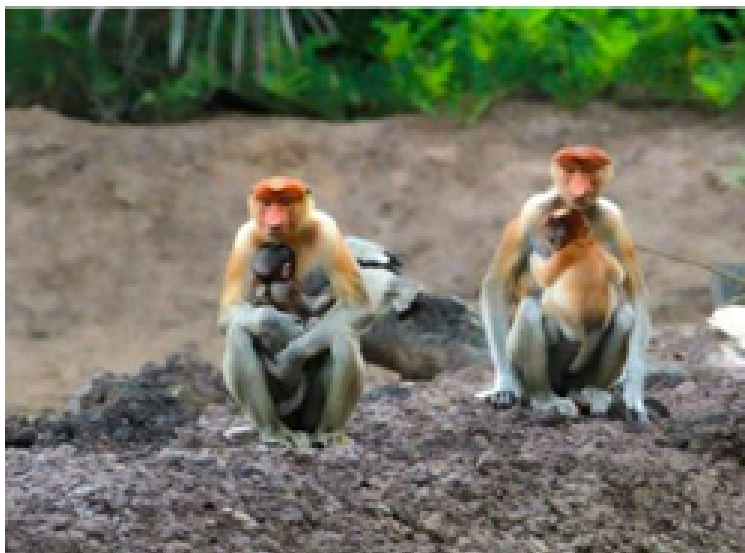
- moloch*) Conservation 2016-2026 (PermenLHK No. P.57 Year 2016)
6. Orangutan (*Pongo pygmaeus*, *Pongo abelii*) with the Strategy and Action Plan of Orangutan Indonesia 2007-2017, currently in the process of extension ([Permenhut No. P.53 Year 2007](#))
 7. Proboscis Monkey (*Nasalis larvatus*) with the Strategy and Action Plan of Bekantan (*Nasalis larvatus*) Conservation 2013-2022 ([Permenhut No P.56 year 2013](#))
 8. Komodo dragon (*Varanus komodoensis*)
 9. Bali Mynah (*Leucopsar rothschildi*)
 10. Maleo (*Macrocephalon maleo*)
 11. Babirusa with the Strategy and Action Plan of Babirusa (*Babyrousa babyrussa*) Conservation 2013-2022 ([Permenhut No P.55 year 2013](#))
 12. Anoa with the Strategy and Action Plan of Anoa (*Bubalus depressicornis* and *Bubalus quarlesi*) Conservation 2013-2022 ([Permenhut No P.54 year 2013](#))
 13. Javan Hawk Eagle with the Strategy and Action Plan of Javan Hawk Eagle (*Spizaetus bartelsi*) Conservation 2013-2022 ([Permenhut No P.58 year 2013](#))
 14. Tarsius (*Tarsius fuscus*)
 15. Celebes Crested Macaque (*Macaca nigra*, *Macaca maura*)
 16. Cockatoo (*Cacatua sulphurea*, *C. mollucensis*, *C. alba*, dan *C. galerita triton*)
 17. Javan leopard with the Strategy and Action Plan of Javan Leopard (*Pantheras pardus melas*) Conservation 2016-2026 ([PermenLHK No P.56 year 2016](#))
 18. Bawean Deer (*Axis kuhlii*)
 19. Bird-of-Paradise (*Macgregoria pulchra*, *Paradisaea raggiana*, *Paradisaea apoda*, , *Paradisaea rubra*, *Cicinnurus regius*, *Seleucidis melanoleuca*)
 20. Surili (*Presbytis fredericae*, *Presbytis comata*)
 21. Sumba Hornbill (*Rhyticeros everetii*)
 22. Black-capped Lory (*Lorius domicella*, *Lorius lory*)
 23. Turtle (*Chelonia mydas*, *Eretmochelys imbricata*)
 24. Tree-kangaroo (*Dendrolagus mbaiso*)
 25. Rinjani scops owl (*Otus jolandae*)



Javan Hawk Eagle (*Nisaetus bartelsi*) in
Gunung Halimun Salak National Park



Yellow-crested cockatoo (*Cacatua
sulphurea*) (Photo by: Laiwangi
Wanggametti National Park)



C. Compilation of a roadmap for increasing the population of 25 priority endangered species, which comprises of.

1. Populations inventory and monitoring related to the number of individuals, number of nests, number of births and deaths of animals at the monitoring location.
2. Development of populations and habitats.
3. Conflict resolution.
4. Protection and safety of animals.
5. Community awareness, and
6. Rehabilitation and release

To date, extensive rehabilitation and release of endangered wildlife has been conducted. One notable example is the release of four individual orangutans (*Pongo pygmaeus*) from rehabilitation in Bukit Baka Bukit Raya National Park in September 2018. This release is the result of the rehabilitation process of more than 100 individual orangutans conducted by International Animal Rescue Indonesia in collaboration with Bukit Baka Bukit Raya National Park Management and West Kalimantan Regional Natural Resources Conservation Offices (DJKSDAE-KLHK, 2018a). There are other endangered wildlife species that have been released, including the Javan eagle (*Spizaetus bartelsi*) (DJKSDAE-KLHK, 2018b).



Released Orangutan (*Pongo pygmaeus*)
(Photo by DJ-KSDAE)



Released Javan Hawk Eagle (*Spizaetus bartelsi*) (Photo by DJ-KSDAE)

As a proof of real progress in this achievement of population growth target, in 2017 alone, nine births of endangered Indonesian wildlife species are recorded, including two tarsiers (*Tarsius fuscus*) in Bantimurung Bulusaraung National Park, South Sulawesi, one anoa (*Buballus*

sp.) in North Sulawesi, one female Sumatran elephant (*Elephas maximus sumatrensis*) in Aceh, three female Sumatran elephants, and one male Sumatran elephant in Way Kambas National Park, Lampung, and one Sumatran orangutan female (*Pongo abelii*) in Aceh. In addition, a new species, the Tapanuli orangutan (*Pongo tapanuliensis*) was identified in 2017 (MoEF, 2018, p. 103).

This population increase of 25 priority endangered species is also performed ex-situ by Conservation Agencies (LKs) engaging in the ex-situ conservation of plants and/or wildlives. LK serves the following functions:

- a. Controlled breeding and/or saving plants and animals while maintaining their species purity.
- b. A site for education, demonstration, temporary care, source of parental individuals and genetic reserves to support in-situ populations, recreational facilities, scientific research and development.

LKs are grouped into 2 types, i.e. public LKs and specific LKs. Public LKs may include animal parks, special animal parks, zoos, safari parks, zoological museums, and animal museums. As of 2017, there have been established 84 public LKs and 27 special LKs. Special LKs function as animal rescue centres and rehabilitation centres for endangered animals, including Sumatran tigers, parrots, orangutans, Javan gibbons, elephants, and dolphins (DJKSDAE-KLHK, 2018d, p. 56). Existing ex-situ wildlife conservation efforts have succeeded in breeding several endangered animals, including Sumatran tiger (*Panthera tigris sumatrae*) which have succeeded in giving birth to 2 tiger cubs in the animal park and the birth of an individual Anoa, an endangered species, which is one of Sulawesi's endemic species, at the Anoa Breeding Center.

In addition, efforts to maintain populations of endangered species, the Government also conducts activities in collaboration with several partners whose scope of activities, includes:

1. Populations inventory and monitoring related to the number of individuals, number of nests, number of births and deaths of animals at the monitoring location:
 - a. Research and monitoring of orangutan populations are carried out in the form of plant phenology monitoring.
 - b. Monitoring the population of the Javan rhinoceros using Video Trap 2014 - 2018, habitat management, landscape control, construction of second habitats, and monitoring Javan rhinoceros population health.
2. Development of populations and habitats:
 - a. Development of habitat and populations of bantengs and other endangered species in conservation areas. Activities carried out in the form of banteng breeding for conservation purposes, the study of banteng ecology, restoration and habitat enrichment, study

Javan leopards ecology, the study of dhole ecology, ecological studies of Javanese peacocks, and reintroduction of warty pigs.

- b. Protection of orangutan habitat forest areas. Activities carried out in the form of support for protection of Tanjung Puting NP, fire prevention and control and support for the development of nature tourism and environmental services.
- c. Protection and safeguarding of important habitat areas for birds, restoration of wild bird habitats and populations, research on wild birds and their habitats, increasing community participation in nature conservation and developing national and international cooperation to encourage partnerships in efforts to conserve nature.
- d. Protection and development of Sumatran tiger habitat and carbon potential valuation in Bukit Tiga Puluh National Park, protection of Sumatran tiger habitat in Keritang resorts and surrounding forests, and calculation of carbon stocks.

3. Community awareness and economic empowerment:

- a. Increased public knowledge and awareness regarding wild birds and their habitat as well as other endangered wildlife, and carried out protection of protected wild plants and animals, especially parrots, and economic empowerment of communities around the national park area.
- b. Development of wildlife-based ecotourism. Activities carried out in the form of building infrastructures, improvement of ongoing tourism management, and development of nature tourism infrastructure.
- c. Development of wildlife-based ecotourism.

Efforts to maintain and increase the priority species population of protected and/or threatened marine biota are carried out through increase of the number of protected, conserved, and/or sustainably utilized marine biodiversities (Governmental Regulation No. 60 year 2007). The progress that have been made as of 2017 are (DJPRL-KLHK, 2018):

- 1. Establishment of 20 marine biota species as protected and/or threatened through implementation of full protection status, limited protection status, or trade regulation through utilization quotas. Management efforts are evaluated in 3 management levels, which are:
 - a. **Bronze Level**, which indicates that for a certain biota species, efforts has been conducted to collect data on distribution and population, to determine protection status, utilization rules, and that a regulation dissemination has been carried out to raise public awareness.

- b. **Silver Level**, which indicates that for a certain biota species, a management plan containing strategy and action plan in the management efforts to be carried out by various parties has been put in place.
 - c. **Gold Level**, which indicates that for a certain biota species, the relevant management plan has been implemented and the population has been maintained, and on top of that being economically useful for the surrounding community.
2. The achievement on the management of 20 priority protected and/or threatened marine biota species are as follows:
- a. Turtles (*Chelonia mydas*, *Natator deprssus*, *Lepidochelys olivacea*, *Eretmochelys imbricata*, *Demochelys coriacea*, *Caretta caretta*), with full protection status, Strategy and Action Plan of Turtles Conservation 2016-2020, and Gold Level management. KKP has issued a Circular Letter to Governors, Regents/Mayors, Heads of Provincial and Regency/City KP Offices, UTP scope of KKP No. 526/MEN-KP/VIII/2015 on Implementation of Protection on Sea Tutrles, Its Eggs, Body Parts, and/or Derivative Products. The 6 protected species are Green Turtle (*Chelonia mydas*), Hawksbill Turtle (*Eretmocheyls imbricata*), Loggerhead Sea Turtle (*Caretta caretta*), Leatherback Sea Turtle (*Dermochelys coriacea*), Olive Ridley Sea Turtle (*Lepidochelys olivacea*), Flatback Sea Turtle (*Natator depressa*).
 - b. Whale Shark (*Rhincodon typus*), with the status of full protection and Gold Level management,
 - c. Manta Rays (*Manta spp.*), with the status of full protection, Strategy and Action Plan of Manta Rays Conservation 2016-2020 and Gold Level management,
 - d. Hard Corals, with Apendiks II CITES, protection Strategy and Action Plan of Hard Corals Conservation 2017-2021 and Gold Level management,
 - e. Humphead wrasse (*Cheilinus undulatus*), with the status of limited protection, Strategy and Action Plan of Humphead wrasse Conservation 2016-2020 and Gold Level management,
 - f. Toli Shad (*Tenualosa ilisha*), with the status of limited protection, Strategy and Action Plan of Toli Shad Conservation 2017-2021 and Gold Level management,
 - g. Dugong (*Dugong dugon*), Strategy and Action Plan of Dugong Conservation 2017-2021,
 - h. Bamboo Coral (*Isis hippuris*), with the status of limited protection and National Action Plan 2016-2020,
 - i. Hammerhead Shark (*Sphyrna spp.*) and Oceanic whitetip shark (*Carcharhinus longimanus*), prohibited to be exported from Indonesian water, National Action Plan of Conservation and Management of Shark and Rays 2016-2020,
 - j. Sea Horses (*Hippocampus spp.*), National Action Plan of Sea Horses Conservation 2016-2020,
 - k. Banggai Cardinal Fish (*Pterapogon kauderni*), National Action Plan of Banggai Cardinal Fish Conservation 2017-2021,
 - l. Freshwater Eels, *Sidat*, (*Anguilla spp.*), with National Action Plan of *Sidat* Conservation 2016-2020,

- m. Whales and Dolphins, with the status of full protection and National Action Plan of Cetacea Conservation Indonesia 2016-2020,
- n. Asiatic Softshell Turtle (*Amyda cartilaginea*),
- o. Arowana (*Scleropages* spp.), with the status of full protection,
- p. Top Shell Snail, *Lola*, (*Throculus niloticus*), with the status of full protection and National Action Plan of *Lola* Conservation 2016-2020,
- q. Giant clam (*Tridacna* spp.), with the status of full protection and National Action Plan of *Giant clam* Conservation 2016-2020,
- r. Ocean Sunfish (*Molidae mola*).
- s. Mobula Ray (*Mobula* spp.).
- t. Sea cucumber.



Dugong (*Dugong dugon*) (Photo by
Directorate of Marine Biodiversity
Conservation)



Banggai Cardinal Fish (Photo by
Directorate of Marine Biodiversity
Conservation)

Several groups of biota species have been established whose utilization is regulated by quota, i.e.:

- a. Humphead wrasse (*Cheilinus undulatus*)
- b. Sea Horses (*Hippocampus* spp.)
- c. Hammerhead Shark (*Sphyrna* spp.)
- d. Arowana (*Scleropages* spp.)
- e. Top Shell Snail (*Rochia nilotica*)
- f. Giant clam (*Tridacna* spp.)

In the implementation of priority species management, there have been collaborations with various parties, including through the management of endangered species. Some of the efforts that have been made i.e.:

1. Increased handling capacity of bycatch which consists of endangered, threatened and protected species (ETP),
2. Development of ETP bycatch mitigation technology
3. Initiation of monitoring of leatherback turtles nesting location - Buru Island
4. Availability of NPoA for turtle, cetacean and dugong conservation in Indonesia.
5. Mapping the distribution of population and habitat of whale sharks in Indonesian waters

Indicators and Activities

Indicator(s) used in this assessment

Assessment of the implementation progress of NT 12 in the IBSAP 2015-2020 is determined based on indicators set out in the IBSAP as well as indicators from other efforts supporting the implementation of activity groups of NT 12. Generally, each activity groups for NT 12 is assessed from several progress assessment indicators as part of Action Plan 3 of the IBSAP, i.e. 'Maintenance and preservation of biodiversity'. The number of priority endangered species being protected is 25 species (KLHK) for terrestrial biota, and 15 species (KKP) for marine biota; the number has increased to 20 marine species in 2018.

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Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

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Relevant websites, links, and files

Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia Nomor P.20/MENLHK/SETJEN/KUM.1/6/2018 tentang Jenis Tumbuhan dan Satwa yang dilindungi
 Laporan Kinerja Direktorat Jenderal Pengelolaan Ruang Laut 2017
 Statistik Direktorat Jenderal KSDAE 2013
 Rencana Strategis Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem 2015-2019
 Laporan Capaian Renja 2015 dan Kemajuan Capaian Renstra 2015-2019 Sampai Dengan Tahun 2015 Ditjen KSDAE
 Laporan Kinerja Direktorat Jenderal KSDAE 2015
 Statistik Direktorat Jenderal KSDAE 2016
 Pelepasliaran empat individu orangutan hasil rehabilitasi di Taman Nasional Bukit Baka Bukit Raya
 Kegiatan pelepasliaran elang Jawa di TWA Telaga Patengan
 Laporan Kinerja Direktorat Jenderal KSDAE 2017
 Statistik Direktorat Jenderal KSDAE 2017
 Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2015-2020
 Rencana Strategis Kementerian Kelautan dan Perikanan Tahun 2015-2019
 KKP Website
 The State of Indonesia's Forest 2018

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the implementation progress of NT 12 is assessed 'based on comprehensive evidence'. Such consideration for the assessment are, among others:

1. The progress of implementation efforts indicator of National Target 12, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ and SAKIP.
2. LKJ and SAKIP are comprehensive reports containing complete and detailed activities and achievements.

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the Presidential Regulation No. 29 Year 2014 on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

[Undang-Undang Nomor 25 Tahun 2004 tentang Sistem Perencanaan Pembangunan Nasional](#)

[Peraturan Pemerintah Nomor 39 Tahun 2006 tentang Tata Cara Pengendalian dan Evaluasi Pelaksanaan Rencana Pembangunan](#)

National Target 13: Implementation of system development in nurseries, genetic breeding and domestication of wildlife as well as the breeding of wild animals



2018 - On track to achieve target

Targets

National Target 13: Implementation of system development in nurseries, genetic breeding and domestication of wildlife as well as the breeding of wild animals

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 13 is: Implementation of system development in nurseries, genetic breeding and domestication of wildlife as well as the breeding of wild animals.

Based on the IBSAP 2015-2020 document, the achievement of NT 13, an action plan on maintenance and preservation of biodiversity is established through **improving the quantity and quality of biodiversity seedlings and seeds of biological sources** with indicators of a number of seedlings and seeds ([KemenPPN/BAPPENAS, 2016](#), p. 248).

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Activities supporting the achievement of NT 13 includes:

1. Forestry sector, which are:

a. Breeding of wild plants and animals: The number of breeders of natural plants and wild animals is 1,018 as of 2017, a 37% increase from that of 2013. Breeding permit may be granted for natural plants and wildlife, both protected and unprotected. The operational breeding units breed Anthozoa, Crustaceans, Aves, Crocodiles, Mammals, Plants, Seahorses, Molluscs, Reptiles/Amphibians, Insects and Pisces. While the development on the number of breeding units of natural plants and wildlife based on commodity groups is presented in table 8 ([DJKSDAE-KLHK, 2018a](#), [DJKSDAE-KLHK, 2018b](#), [DJKSDAE-KLHK, 2016](#); [DJKSDAE-KLHK, 2014](#)).

Table 8. The development of the number of wild plant and animal breeding units

No	Biota	Number of breeders (Unit)	
		2013	2017
1	Arthozoa	80	81
2	Anthropoda	3	8
3	Aves	218	428
4	Crocodile	34	24
5	Insecta	6	8
6	Sea Horses	4	2
7	Mamalia	300	273
8	Mollusca	1	1
9	Pisces	65	104
10	RAM Pet	7	62
11	Plants	29	28
	Total	744	1018

b. Conservation agencies: In 2015, there are 68 LK units ([DJKSDAE-KLHK, 2016](#), pp. 47-51); this increased to 84 LK units in 2017 ([DJKSDAE-KLHK, 2018b](#), pp. 52-55).

2. Marine and fisheries sector:

a. In marine and fisheries sector through Minister of Marine Affairs and Fisheries Decree No. 20 Year 2015, fish breeding networks have been established to increase the effectiveness and efficiency of coordination in fish breeding activities to support the success in producing superior parents and high-quality seeds (Kemen KP, 2015).

b. Applied technological engineering in the field of cultivation is also carried out to maintain the sustainability of germplasm, wherein the period of 2014 to 2016, 366 engineering technologies have been produced.

c. A total of 207 cultivation areas of seaweed seedlings have been built in the period 2016-2017.

d. To enrich the varieties of fish circulating in the community, new varieties of fish have been produced, which are the result of breeding or domestication and have been released. The varieties of fish that have been released between 2015 and 2018 amounted at 30 varieties (URL: <https://kkp.go.id/brsdm/sentraki/page/1394-data-varietas-ikan>), which are among others:

1. Siamese catfish (*patin perkasa*) (KepmenKP No 75 year 2018),
2. Rainbow kurumoi fish (KepmenKP No 57 year 2018)
3. Giant gourami (*gurami sago*) (KepmenKP No 56 year 2018)
4. *Ikan mas punten* (KepmenKP No 55 year 2018)
5. Kissing gourami (*tambakan takhasi*) (KepmenKP No 54 year 2018)
6. *Ikan tawes jois* (KepmenKP No 53 year 2018)
7. Milkfish (*bandeng gondol*) (KepmenKP No 52 year 2018)
8. Giant gourami (*gurami galunggung super*) (KepmenKP No 51 year 2018)
9. *Ikan nila nirwana III* (KepmenKP No 28 year 2016)
10. Common Carp (*Ikan mas marwana*) (KepmenKP No 27 year 2016)
11. Moonfishes (*kelabau*) (KepmenKP No 26 year 2016)
12. Common Carp (*Ikan mas jayasakti*) (KepmenKP No 25 year 2016)
13. Common Carp (*Ikan mas rajadanu*) (KepmenKP No 24 year 2016)
14. Common Carp (*Ikan mas rajadanu super rd*) (KepmenKP No 23 year 2016)

15. African cat fish (*Ikan lele mutiara*) ([KepmenKP No 77 year 2015](#))
16. *Ikan mas mantap* ([KepmenKP No 24 year 2015](#))
17. *Ikan gurami batanghari* ([KepmenKP No 19 year 2015](#))
18. Striped snakehead (*Ikan mas gabus haruan*) ([KepmenKP No 18 year 2015](#))

e. Efforts to improve the availability and quality assurance of main and superior broodstocks and seeds to support aquaculture production, the relevant Indonesian National Standards (SNI) has been established for broodstocks, seeds and seeds productions of several commodities, namely giant tiger prawn, whiteleg shrimp, blue shrimp, iridescent shark, jambal shark catfish, black tilapia, sinyonya carp, majalaya carp, bullfrog, tiger grouper, humpback grouper, red claw crayfish, kotoni seaweed seeds, milkfish, star pomfret, white snapper, brown-marbled grouper, African sharptooth catfish and white snapper ([Kemen KP, 2018a](#)).

f. In 2016 KKP handed over 181.97 million fish seeds consisting of freshwater, brackish water, and sea water commodities to assist cultivator groups of fish and seed for restocking, from a targeted number of 100 million fish seeds ([Kemen KP, 2017b](#)). In 2017 the same amounted to 177.56 million fish seeds ([Kemen KP, 2018b](#)).

3. Food and agricultural sector:

a. Efforts in developing and expanding seed and seedling logistics in the food and agriculture sector are, among others ([Kementan, 2016, 2018a](#)):

- 1) Structuring national institutions for seeding/nursery,
- 2) Protection, maintenance and utilization of national genetic resources (SDG) for the development of local superior varieties and assembling new superior varieties (VUB) of various important agricultural crops,
- 3) Strengthening breeders and plant seed supervisors,
- 4) Empowerment of breeders and locally based seed producers
- 5) Increasing the role of the private sector in building seed/nursery industries,
- 6) Development of seed industry for the independence of the national seed industry,

- 7) Provision of sources of plantation crops through the construction and maintenance of the parental plantations, as well as strengthening plantation crop seed business institutions,
- 8) Construction for the sustainability of priority livestock nurseries, such as cattle and broiler, and increased availability of calves and chicks through nursery systems, namely improving the quality of livestock calves and chicks, optimization of nursery institutions, certification, refining and crossing through artificial insemination technology and embryos transfer.

b. Efforts in developing seeding and nursery system as well as genetic breeding are as follows ([Kementan, 2018b](#)):

- 1) Precise and directed plant breeding program to produce high-quality superior seeds of various priority crop commodities for food, plantations, and forestry.
- 2) Production of high-quality seeds.
- 3) Facilitation of strengthening of seed/nursery institution,
- 4) Facilitation of seed breeders
- 5) Registration of new superior varieties (VUB) and local varieties
- 6) Certification and supervision of seed distribution

c. Policy and direction of activities relating to Genetic Resources (SDG) including institutional activities, research, education, exchange of germplasm, and regulation and sustainable use of genetic resources, as coordinated by the National Commission on Genetic Resources (Komnas SDG). Besides, Komnas SDG also carries out public awareness activities about the importance of preserving and utilizing genetic resources and analyzing the development of conservation and utilization of genetic resources to support agricultural development ([Kementan, 2006a](#)).

As plant genetic resources are so precious, priceless, and play an important role in breeding activities to obtain new superior plant varieties (VUB), its search, collection, preservation, utilization, and export & import of plant genetic resources are regulated in Minister of Agriculture Regulation (Permentan) No. 67 Year 2006 ([Kementan, 2006b](#)) and has been revised with Permentan No. 37 Year 2011 ([Kementan, 2011](#)). Meanwhile, in regard to protection of SDG, especially protection to prevent the possibility of the transfer of SDG out of the territory of Indonesia through irresponsible means, profit-producing utilization must conduct profit sharing, and thus transfer of SDG is carried out through Material Transfer Agreement as guided by Permentan No. 15 Year 2009 ([Kementan, 2009](#)). Institutionally, to date, Komnas SDG has

commissioned 27 Regional Commissions for Genetic Resources (Komda SDG) spread in 26 provinces and 1 city (Komda SDG, Tasikmalaya).

Inventory, exploration, and collection of local genetic resources for food crops, horticulture, and livestock have been widely carried out, both by the central government and local governments simultaneously in various provinces. Indonesian Center for Agricultural Biotechnology and Genetic Resources Research and Development (BB Biogen), Agriculture Research and Development Agency, Ministry of Agriculture has had a Germplasm Bank (<http://biogen.litbang.pertanian.go.id/bank-plasma-nutfah>) to collect various types of plant SDGs, especially food crops SDG. As of 2018, the total collection of managed SDGs in Agricultural Germplasm Banks in BB Biogen is 10,790 accessions which include: 3,223 accessions of rice, 94 accessions of wild rice, 1,279 accessions of corn, 255 accessions of sorghum, 12 accessions of *hanjeli* (job's tears), 9 accession of *jawawut* (foxtail millet), 6 accessions sesame, 83 accessions of wheat, 888 accessions of soybean, 821 accessions of peanut, 1,058 accessions of mung bean, 139 accessions of black-eyed pea, 69 accessions of Bogor nut (Bambara nut), 13 accessions of pigeon pea, 17 accessions of hyacinth bean, 9 accessions of velvet bean, 7 accession of jack bean, 46 accession rice beans, 88 accession of winged bean, 556 accession cassava, 1,364 accession of cassava, 245 accessions taro, 126 accession of *belitung* (arrowleaf elephant ear), 34 accession of *patat* (arrowroot), 63 accession of *ganyong* (canna), 17 accession of lesser yam, 14 accession of *gadung* (intoxicating yam), 20 accession of purple yam, 2 accession of elephant foot yam, as well as 233 accessions of eggplant and its wild relatives. In addition, there is a collection of 1,404 microbial agricultural SDGs, which consist of 1,259 bacteria accessions, 98 fungi accessions, and 48 virus accessions. Collection of SDG for food crops is also stored in various regions, such as in Central Java (Rustini et al., 2015), Aceh Province (Mirza et al., 2015) and Bone Bolango Regency Gorontalo Province (Asaad dan Sija, 2015).

d. Research and development on the application of biotechnology in plant breeding and utilization of genetic resources to support sustainable bio-industrial agricultural systems carried out by the Indonesian Center for Agricultural Biotechnology and Genetic Resources Research and Development (BB Biogen). The target of BB Biogen's activities is to increase innovation in the management and conservation of genetic resources and sustainable biotechnology-based agricultural production systems. The SDG characterization and evaluation targets are 1,340 accessions every year and 19 plants estimated-superior breeding line cumulatively until 2019 (BPPP, 2015). The progress of this target until 2017 shows that the achievement of characterization and evaluation reached 1,560 accessions or reached 116% of the target and the estimated-superior breeding lines reached 22 lines or had exceeded 16% of the target in 2019 which amounted to 19 lines (BPPP, 2018). SDG evaluation was also carried out for the purpose of breeding material in VUB assemblies of various types of agricultural plants, especially major food crops such as rice, corn, and soybeans.

e. BB Biogen Balitbangtan has also characterized the national SDG of various strategic agricultural commodities (plants and livestock) at the genome level to characterize local and national SDG as a whole and comprehensively. Digital sequence information (DSI) data of SDG from 10 plant species (rice, corn, soybeans, red chilli, potatoes, banana, oil palm, cocoa, coconut, palm sugar, jatropha) and local Indonesian cattle are available in the database of Center for Genome Indonesian Agriculture (<http://genom.litbang.pertanian.go.id/>).

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 13 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 13. The progress indicators for every Activity Groups of NT 13 supporting Action Plan 3 of the IBSAP, i.e. 'Maintenance and preservation of biodiversity', are:

a. Activity groups in the forestry sector:

- i. Number of wild plants and animals breeders
- ii. Number of conservation agencies

b. Activity groups in marine and fisheries sector:

- i. Number of superior seeds distributed to communities
- ii. Number of superior varieties

c. Activity groups in the food and agricultural sector:

- i. Number of seeds production
- ii. Number of facilitations given to strengthen seeds/seedlings institution,
- iii. Number of facilitation of seeds breeder
- iv. Number of new superior variety (VUB) registrations

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- v. Number of certification and monitoring of seeds/seedlings distribution
- vi. Number of characterized, evaluated, and documented SDG
- vii. The number of lines of expected superior crops

Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

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Relevant websites, links, and files

[Inventarisasi sumber daya genetik tanaman lokal Kabupaten Bone Bolango Provinsi Gorontalo. Prosiding Seminar Nasional Sumber Daya Genetik Pertanian “Pengelolaan Sumber Daya Genetik Lokal Sebagai Sumber Pertumbuhan Ekonomi Daerah.](#)
[Laporan Kinerja Balai Besar Penelitian dan Pengembangan Bioteknologi dan Sumber Daya Genetik Pertanian 2017](#)
[Rencana Strategis Balai Besar Penelitian dan Pengembangan Bioteknologi dan Sumber Daya Genetik Pertanian 2015-2019.](#)
[Laporan Kinerja Direktorat Jenderal KSDAE 2017](#)
[Statistik Direktorat Jenderal KSDAE 2017](#)
[Statistik Direktorat Jenderal KSDAE 2015](#)
[Statistik Direktorat Jenderal KSDAE 2013](#)
[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)
[SNI Perbenihan](#)
[Laporan Tahunan Kementerian Kelautan dan Perikanan 2017](#)
[Rencana Strategis Kementerian Kelautan dan Perikanan year 2015-2019](#)
[Laporan Tahunan Kementerian Kelautan dan Perikanan 2016](#)
[Keputusan Menteri Kelautan dan Perikanan Republik Indonesia No 20/KEPMEN-KP/2015 tentang jejaring pemuliaan ikan.](#)

[Kepmen KKP Nomor 75/KEPMEN-KP/2018 tentang pelepasan ikan patin perkasa](#)
[Kepmen KKP Nomor 57/KEPMEN-KP/2018 tentang pelepasan ikan rainbow kurumoi.](#)
[Kepmen KKP Nomor 56/KEPMEN-KP/2018 tentang pelepasan ikan gurami sago.](#)
[Kepmen KKP Nomor 55/KEPMEN-KP/2018 tentang pelepasan ikan mas punten. URL](#)
[Kepmen KKP Nomor 54/KEPMEN-KP/2018 tentang pelepasan ikan tambakan takhasi.](#)
[Kepmen KKP Nomor 53/KEPMEN-KP/2018 tentang pelepasan ikan tawes jois.](#)
[Kepmen KKP Nomor 52/KEPMEN-KP/2018 tentang pelepasan ikan bandeng gondol.](#)
[Kepmen KKP Nomor 51/KEPMEN-KP/2018 tentang pelepasan ikan gurami galunggung super.](#)
[Data Varietas Ikan](#)
[Rencana Strategis Pengembangan Perbenihan Hortikultura year 2015-2019](#)
[Laporan Kinerja Direktorat Perbenihan Hortikultura year 2017](#)
[Rencana Strategis Kementerian Pertanian 2015-2019](#)
[Peraturan Menteri Pertanian Nomor 37/Peremntan/OT.140/7/2009 tentang pelestarian dan pemanfaatan sumber daya genetik tanaman.](#)
[Peraturan Menteri Pertanian Nomor 15/Permentan/OT.140/3/2009 tentang pedoman penyusunan perjanjian pengalihan material \(Material Transfer Agreement\).](#)
[Keputusan Menteri Pertanian Nomor 734/Kpts/OT.140/12/2006 tentang Pembentukan Komisi Nasional Sumber Daya Genetik](#)
[Peraturan Menteri Pertanian Nomor 67/Peremntan/OT.140/12/2006 tentang pelestarian dan pemanfaatan sumber daya genetik tanaman](#)
[Badan Litbang Pertanian. Balai Besar Biogen. Bank Plasma Nutfah. Kementan Website](#)
[Badan Litbang Pertanian. Balai Besar Biogen. Pusat Genom Pertanian Indonesia. Kementan Website](#)
[KKP Website](#)
[Pengelolaan sumber daya genetik tanaman pangan di Provinsi Aceh.](#)
[Inventarisasi, eksplorasi, dan upaya koleksi sumber daya genetik tanaman pangan Jawa Tengah.](#)

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the progress of implementation of NT 13 is assessed 'based on comprehensive evidence'. Such consideration for the assessment in this confidence level are:

1. The progress of implementation efforts indicator of National Target 13, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ and SAKIP.
2. LKJ and SAKIP are comprehensive reports containing complete and detailed activities and achievements.

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the [Presidential Regulation No. 29 Year 2014](#) on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings,

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discussions, or conferences).

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020](#)

[Undang-Undang Nomor 25 year 2004 tentang Sistem Perencanaan Pembangunan Nasional.](#)

[Peraturan Pemerintah Nomor 39 year 2006 tentang Tata Cara Pengendalian dan Evaluasi Pelaksanaan Rencana Pembangunan.](#)

National Target 14: Improved functionality of integrated ecosystems to ensure the improvement of essential services (water, health, livelihoods and tourism)



2018 - On track to achieve target

Targets

National Target 14: Improved functionality of integrated ecosystems to ensure the improvement of essential services (water, health, livelihoods and tourism)

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 14 is: Improved functionality of integrated ecosystems to ensure the improvement of essential services (water, health, livelihoods, tourism) supporting Aichi Biodiversity Target (ABT) 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

Biodiversity conservation is not only limited to efforts to protect the biodiversity potential but also related to efforts to utilize biodiversity for social and economic interests in a sustainable manner Based on IBSAP 2015-2020 document, achievement of NT 14 is carried out through the Action Plan of Development of Biodiversity Utilization which is cross-sectoral in nature and includes several activity groups.

1. Activity groups in the environment and forestry sector, which are:

a. Utilization of environmental services from terrestrial conservation area: The targeted total amount for 2019 is 80 units of environmental services utilization within the conservation area. Progress in achieving the target of the utilization of environmental services until 2017 is 102 units (127.5%). Non-tax state revenues from conservation area environmental services in 2017 reached IDR 3.2 billion or IDR 11.5 billion cumulatively from 2015 to 2017. ([DJKSDAE-KLHK, 2018](#), p. 41).

b. Development of terrestrial ecotourism attraction:

The achievement of the target on development of terrestrial ecotourism attraction is measured by the total amount of issued Business Licenses for the Utilization of Natural Tourism Facilities (IUPSWA) and issued Business License for the Utilization of Natural Tourism Services (IUPJWA). As of 2017, 175 licenses have been issued out of the targeted 100 licenses for 2019. Non-tax state revenues from

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tourist visits to conservation areas in 2017 amounted to IDR 157 billion, representing an annual average increase rate of 15% (DJKSDAE-KLHK, 2018).

In addition, efforts to improve the function of integrated ecosystems to ensure the improvement of important services (water, health, livelihoods, tourism), the Government also cooperates with several Civil Society Organizations (LSMs) and business players with various scopes of partnership, which includes:

- a) Yayasan Ekosistem Lestari (YEL, Foundation for Sustainable Ecosystem) with Directorate General of KSDAE which includes:
 - 1) Education programs and community awareness, community economic improvement programs, saving protected species, and protecting and restoring areas or ecosystems.
 - 2) Rescue activity of protected species, conducted through Sumatra Orangutan Quarantine Center Batumbelin, Deli Serdang, North Sumatra, which includes reception, medical examinations, upkeep, and release of captured orangutans. The release is conducted by the Sumatran Orangutan Reintroduction Center in Jantho, Aceh Besar, Aceh within the Jantho conservation area.
 - 3) Progress in protecting or restoring areas or ecosystems has been carried out in several locations: Bukit Lawang, Sekundur, Suaq, Jantho and Batang Toru.
- b) PT. Tirta Investama with Directorate General of KSDAE, which covers:
 - 1) Training of conservation cadres, community economic empowerment, community institutional strengthening, endemic crop cultivation for biodiversity development, utilization of non-timber forest products, and restoration of forest ecosystems.
 - 2) Forest ecosystem restoration activities include planting, plants maintenance, and continued with community empowerment, which includes, group strengthening activities, capacity building, and group business development. Until 2018, these activities have planted 89,200 trees.

2 Marine and fisheries sector includes:

- a. Development of marine tourism area in 28 Regencies/Cities across 14 Provinces. By early 2018, as much as 548 marine tourism spots have been developed, including those located within the 10 KKPNs (SAP Kep. Aru Tenggara, SAP Kep. Raja Ampat, SAP Kep.

Waigeo Sebelah Barat, TWP Gili Ayer, Gili Meno, Gili Trawangan, TWP Kapoposan, TWP Pulau Pieh, TWP Taman Laut Banda, TWP Pulau Padaido, Taman Wisata Kep. Anambas, TNP Laut Sawu) and 8 Regional Marine Protected Area (KKPDs (Alor, Nusa Penida, Kei, Raja Ampat, Mentawai, Pangumbahan; KKP, 2018b). LSM also provides some support, for example WWF-Indonesia that has managed to develop a Payment for Ecosystem Services (PES) system in Koon Island, Maluku Province. ([Kemen KP, 2018](#))

b. Utilization of coastal areas, oceans and small islands: With the aim of the availability of marine and fisheries infrastructure. Facilities and infrastructure built are tailored to the needs of the local community. As of 2017, realization of such utilization of coastal areas, oceans and small islands has been achieved for 52 islands out of the targeted 42 islands for 2019 (Kemen KP, 2017a, p. 98). The construction of facilities and infrastructure in 2017 includes: construction of floating docks in 4 regencies in 4 provinces, and assistance in productive economic facilities in 23 Regencies/Cities in 17 Provinces.

c. Product development and product processing business: In order to improve the quality and diversification of result of product processing, it is targeted that by 2019 a total of 28 new types of value-added marine and fishery products will be developed in the target location ([Kemen KP, 2017a](#)). In 2016, 40 varieties of value-added processed products were achieved in the target location. This achievement in 2016 has exceeded the target for 2019 ([Kemen KP, 2017b](#)).

d. Improvement of marine tourism business players compliance at 89%, in accordance with Permen KP No. 47/2016 on Utilization of Marine Protected Area and Director General of PSDKP Regulation No. 3/2017 on Technical Guideline on the Monitoring of Marine Tourism in Coastal Areas.

e. Facilitation for investments and economic developments in 15 small islands during 2014-2015.

f. Improvement of coastal resilience through infrastructure aids for the mitigation and adaptation to climate changes for 141 coastal villages and small islands since 2012.

g. Facilitation/restoration of economic development centers in 9 Coastal Areas.

h. Establishment of Zoning Plan and/or Masterplan and Business Plan as a reference for the benefit development and coastal development during 2015-2016 in 254 Marine and Coastal Area Locations.

i. Development of integrated marine and fisheries center in 13 coastal areas and small islands to improve the production of catch fisheries and boost economic growth in a sustainable manner.

j. Optimization on product development and processing business for marine and fisheries products through the development of 80 National Fish Logistic System facilities in the Collection and Distribution Center for Biopharmacological Development of seaweeds. In regard to maintaining quality, 2107 fish processing units (UPI) have obtained processing feasibility certificate (SKP) in 2017, an increase from 1084 UPIs in 2014. 265 Indonesian National Standards (SNIs) have also been issued for fisheries products.

3. Agricultural sector:

a. Management and conservation of reservoirs, retention basins, lakes, and other water storage buildings: Management and conservation of reservoirs/retention basins/channel reservoirs/long storage aims to improve and maintain water availability at the farming business level in addition to irrigation water for food crop commodities and reduce the risk of crop failure occurs due to drought in farming land during the dry season. As of 2017, 2,673 water conservation building units has been developed in 22 provinces and 147 regencies, representing 63.7% of the targeted number for 2019 at 4,020 units. ([Kementan, 2018a](#)).

b. Increase of production and productivity of sustainable plantation crops: through fostering and certification of organic farming villages are based on plantation commodities. In 2017, there have been 135 certified organic villages, or 90% of the targeted number of 150 villages for 2019 ([Kementan, 2018b](#)).

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 14 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 14. Generally, the progress indicators for every Activity Groups of NT 14 is assessed based on several progress indicators supporting Action Plan 2 of the IBSAP, i.e. 'Development of Biodiversity Utilization', are:

1. Number of business and Non-Tax State Revenue (PNBP);
2. Number of ecotourism destinations;
3. Number of protected water source;
4. Total area and number of essential area management plans;
5. Number of facilitated regional;
6. Total area and number of registered land;
7. Total area of land for development
8. Number of locations, certifications, and varieties of processed products

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Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

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Relevant websites, links, and files

[Laporan Kinerja 2017 Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem.](#)
[Rencana Strategis Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem year 2015-2019](#)

Laporan Kinerja Direktorat Jenderal Pengelolaan Ruang Laut, Kementerian Kelautan dan Perikanan 2017
 Rencana Strategis Kementerian Kelautan dan Perikanan year 2015-2019.
 Laporan Kinerja Direktorat Jenderal Penguatan Daya Saing Produk Kelautan dan Perikanan year 2016
 Laporan Kinerja 2017 Direktorat Irigasi Pertanian, Ditjen Prasarana dan Sarana Pertanian
 Laporan Kinerja 2017 Direktorat Perlindungan Perkebunan
 Rencana Strategis 2015-2019 Direktorat Perlindungan Perkebunan.
 Peraturan Menteri Kehutanan Nomor P.48 year 2010 tentang Pengusahaan Pariwisata Alam di Suaka Margasatwa, Taman Hutan Raya dan Taman Wisata Alam
 Peraturan Pemerintah Nomor 36 year 2010 tentang Pengusahaan Pariwisata Alam di Suaka Margasatwa, Taman Nasional, Taman Hutan Raya dan Taman Wisata Alam.
 Kisah Keberhasilan Pemulihan Ekosistem di Kawasan Suaka Alam dan Kawasan Pelestarian Alam Secara Partisipatif.

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the progress of implementation of NT 14 is assessed 'based on comprehensive evidence'. Such consideration for the assessment in this confidence level are:

1. The progress of implementation efforts indicator of National Target 14, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the [Presidential Regulation No. 29 Year 2014](#) on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

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Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020.](#)
[Undang-Undang Nomor 25 year 2004 tentang Sistem Perencanaan Pembangunan Nasional.](#)
[Peraturan Pemerintah Nomor 39 year 2006 tentang Tata Cara Pengendalian dan Evaluasi Pelaksanaan Rencana Pembangunan.](#)

National Target 15: Realization of conservation and restoration of degraded ecosystems in the region



2018 - On track to achieve target

Targets

National Target 15: Realization of conservation and restoration of degraded ecosystems in the region

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 15 is: Realization of conservation and restoration of degraded ecosystems in the region. NT 15 supports Aichi Biodiversity Target (ABT) 15 on restoration and resilience of ecosystem.

Based on the IBSAP 2015-2020, the implementation of NT 15 supports IBSAP Action Plan 2, i.e. 'Development of Biodiversity Utilization' through several Activity Groups (KK):

- i. Restoration of 250,000 ha of conservation ecosystem
- ii. Restoration of ecosystem outside conservation areas;

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The recovery activities can be differentiated into conservation efforts and ecosystem restoration conducted in the degraded terrestrial areas and degraded marine, coastal, and small islands.

I. Progress of conservation implementation and ecosystem restoration of degraded terrestrial areas:

1. Target for 2019 is the restoration of 100,000 ha of degraded conservation areas ecosystems.

Efforts of ecosystem restoration is conducted where conservation areas suffers form damage or degradation. The restoration of ecosystems that make up conservation areas is intended to restore the integrity of the ecosystem entirely, i.e. returning to its original condition or in accordance with the expected conditions in accordance with the objectives of conservation area management. In 2015 efforts to restore ecosystem has been performed, covering areas of 5,474 ha, while the same for 2016 covered 3,752 ha, and in 2017 it covered 16,718 ha, representing a 26% progress for restoration of degraded ecosystem within conservation area from the targeted number for 2019 at 100,000 ha. ([DJKSDAE-KLHK, 2018](#), [DJKSDAE-KLHK, 2017](#) and [DJKSDAE-KLHK, 2016](#)).

2. Conservation implementation and degraded terrestrial ecosystem restoration are also conducted in a participatory manner, whether involving government institutions, civil society organizations, the private sector and the general public, as follows:

a) Synergy of ecosystem restoration between governmentss, communities, and private sector in Paliyan Wildlife Sanctuary (SM). Special Region of Yogyakarta Province. The relevant activities include ecosystem restoration dedicated as a habitat for long-tailed monkey, which also saw the successful restoration of ecosystem for other species, such as porcupines, junglefowls, and several species of birds. The determinant factors of the success of ecosystem recovery in SM Paliyan includes careful study and planning, support and cooperation of committed parties, the presence of institutions established in the formation of the Paliyan Forum, and the community involved as partners.

b) Restoration of peat ecosystems in Sebangau National Park, Central Kalimantan Province, as an area with peat swamp forest ecosystem with high flora and fauna biodiversity. More than 166 species of flora, 35 species of mammals, 150 species of birds, and various reptiles have

been identified. Sebangau Area is the main habitat for key species, orangutan (*Pongo pygmaeus*) and proboscis monkey (*Nasalis larvatus*). Sebangau peat swamp forest area has been heavily degraded due to canal construction and forest clearing when the Sebangau NP area functioned as a HPH (forest concession licence) concession area for timber production.

Forest fires occurred in 2015 in the Sebangau NP create a large impact, comprising both tangible losses and death of flora and fauna. To overcome the degradation of peat swamp forest, some activities are carried out which includes improving the function of the water system of the peat ecosystem so that it can prevent fires; maintain the wetness of peat swamp forests, and facilitate rehabilitation and restoration of degraded areas by planting endemic species that are resistant to fire. The local community has been involved from the beginning in the restoration of the peat ecosystem activities because the Sebangau region has an important role as a source of livelihood for the surrounding community. The restoration of peat ecosystems in Sebangau NP also contributes to the improving habitat condition, marked by an increase in the population of key fauna species. Orangutan monitoring shows a population increase of 1.1% per year, from 5,400 individuals in 2015. Meanwhile, the population of proboscis monkey increased by 8% per year, from 154 individuals in 2017 ([Susmianto et al. 2017](#)).

3. Implementation of conservation and restoration of terrestrial ecosystems outside degraded conservation areas through the rehabilitation of protection forests. In the period of 2015 to 2017, the realization of protection forest rehabilitation activities reached 52,697 ha.

4. Reforestation has been done in the form of planting and making facilities for soil and water conservation. During the 2015 – 2017 period, forest and land rehabilitation has been performed on a total area of 599,783 ha, with 15,213 units of land and water conservation buildings. The community nursery was also encouraged to build community forests, whose standing stock fluctuated during the harvest period. The figure in 2017 is 20.13 million m³.

5. Ecosystem restoration is also performed on former logged-over areas through partnerships with private sector based on ecosystem restoration concession schemes. This concession is given to parties promising to restore the condition of logged-over areas to their original conditions in terms of structure, composition and biodiversity. The basic principle of ecosystem restoration concessions is to maintain forest functions, ensure protection and maintenance of forests, restore levels of biodiversity and non-biological diversity, optimize the use of non-timber forest products and environmental services, achieve sustainability and to facilitate rehabilitation. As of 2017, the ecosystem restoration concessions numbered at 16 units with a total area of 622,861.59 ha spread across 6 provinces, i.e. Riau, Bengkulu, Jambi, South Sumatra, West Kalimantan, Central Kalimantan and East Kalimantan (KemenLHK, 2018).

II. Implementation progress of conservation and restoration on degraded marine, coastal and small island ecosystems:

1. In 2015, the number of degraded coastal areas successfully restored reached 55 regions, while in 2016 there were 37 such regions, realizing 100% of target (Kemen KP, 2017). In 2017, the number of degraded coastal areas and small islands successfully restored is 25 areas out of the targeted 23 regions, representing a 109% achievement (Kemen KP, 2018).

2. Restoration of coastal and small islands ecosystem is conducted thorough the plantation of mangrove, coastal vegetation, and the development of Mangrove Restoration and Learning Center (PRPM). In 2015, 6,069,054 mangrove trees and 48,308 vegetation individuals were planted, while in 2016 there were 1,591,930 mangrove trees and 33,866 coastal vegetation individuals being planted (KKP, 2017; KKP, 2018a). The mangrove and coatsla vegetation plantation is spread across 25 Regencies in Indonesia as depicted in Figure 25.

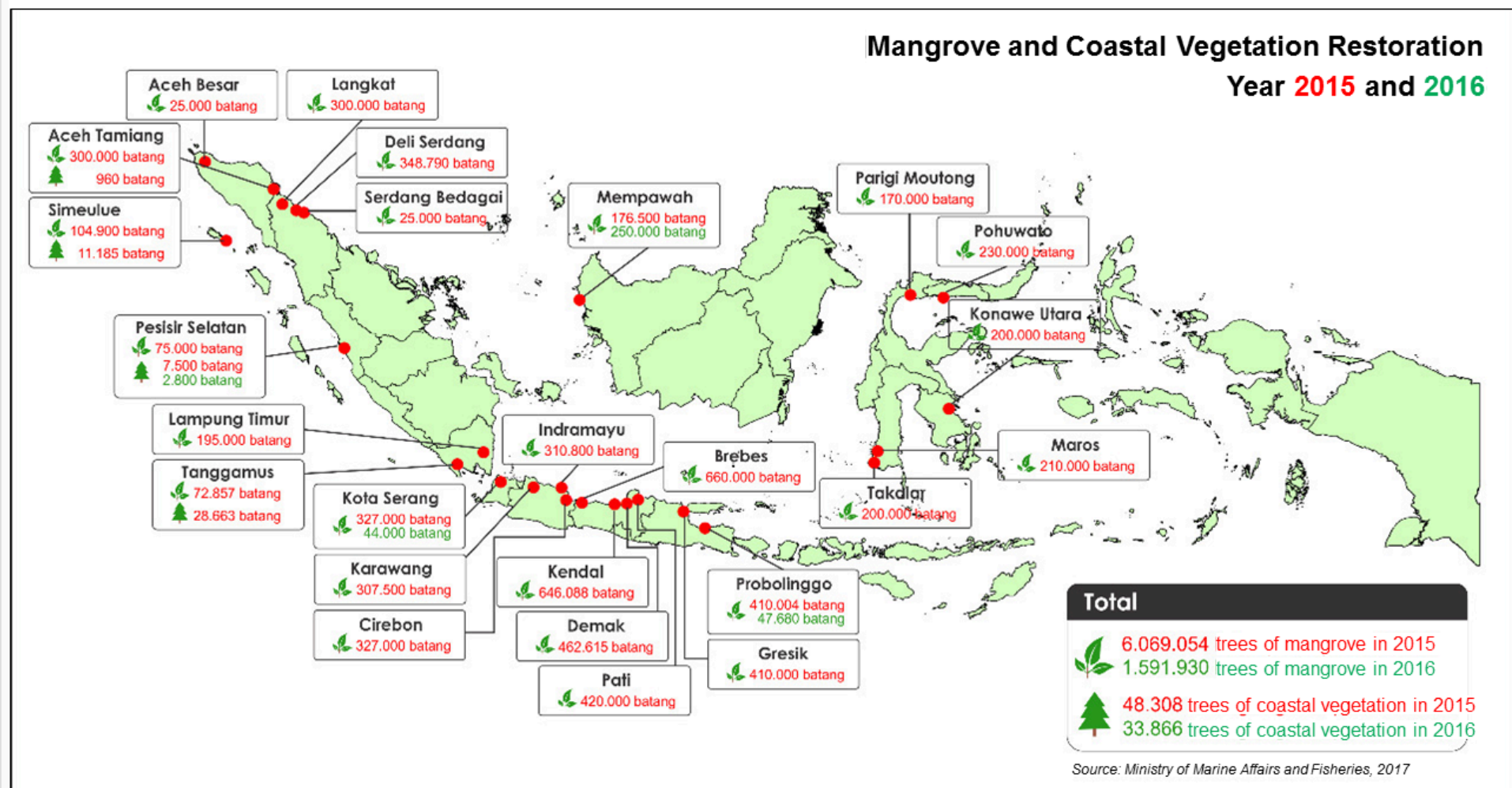


Figure 25. Mangrove and coastal vegetation restoration map for 2015 and 2016 (KKP, 2018a).

Mangrove and Coastal Restoration and Learning Center (PRPM) is developed as facilities for education, research, and tourism through the construction of supporting facilities/ infrastructure (mangroves tracking, viewing posts, seed centers both in-situ or ex-situ; Kemen KP, 2018, p. 52), which are located in several locations, some examples which have developed are Bekasi Regency, Indramayu, Pasuruan, Sinjai, Pangandaran, Simeuleu, Sangihe Islands, Sidoarjo, and Balikpapan City. URL: <https://jaskelreklamasi.wordpress.com/2016/06/29/profil-pusat-restorasi-dan-pembelajaran-mangrove/>

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 15 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 15. Generally, the progress indicators for every Activity Groups of NT 15 is assessed based on several progress indicators supporting Action Plan 2 of the IBSAP, i.e. 'Development of Biodiversity Utilization', are:

1. Restoration of 250,000 ha of conservation ecosystem
2. Restoration of ecosystem outside conservation areas;

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Any other tools or means used for assessing progress.

For implementation efforts conducted under the responsibility of civil society organizations, educational institutions, and/or business players; assessment on progress in target achievement refers to reports and/or publication material for each program and/or set of activities carried out by each party with differing issuance frequency (e.g. annual, quarterly report).

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

EN

Relevant websites, links, and files

Case study_Center for Mangrove Restoration and Learning (PRPM) Pangandaran Regency.pdf
 Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2015-2020.
 Peraturan Pemerintah Nomor 39 tahun 2006 tentang Tata Cara Pengendalian dan Evaluasi Pelaksanaan Rencana Pembangunan.
 Undang-Undang Nomor 25 tahun 2004 tentang Sistem Perencanaan Pembangunan Nasional.
 Profil Pembangunan Pusat Restorasi dan Pembelajaran Mangrove tahun 2016.
 Laporan Tahunan 2016 – Mengawali Restorasi Gambut Indonesia.
 Statistik Direktorat Jenderal KSDAE 2015.
 Statistik Direktorat Jenderal KSDAE 2016.
 Statistik Direktorat Jenderal KSDAE 2017.
 Laporan kinerja 2017 Kementerian Kelautan dan Perikanan.
 Statistik Lingkungan Hidup dan Kehutanan Tahun 2017.
 Kisah Keberhasilan Pemulihan Ekosistem di Kawasan Suaka Alam dan Kawasan Pelestarian Alam Secara Partisipatif.
 Indonesia's Peatland Restoration Agency (BRG).pdf

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the progress of implementation of NT 15 is assessed 'based on comprehensive evidence'. Such consideration for the assessment in this confidence level are:

1. The progress of implementation efforts indicator of National Target 15, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements.

EN

Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the [Presidential Regulation No. 29 Year 2014](#) on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

EN

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020.](#)
[Peraturan Pemerintah Nomor 39 year 2006 tentang Tata Cara Pengendalian dan Evaluasi Pelaksanaan Rencana Pembangunan.](#)
[Undang-Undang Nomor 25 year 2004 tentang Sistem Perencanaan Pembangunan Nasional.](#)

National Target 16: Implementation of the Nagoya Protocol and its derivative instruments through legislation and institutions at the central and local levels



2018 - On track to achieve target

Targets

National Target 16: Implementation of the Nagoya Protocol and its derivative instruments through legislation and institutions at the central and local levels

EN

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 16 is: Implementation of the Nagoya Protocol and its derivative instruments through legislation and the formation of implementation organizations at the central and local levels. NT 16 supports Aichi Biodiversity Target (ABT) 16 on Access to Genetic Resources and Fair and Equitable Sharing of Benefits of Arising from Their Utilization of the Convention on Biological Diversity.

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Based on the IBSAP 2015-2020, the implementation of NT 16 supports IBSAP Action Plan 2, i.e. 'Development of Biodiversity Utilization' through the following Activity Groups:

- i. Preparation of regulations regarding Nagoya Protocol;
- ii. Establishment of executive institutions relating to the implementation of Nagoya Protocol.

Protocol Nagoya has been ratified by the Government of Indonesia through Act No. 11 Year 2013 on Ratification of Nagoya Protocol on Access to Genetic Resources and Fair and Equitable Sharing of Benefits of Arising from Their Utilization of the Convention on Biological Diversity.

The regulation of access to genetic resources (SDG) and their utilization, especially in regard to preservation and utilization of plant genetic resources has been regulated in various laws and regulations by the Government of Indonesia prior to the ratification of the Nagoya Protocol. Preservation and utilization of plant genetic resources is regulated through preparation of Material Transfer Agreement through Minister of Agriculture Regulation (Permentan) No. 15 the Year 2009 ([Kementan, 2009](#)) for working unit in Agriculture Research and Development Agency, Regulation of Minister of Agriculture (Permentan) No. 37 Year 2011 ([Kementan, 2011](#)); Permentan No. 217 Year 2018 concerning National Commission on Genetic Resources; and Regulation of Head of Indonesian Institute of Sciences (LIPI) No. 9 Year 2014 ([LIPI, 2014](#)) for material transfer agreement in LIPI, and Regulation of Minister of Health (Permenkes) No. 657 Year 2009 concerning delivery and use of clinical specimens, biological material and information of its content ([Kemkes, 2009](#)). However, specific regulatory instruments for access to genetic resources and equitable and balanced distribution of benefits from the use of genetic resources over the Convention on Biological Diversity have not yet been regulated. Besides, recognition and efforts to protect traditional knowledge related to genetic resources and the utilization of the wealth of traditional knowledge, especially the distribution of benefits resulting from its utilization, also not yet regulated in the legislation. Therefore, there is a need for legislation which can cover the implementation of Nagoya protocol nationally as well as the establishment of its institutions.

1. Activity on preparing regulations regarding Nagoya Protocol,

Access regulation on genetic resources (SDG) of wildlife species and its access and benefit sharing (ABS) has been stipulated through Minister of Environment and Forestry PermenLHK No. P.2 Year 2018 concerning Access on Wildlife Species Genetic Resources and Benefit Sharing on its Utilization ([KemenLHK, 2018](#)).

This regulation is intended as a reference for:

- a. Stakeholders accessing the utilization of SDG and/or SDG Traditional Knowledge (PT) related to wildlife species.
- b. Provider of SDG and/or PT-SDG of wildlife species in providing PADIA (Prior Informed Consent) and prepare joint agreements on fair and equitable benefit sharing on the utilization of SDG and/or PT-SDG related to wildlife species.
- c. Competent national authorities in regard to granting of access permit to wildlife SDG.

The scope of the [KemenLHK](#) regulation (2018) includes access to SDGs and/or PT-SDG of wild species for non-commercial and commercial purposes, transfer of material, institutions, guidance and supervision, and sanctions. Wildlife species mentioned in this regulations are species of plants, animals, microorganism, or other sources that might still have the species purity or wild properties, whether the species live in its natural habitat (insitu), outside its natural habitat (exsitu), or being kept by a human.

2. Activity on establishment of executive institution relating to implementation of Nagoya Protocol,

Access to genetic resources (SDG) of wildlife species and benefit sharing on its use as for its organization has been regulated in [KemenLHK](#), (2018) which states that Minister who hold government matters in the fields of Environment and Forestry to appoints Director General who is given the task and responsible in the field of Natural Resources and Ecosystem Conservation as the Leader of National Activities for Nagoya Protocol and Competent National Authority in the field of forestry who are responsible in issuing access permit which includes permit to get and/or bring and/or utilize SDG and/or PT-SDG of wildlife species.

For implementation and effectivity of access to genetic resources (SDG) of wildlife species and benefit sharing on its utilization, several things have been developed, which are:

1. Access and Benefit Sharing Clearing House (ABSCH) is the main tool to facilitate Nagoya Protocol implementation through the improvement of the transparent procedure and legal certainty for access and distribution of benefits for the use of SDGs and can monitor the use of SDGs. Genetic resources management is done through Access & Benefit Sharing Clearing House with Secretariat in Directorate Biodiversity Conservation, Directorate General of Natural Resources and Ecosystem Conservation, Ministry of Environment and Forestry with the Indonesia ABSCH website accessible at <http://www.abschindonesia.menlhk.go.id>

2. Access permit to obtain and/or bring and/or utilize SDG and/or PT-SDG of wildlife species is granted by Competent National Authority in the Forestry field. Procedure of permit for the use of SDG can be obtained through Online Permit System of SDG Utilization (SPOPSDG) that can be accessed in the following website: <http://www.graccess.co.id/auth>.

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 16 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 16. Generally, the progress indicators for every Activity Groups of NT 16 is assessed based on several progress indicators supporting Action Plan 2 of the IBSAP, i.e. 'Development of Biodiversity Utilization', are:

1. Number of regulations relating to Nagoya Protocol;
2. Effective institutionalization to implement Nagoya Protocol.

EN

Any other tools or means used for assessing progress.

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

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Relevant websites, links, and files

[Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.2/MENLHK/SETJEN/KUM.1/1/2018 tentang akses pada sumber daya genetik spesies liar dan pembagian keuntungan atas pemanfaatannya.](#)
[Peraturan Menteri Pertanian Nomor 15/Permentan/OT.140/3/2009 tentang pedoman penyusunan perjanjian pengalihan material \(Material Transfer Agreement\).](#)
[Peraturan Menteri Pertanian Nomor 37/Peremntan/OT.140/7/2009 tentang pelestarian dan pemanfaatan sumber daya genetik tanaman.](#)
[Permenkes Nomor 657 year 2009 tentang pengiriman dan penggunaan spesimen klinik, materi biologik dan muatan informasinya.](#)

Peraturan Kepala Lembaga Ilmu Pengetahuan Nomor 9 year 2014 tentang Pedoman Perjanjian Pengalihan Material di Lingkungan Lembaga Ilmu Pengetahuan Indonesia.
Sistem Perijinan Online Akses dan Pemanfaatan Sumberdaya Genetik

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the progress of implementation of National Target 16 is assessed 'based on comprehensive evidence'. Such consideration for the assessment in this confidence level are:

1. The progress of implementation efforts indicator of National Target 16, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements.

EN

Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

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Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the

[Presidential Regulation No. 29 Year 2014](#) on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences).

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020.](#)

National Target 17: Implementation of the new IBSAP at various levels



2018 - On track to achieve target

Targets

National Target 17: Implementation of the new IBSAP at various levels

EN

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 17 is: The implementation of the new IBSAP at various levels. NT 17 supports Aichi Biodiversity Target (ABT) 17 on the development and adoption of policy instruments through effective, participatory implementation as well as updates on action plan on biodiversity management.

Based on the IBSAP 2015-2020, the implementation of NT 17 supports IBSAP Action Plan 4, i.e. 'Capacity Building of Biodiversity' through the following Activity Groups (KK):

- i. Preparation and establishment of relevant institutions for the IBSAP 2015-2020;
- ii. Performance of monitoring and evaluation (monev) and reporting on the implementation of the IBSAP 2015-2020.

National Target 17 is implemented through activities relating to preparation and establishment of relevant institutions to IBSAP 2015-2020 and the reporting on the implementation of the IBSAP 2015-2020. Implementation of the IBSAP at a national level may take place in accordance with the plan to achieve the national target set out in IBSAP because the activity groups planned in IBSAP has been implied in planning documents of Ministries/Agencies. Meanwhile, for planning and implementation of regional action strategy and planning, several regional governments have made biological diversity profile and master plan for regional biodiversity management. As an institution, IBSAP just becomes functioned and its implementation has been started since 2015.

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For whole biodiversity management communication, whether for research on biodiversity exploration, biodiversity identification and condition update, development of biodiversity utilization, partnership in biodiversity management, even for communication for updates on biodiversity management policies as a whole are accommodated in Indonesian Biological Diversity Clearing House Mechanism. Working Groups on Indonesian Biological Diversity Clearing House Mechanism (Balai Kliring Keanekaragaman Hayati Indonesia - BKKHI) is appointed by the Minister of Environment and Forestry Decree No. SK. 755/MenLHK/KSDAE/KUM.O/9/2016. BKKHI (BKKHI, 2018) serves the following functions:

1. Reconciling between users and providers of biodiversity data or information.
2. Monitoring the implementation of biodiversity convention, including the IBSAP implementation.
3. Facilitating access to data and information exchange among stakeholders in the field of biodiversity at the national, regional and international level.
4. Providing assistance to familiarize and efforts to implement IBSAP with national targets.
5. Referencing services in the facilitation of scientific and technical cooperation at a local, national, or global level.

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 17 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 17. Generally, the progress indicators for every Activity Groups of NT 17 is assessed based on several progress indicators supporting Action Plan 4 of the IBSAP, i.e. 'Capacity Building of Biodiversity', which are:

1. Functionality of new IBSAP institution
2. Monev and reporting documents

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Any other tools or means used for assessing progress.

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of

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Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

Relevant websites, links, and files

Balai Kliring Keanekaragaman Hayati Indonesia Website
Profil Keanekaragaman Hayati dan Ekosistem Kota Surabaya 2018.
Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2015-2020.

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the progress of implementation of NT 17 is assessed 'based on comprehensive evidence'. Such consideration for the assessment in this confidence level are:

1. The progress of implementation efforts indicator of National Target 17, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements.

EN

Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives

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of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the [Presidential Regulation No. 29 Year 2014](#) on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020.](#)

National Target 18: Development of local wisdom and innovations as well as bioprospecting capacity building for the conservation and sustainable utilization of biodiversity



2018 - On track to achieve target

Targets

National Target 18: Development of local wisdom and innovations as well as bioprospecting capacity building for the conservation and sustainable utilization of biodiversity

EN

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 18 is: Development of local wisdom and innovations as well as bioprospecting capacity building for the conservation and sustainable utilization of biodiversity. NT 18 supports Aichi Biodiversity Target (ABT) 18 on traditional knowledge, innovation, and implementation of customary communities' wisdom in regard to conservation and sustainable utilization of biodiversity.

Based on the IBSAP 2015-2020, the implementation of NT 18 supports IBSAP Action Plan 2, i.e. 'Development of Biodiversity Utilization' through the following Activity Groups (KK):

- i. Empowerment of Isolated Customary Communities (KAT);
- ii. Utilization of local wisdom supporting sustainable management and harvesting;

EN

iii. Preservation of traditional history and values.

This target is achieved through Action Plan on Development of Biodiversity Utilization with the activity groups on the empowerment of remote *adat* (customary) community; and use of local wisdom to support sustainable biodiversity management and harvesting.

Local wisdom and traditional knowledge are one of the main criteria of the existence of customary law communities. Customary law communities are the leader and owner of local wisdom and traditional knowledge. With its wisdom, customary law communities have proven to protect environmental sustainability for over generations. The use of local wisdom, which supports sustainable biodiversity management and harvesting, has been highly practised but the information about that are still scattered. Some of the examples of local wisdom in forest management is local wisdom of Kasepuhan Karang customary law community (Nugroho, 2017) whereas that for sustainable biodiversity management and harvesting is *sasi* in Raja Ampat (Boli, 2017).

Kasepuhan Karang community is administratively located in Jagaraksa Village, Muncang District, Lebak Regency, Banten Province, and the community possess local wisdom in forest management (*leuweung*). Their forest management uses traditional zonation which is still adhered to this day. Traditional zonation divides the forest into *leuweung kolot*, *leuweung awisan*, *leuweung bukaan* and *Gunung haruman*. *Leuweung kolot* or *leuweung tutupan* are customary areas, which are based on customary law, are maintained as an environmental conservation area. *Leuweung awisan* or *leuweung titipan* is customary areas which according to customary law is maintained as a reserve area for land and natural resources use activities. While *leuweung bukaan* is customary areas which according to customary law is used for the benefits of livelihood, e.g. mixed plantation, rice fields, or customary law residential. *Gunung Haruman* is customary areas which can be opened to be used as timbers or fruits plantations. Besides, local wisdom of law adat communities of Kasepuhan Karang related to traditional farming is known as *Leuit Paceklik*, which is a rice storage system which can give benefits of food securities for the customary law communities (Nugroho, 2017).

For Raja Ampat communities, *Sasi* is a management practice natural resources, terrestrial or marine, which are based on customary rights ownership. Marine *Sasi* for Raja Ampat communities is common agreements or commitments to protect habitat and marine biota. Marine *sasi* is imposed due to a decrease in marine product catch. The *sasi* implementation in Raja Ampat includes:

1. Period of not catching or not or not utilizing certain fisheries resources which have been agreed for 12 months,

2. Period of using back the resource for 3 weeks,
3. Determine the types of resources that are imposed by *sasi*, such as shrimp *sasi*, lola snail *sasi*, or sea cucumber *sasi*,
4. Determine the size that can be harvested,
5. Determine the type of catching gears and technic, determine the selling price and sale of *sasi* harvest, and
6. Distribution and the use of sales revenue.

The institutionalization of *sasi* in Raja Ampat is proposed and facilitated by the head of the village, village consultative bodies, religious leaders and *adat* leaders. The utilization of local wisdom for zonation includes core zone, food security and marine tourism zone, and *sasi* zone. The core zone in the Regional Marine Protected Area (KKPD) Selat Dampier is an area that has been considered sacred and should not be entered by the local community. Core zone only use is for research area and dugong and manta rays often seen here. Food security zone and marine tourism are determined by permanent *sasi*. In this zone extractive activity of marine resources is not allowed, but environmentally-friendly tourism activities are allowed. This zone is a marine area belong to *adat* which has been surrendered by *adat* communities to area management or regional government. Meanwhile, *sasi* zone is the location of the implementation of traditional management of marine resources, marine *sasi*, which are temporary. *Sasi* zone is intended specifically for traditional people who use simple fishing gear such as *kalawai* (spear) and *jubi* (fish arrows). (Boli et al., 2014).

Other than Raja Ampat, the local wisdom can be seen in Negeri Haruku – Sameth communities, Haruku Island, Maluku. Haruku community has unique traditions to preserve its sustainability of natural products. Haruku Island is one of the small islands located in Lease Islands group (Ambon, Haruku, Saparua, Nusalaut, Pombo and Molana), which is located in the East of the Ambon City/Island. The customary leaders in Negeri Haruku – Sameth Para pemimpin adat di Negeri Haruku – Sameth enforce the ban period and the period allowed for residents to catch fish in the sea or river. Local people call it the *Sasi Lompa* tradition.

As a form of acknowledgement to this local wisdom, Ministry of Marine Affairs and Fisheries (KKP) facilitates the issuance of Regent Regulation No. 81 Year 2017 that acknowledge the application of customary law and local wisdom in the management and protection of marine resources in Haruku, Central Maluku Regency. *Sasi Lompa* or *Sasi Laut* is an annual tradition held by the community on the island of Haruku. *Sasi Lompa* comes from two words, which are *Sasi* and *Lompa*. *Sasi* is a ban on Maluku which aims to preserve nature, while *Lompa* is a type of small Sardinian fish that lives in brackish water. Seeds or hatchlings of *lompa* fish are usually starting to be seen in groups on the coast of Haruku between April and May. At this time, *sasi lompa* is declared valid (closed *sasi*). The people are forbidden to catch fish, because the size is still too small, which are shown by fixing the *sasi* sign in the form of the wooden pillar which

ends are wrapped with young coconut leaves (*janur*) which indicates that *Sasi* has been put into effect. In general *Sasi Lompa* regulates the following:

1. *Lompa* fishes, when located in the *sasi* area, shall not be caught or disturbed using any gears in any way.
2. Sea motorboat shall not enter Learisa Kayeli river with its machine turned on.
3. Kitchen utensils shall not be washed in the river.
4. Garbage shall not be dumped onto the river, but instead shall be dumped at a distance of 4 meters from the river at places designated by Kewang.
5. If a bait is needed for fishing, *lompa* fish can only be caught with a hook, but fishing shall not be done on the river.

For the community member who violates this regulation will be subject to sanctions or penalties according to the provisions in the *sasi* regulations, in the form of fines. For children committing violations, they will be subject to a sentence of being hit with rattan 5 times, which infers that the child must bear the burden of the mandate of the five great *soa* (great family/surname) residing in Haruku.

The coastal and sea areas which are managed by *adat* communities also get supports from civil society organization in maintaining and strengthening the conservation values of natural resources in its management.

Among several examples of similar achievements in preserving local wisdom as a cooperation between the Indonesian Government and LSMs are:

1. Revival of [Adat Baranusa](#) local wisdom in [Alor Regency, East Nusa Tenggara \(NTT\)](#) Province regarding the management of marine resources on Lapang Island, through the 'open-close' system of the area - or known as 'Mulung'.
2. Reactivation of 13 ha (650 x 200 m) community conservation area within customary area by three customary leaders in Wakatobi Islands, Southeast Sulawesi Province. The customary system managing the natural resources is known as '[kaombo](#)'.
3. Initiation of [Marine Conservation Agreement with Petuanan Negeri Kataloka](#) to manage an area of 2,537.6 ha located in Koon Island waters to the south of Grogos Island.

In the innovation of biodiversity utilization, bioprospecting represents exploration on biological diversity potentials of providing genetic and biochemical resources having commercial values. Exploration capacity of bioresources, for example, identification of plants with

medical potentials being used for generations. Some of these has been developed into *jamu* or traditional medicine for commercial use.

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 18 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 18. Generally, the progress indicators for every Activity Groups of NT 18 is assessed based on several progress indicators supporting Action Plan 2 of the IBSAP, i.e. 'Development of Biodiversity Utilization', which are:

- i. Number of patented local wisdom innovation
- ii. Number of local wisdom used to support sustainable biodiversity management and harvesting.

EN

Any other tools or means used for assessing progress.

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

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Relevant websites, links, and files

[Pemanfaatan kearifan lokal sasi dalam sistem zonasi kawasan konservasi perairan di Raja Ampat.](#)
[Benefits of Sasi for conservation of marine resources in Raja Ampat, Papua.](#)
[Laporan Kinerja Direktorat Jenderal Kebudayaan Tahun 2016](#)
[Laporan Kinerja Kementerian Sosial Tahun 2016](#)
[Hutan Adat Wujud Rakyat Berdaulat Bangsa Bermartabat.](#)
[Hoba Mulung: Cerita Masyarakat Adat Baranusa, Alor, Kembali Buka Lautnya Setelah Setahun.](#)

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Level of confidence of the above assessment

The confidence level on the progress of implementation of NT 18 is assessed 'based on comprehensive evidence'. Such consideration for the assessment in this confidence level are:

1. The progress of implementation efforts indicator of National Target 18, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements.

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the [Presidential Regulation No. 29 Year 2014](#) on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

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Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020.](#)

National Target 19: Implementation of science and technology capacity building for sustainable management of biodiversity



2018 - On track to achieve target

Targets

National Target 19: Implementation of science and technology capacity building for sustainable management of biodiversity

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 19 is: Implementation of science and technology capacity building for the sustainable management of biodiversity. NT 19 supports Aichi Biodiversity Target (ABT) 19 on the development of science and technology based on biodiversity.

Based on the IBSAP 2015-2020, the implementation of NT 19 supports IBSAP Action Plan 1,2, and 4, i.e. 'Research, data management, and documentation of biodiversity', 'Development of Biodiversity Utilization', and 'Capacity Building of Biodiversity' through the following Activity Groups (KK):

- i. Research, Mastery, and Utilization of science and technology (IPTEK) for Biological Resources (SDH)
- ii. Development of cooperation pattern between government and communities, especially private parties
- iii. Development of support on biodiversity industry with consideration to sustainability;
- iv. Utilization, development, familiarization, and cooperation on rural technology;
- v. Increasing dissemination on research results on SDH;
- vi. Development of Clearing House Mechanism (CHM);

These are achieved through Action Plan on Research, Data Management and Documentation of Biodiversity with activity groups program comprising research, mastery and utilization of biological resources science and technology. In addition, it was also achieved through Action Plan on the Development of Biodiversity Utilization with activity group on development of cooperation pattern between government and communities, especially private sparties, and the development of development of support on biodiversity industry with consideration to sustainability. Efforts to achieve National Goals 19 are also conducted through the Action Plan on Capacity Building of Biodiversity Utilization with activity group on the increased dissemination of research results on SDH and development of clearing house mechanisms (CHM).

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Achievement of NT 19 done through activity group of research, mastery, and utilization of science and technology for biological resources is described as follows:

1. Information on research results in the form of intellectual properties related to biological resources and biodiversity, until now are still stored in each ministry/agencies and educational institutes, e.g. [Ministry of Research, Technology, and Higher Education](#), [Indonesian Institute of Sciences](#), [Directorate General of Intellectual Property](#), [Ministry of Law and Human Rights](#) and [Biofarmaka, Bogor Agricultural University](#)
2. Information on the usage of science and technology related to biodiversity resources, until now are also still stored in each research and educational institutes, e.g. in [Center of Excellency Science and Technology of Universities](#), [Indonesian Institutes of Sciences](#), and [Biofarmaka, Bogor Agricultural University](#).

The progress of development of government partnership model with communities especially private sectors on biological resources and biodiversity is more diverse. Management of natural resources and ecosystem are done through partnership mechanism, e.g. with business entities or national/international agencies. In 2017, there are 328 national partnerships at the level of Technical Implementation Unit (UPT) and 40 partnerships at the central level. Partnerships for conservation areas management in 2017 are entered into for the purpose of strengthening the functions of 59 conservation areas, while the other 25 are entered into for strategic development purposes. Partnership activities for strengthening the function are done in the form of community developments, biodiversity conservations, nature recreation parks, ecosystem restorations, knowledge and educations, rehabilitation, non-timber forest products, securities and protections, and institutional strengthening. Meanwhile, partnership activities for strategic development are done in a form of development of communication and support facilities, limited transportation, new energy and national electricity networks, disaster mitigation, and irrigation. ([KemenLHK, 2018a](#); [KemenLHK, 2016](#)).

Achievement of NT 19 which is done through Action Plan on Capacity Building of Biodiversity Management with the activity groups on improvement in biodiversity resources research dissemination and Development of a CHM is described as follows:

1. Research result dissemination related to biological resources and biodiversity available in a journal a lot has been done through journal publication. As of 2018, 2,275 such journals have been published in Indonesia, with some of them specifically publishing scientific articles relating to Indonesian biological resources and biodiversity.

2. Launching of National Clearing House Mechanism ([Balai Kliring Keanekaragaman Hayati Indonesia-BKKHI](#)) portal, which received [Gold Award](#) for New National Clearing House Mechanism category during the 14th COP CBD in Egypt. Revitalization and development of BKKHI are done by building network nodes of ministries, agencies, and non-governmental agencies to achieve IBSAP National Target and Aichi Target and develop BKKHI as information media and biodiversity knowledge centre.

Among the efforts to provide access to marine and fisheries information are as follows:

- a. Dissemination of research results and technical guidance relating to biological resources and their management. Such technical guidance has been conducted on 1186 Fish Processing Units (UPIs) to ensure product quality and safety assurance in accordance with HACCP certification standards.
- b. Technical guidance on management of Marine Protected Area (MPA 101) for the community and stakeholders of Marine Protected Areas, equipped with information books elaborating the basic principles of watershed conservation management.
- c. Spatial information system for fishing areas and environmental changes in coastal ecosystems, which contains predictive information of fishing areas and potential areas for pelagic fishing within Indonesian waters. URL: <https://kkp.go.id/artikel/5846-informasi-peta-prakiraan-daerah-penangkap-ikan-ppdpi-periode-tanggal-29-30-agustus-2018>
- d. The Smart Fisherman Information System in 48 fishing ports, containing Regional Fishing Forecast Map (PPDPI) information, weather, wave and wind information, port information, fish prices and fuel forecast menus and help menus. URL: <http://perikanan38.blogspot.com/2015/11/sistem-informasi-nelayan-pintar.html>
- e. Information System on Protected Fish Data (Si DIDI) is an information system that retrieves data in the form of direct civil reports from citizens possessing the relevant application on their mobile phones through uploads of pictures/photos. This application has been developed since 2015.
- f. Disaster Mitigation Information System, Adaptation to Climate Change and Environment (SIMAIL), which is an information system relating to disasters, climate change and the environment in the marine and fisheries sector that are disseminated through text messages (text), running text (running text display), and notifications via Android OS.
- g. Information System on the Monitoring of Water Environment Near Fisheries Port (SIPLP3), to monitor water quality conditions in fishing ports, with the following parameters: Water surface temperature, Conductivity, Salinity, Turbidity, Degree of Water Acidity (pH), Dissolved Oxygen, Changes in sea level.
- h. Aquaculture Business Activities (AKUBISA) Application is an online licensing service to ensure traceability, facilitate control and provide the right database, and licensing.

- i. Android OS application "Teman Taman Laut" (Friends of the Sea Park) which facilitates visitors to Marine Protected Areas in Indonesia through provision of information on the area and mechanisms to report on the condition of Marine Protected Areas.
- j. The Indonesia Coral Bleaching Response Plan, founded in 2015, as well as Indonesia's Reef Check Network, founded in 1997, I-CAN, founded in 2014, and Whale Stranding Indonesia founded in 2013, has facilitated the public in providing information on various marine biodiversity related information to management authorities.

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 19 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 19. Generally, the progress indicators for every Activity Groups of NT 19 is assessed based on several progress indicators supporting IBSAP Action Plan 1,2, and 4, i.e. 'Research, data management, and documentation of biodiversity', 'Development of Biodiversity Utilization', and 'Capacity Building of Biodiversity' are:

- i. Number of research on SDH and number of people using the results of Ministries/Institutions (K/L) methods/technologies;
- ii. Number of agreements (MOU-MOA) among relevant parties;
- iii. Increase of support from sustainable biodiversity-based industry;
- iv. Number of facilities;
- v. Number of disseminated research results on biological resources;
- vi. Functionality of CHM

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Any other tools or means used for assessing progress.

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

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Relevant websites, links, and files

[Pelestarian keanekaragaman hayati ex situ melalui pembangunan Taman Kehati oleh sektor swasta: Lesson learned dari Group Aqua Danone](#)

Indonesia.

Statistik Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem 2015.

Statistik Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem 2017.

Statistik Lingkungan Hidup dan Kehutanan 2017.

Sistem Informasi Nelayan Pintar

Peta Prakiraan Daerah Penangkapan Ikan

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the progress of implementation of NT 19 is assessed 'based on comprehensive evidence'. Such consideration for the assessment in this confidence level are:

1. The progress of implementation efforts indicator of National Target 19, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements.

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives

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of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the [Presidential Regulation No. 29 Year 2014](#) on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences).

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020.](#)

National Target 20: Identification of resources and budget effectiveness in the implementation of sustainable management of biodiversity



2018 - On track to achieve target

Targets

National Target 20: Identification of resources and budget effectiveness in the implementation of sustainable management of biodiversity

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 20 is: Identification of resources and budget effectiveness in the implementation of sustainable management of biodiversity.

Based on the IBSAP 2015-2020, the implementation of NT 20 supports IBSAP Action Plan 2 and 4, i.e. 'Development of Biodiversity Utilization', and; "Capacity Building of Biodiversity" through the following Activity Groups (KK):

- i. Development of support for trade system on biodiversity benefit
- ii. Preparation of cooperative model between parties
- iii. Development of regulations and organisations in driving the increase of financing resources.
- iv. Identification of needs and financing resources for biodiversity management, as well as prioritized locations
- v. Preparation on mobilization mechanisms on financing for priority locations
- vi. Studies on the impact of subsidion on biodiversity utilization and preservation program;

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- vii. Preparation of National Biodiversity Conservation Fund (NBCF) in supporting the implementation of the IBSAP 2015-2020
- viii. Enhancement of support from Central and Regional Government for economic utilization and improvement of community's well being.

Effective biodiversity management is needed to guarantee biodiversity protection as well as sustainable utilization for communities welfare, for both current and future generations. Biodiversity management efforts include conservation aspects, utilization, and benefit sharing from biodiversity component utilization. Biodiversity management efforts need funding resources in order to make the implementation of biodiversity policies and action plans to achieve the national targets can be done effectively. Funding aspects have been reviewed during the process of drafting and it's listed in IBSAP 2015-2020, especially for the one related to biodiversity management funding, funding resource identification, and estimation of funding needs for biodiversity management. Funding aspects in the biodiversity management have been done in more specific and deeply manners by the Government of Indonesia in collaboration with UNDP in Biodiversity Finance Initiative (BIOFIN) scheme.

BIOFIN serves as a guidance to review current funding patterns, estimate funding needs and gaps, and identifies funding sources and innovative financing mechanism which can be mobilized to support outcome targets of biodiversity management. The outcome of BIOFIN (PKPPIM, 2018) includes:

- a. Compiled results of biodiversity expenditure reviews:

Studies on biodiversity expenditure is conducted based on analysis of government and non-government expenditure budget which gives biodiversity benefits. Biodiversity expenditure review includes budget allocation and implementation done and future budget projection for biodiversity, with budget focusing for 4 action plans of IBSAP 2015-2020. Government budget expenditure analysis is focused on four ministries and an agency, i.e. Ministry of Environment and Forestry (KLHK), Ministry Marine Affairs and Fisheries (KKP), Ministry of Agriculture (Kementan), Ministry of Public Works and Public Housing (KPUUR), and Indonesia Institute of Sciences (LIPI).

Biodiversity expenditure reviews also conduct analysis on expenditure budget coming from loan and grants, whether through the multilateral or bilateral scheme. Biodiversity expenditure budget allocation analysis is referring to action plans and activities of IBSAP 2015-2020 and expenditure identifications are done by examining the overall budget at Ministries/Institutions (K/L), which consist of KLHK, KKP, Kementan,

KPUPR, and LIPI. During the 2014-2016 period, biodiversity expenditure budget allocation of central government shows fluctuating growth pattern, showing a relatively stagnant percentage of around 0.51% - 0.57% (Table 9).

Table 9. Distribution of allocated budget for each ministries and agencies acting as main stakeholders in biodiversity management for 2014-2016.

No.	Ministries/Agencies	Biodiversity expenditure budget (million rupiah)		
		2014	2015	2016
1	Ministry of Environment and Forestry	3,607,827	3,955,512	3,611,362
2	Ministry of Agriculture	1,260,584	1,513,454	588,611
3	Ministry Marine Affairs and Fisheries	612,234	1,210,299	988,258
4	Ministry of Public Works and Public Housing	1,181,849	524,573	1,178,365
5	Indonesia Institute of Sciences	267,740	339,472	341,585
Total		6,930,234	7,543,310	6,708,181

Government expenditures for biodiversity in the period of 2014-2016 if grouped according to the action plan, it can be seen that most of the expenditure is allocated to action plans 2 and 3, (Table 10). Activity groups having the largest proportion in the action plan for the development of biodiversity utilization is conservation area management and development of the essential ecosystem as well as ecosystem recovery outside conservation areas.

Table 10. Allocated expenditure for biodiversity by action plans for 2014-2016 contribution to each action plan

No.	Action Plan	Biodiversity expenditure budget (million rupiah)		
		2014	2015	2016
1	Research, data management, and documentation of biodiversity	456,838	441,851	372,990
2	Development of biodiversity utilization	2,921,123	2,681,729	2,316,733
3	Maintenance and preservation of biodiversity	2,968,796	3,422,732	3,566,315
4	Capacity Building of Biodiversity Management	582,476	996,998	452,143
Total		6,930,234	7,543,310	6,708,181

Most of the funding for biodiversity expenditure budget in the ministries/agencies come from state revenues and a small portion comes from funding from international donor agencies, both loans and grants with multilateral, bilateral and commercial schemes. Funding comes from donor agencies have been received and integrated into the budget of each Ministries/Institutions (K/L). During 2006-2016 period, Government of Indonesia had received funding from donor agencies amounted USD 296 million, consisting of loans 85% or equal to IDR 2.9 trillion) and grants (15% or equal to IDR 462 billion) (PKPPIM, 2018).

b. Biodiversity Financing Plan:

Biodiversity financing plan provides a comprehensive biodiversity funding solution which includes funding mobilization from the public sector, private, and community to fulfil funding needs in achieving biodiversity national targets. Biodiversity financing plan includes: 1) analysis on existing funding potentials and priority setting for best solutions to be incorporated to the financing plan; 2) presentation of

biodiversity funding needs, strategies and targets that can be met with the best alternative financing solutions; and 3) formulation of a business case to encourage the financing solutions implementation. Results of the priority setting of IBSAP 2015-2020 action plans for biodiversity management are shown in Table 11:

Table 11. Priority Finance for Biodiversity Action Plans

Action Plan	Priority Action
Action Plan 1 Research, data management, and documentation of biodiversity	1. Improving biological diversity quality database
Rencana Aksi 2 Biodiversity utilization	2. Development of ecotourism attractions 3. Marine conservation and management 4. Restoration and increasing marine protected areas
Action Plan 3 Preservation of biodiversity	5. Increasing protection of rare, protected, and endangered species. 6. Restoration of the land conservation area

Funding solutions relevant to each selected priority activities are shown in table 12. Funding solutions to increase biodiversity database quality are state budget, aid coordination, and bioprospecting. Biodiversity financing solutions are also accommodated by Indoensia's Green

Bond and Green Sukuk Initiatives. One way of which is through financing on development of ecotourism areas, either on infrastructural facilities or habitat conservation. URL: <https://www.ndcs.undp.org/content/dam/LECB/docs/pubs-reports/undp-ndcsp-green-sukuk-share.pdf>

Table 12. Priority financing solutions in improving quality of biodiversity databases

Priority Activity	Alternative Funding Solution
Improving biological diversity quality database	1. State budget
	2. Aid coordination fund
	3. Bioprospecting
Development of ecotourism attraction	4. Tourism fee and commercial advertisement
	5. <i>Zakat, Infaq, Shadaqah and Wakaf</i> (Islamic Religious Charitable Fund)
	6. Impact investment through Green Sukuk
Marine conservation and management	7. Tariff/fee/water tax
	8. Wastewater fee and penalties
Restoration and increasing conservation areas	9. Debt for nature swap
	10. Corporate social responsibility (CSR)
Increasing protection of rare, protected, and endangered species.	11. Environmental trust fund
	12. Crowdfunding
	13. Rare species fee
Ecosystem restoration of the conservation area	14. CSR
	15. Biodiversity offset
	16. Green Islamic Bonds
	17. Ecological fiscal transfer (EFT) for ecological conservation

Biodiversity funding to increase the utilization of marine biological resources are, among others:

- a. To increase investments and accelerate industry within the marine and fisheries sector, the Government issued Presidential Regulation No. 3/2017 on Action Plan of Development Acceleration of National Fishing Industry.
- b. Ministry of Marine Affairs and Fisheries issued Minister of Marine Affairs and Fisheries Regulation (PermenKP) No. 17/2015 on Criteria and/or Requirement for Grant of Income Tax Facility for Investment in Particular Business Areas and/or in Particular Regions Within the Marine and Fisheries Sector. The investment value within the sector reached IDR 4.828 trillion (2017), with a total credit assistance for the sector amounted IDR 11.27 trillion (2017), an increase of 0.32 trillion from that of 2015.
- c. To ensure the existence of aid funds for Conservation Areas, studies have been conducted on the obligations of Marine Protected Areas, as well as pilot projects for developing trust funds for the management and conservation in Raja Ampat through Blue Abadi Trust Fund, as well as pilot projects for financial management of the Regional Public Service at KKP Raja Ampat.
- d. Biodiversity funding for restoration and improvement of marine protected areas can be done through Debt for Nature Swap and Corporate Social Responsibility, which are potential funding mechanisms for recovery and management of conservation areas. Meanwhile, for ecological conservation, for both terrestrial ecosystems and marine ecosystems, such procedure can be done through Ecological Fiscal Transfer (EFT). Fiscal transfers between governments can redistribute tax revenues between government levels in accordance with agreed principles and priorities. The fiscal transfer scheme can maximize the role of local governments to manage conservation areas without relying on the central government.

Fundings to fulfil the needs of financing in the biodiversity national target which are sourced from the private sector or development partners, some the fundings are done through a partnership with Kehati Foundation. Kehati Foundation participates in supporting Indonesia biodiversity management funding through several programs, e.g. Community-Based Natural Resources Management (CBNRM) Grant Program amounted USD 26,408,226, Blue Abadi Trust Fund amounted USD 40,000,000, Tropical Forest Conservation Action Sumatera amounted USD 41,600,000, and Tropical Forest Conservation Action Kalimantan amounted USD 28,500,000.

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 20 is determined based on indicators set out in the IBSAP, as well as indicators from

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other efforts supporting the implementation of activity groups of NT 20. Generally, the progress indicators for every Activity Groups of NT 20 is assessed based on several progress indicators supporting Action Plan 2 and 4 of the IBSAP, i.e. 'Development of Biodiversity Utilization', and; 'Capacity Building of Biodiversity' are:

- i. Improvement of sustainable biodiversity trade standard;
- ii. Number of agreements (MOU-MOUA) between relevant parties;
- iii. Number of issued legislative regulations;
- iv. Mapping on the needed amount and source of funding, as ell as priority location for biodiversity management;
- v. Guidelines on the mobilization mechanism of funding for biodiversity management;
- vi. Amount of subsidies revoked and roadmap of the subsidion to regions;
- vii. Preparation of documents on:
 - Fund mobilization strategy
 - Establishment of documents
- viii. Number of policies and business entities;
- ix. Number of business facilities for biodiversity utilization by the community

Any other tools or means used for assessing progress.

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

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Relevant websites, links, and files

[Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.2/MENLHK/SETJEN/KUM.1/1/2018 tentang akses pada sumber daya genetik spesies liar dan pembagian keuntungan atas pemanfaatannya.](#)
[Peraturan Menteri Pertanian Nomor 15/Permentan/OT.140/3/2009 tentang pedoman penyusunan perjanjian pengalihan material \(Material Transfer Agreement\).](#)
[Peraturan Menteri Pertanian Nomor 37/Peremntan/OT.140/7/2009 tentang pelestarian dan pemanfaatan sumber data genetic tanaman.](#)
[Peraturan Kepala Lembaga Ilmu Pengetahuan Nomor 9 year 2014 tentang Pedoman Perjanjian Pengalihan Material di Lingkungan Lembaga Ilmu Pengetahuan Indonesia.](#)

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the progress of implementation of National Target 20 is assessed 'based on comprehensive evidence'. Such consideration for the assessment in this confidence level is:

1. The progress of implementation efforts indicator of National Target 20, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the [Presidential Regulation No. 29 Year 2014](#) on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is

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the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences).

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020.](#)

National Target 21: Implementation of comprehensive and integrated data gathering and information mapping on biodiversity



2018 - On track to achieve target

Targets

National Target 21: Implementation of comprehensive and integrated data gathering and information mapping on biodiversity

EN

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 21 is: the implementation of comprehensive and integrated data gathering and information mapping on biodiversity.

Based on the IBSAP 2015-2020, the implementation of NT 21 supports IBSAP Action Plan 1, i.e. 'Research, data management, and documentation of biodiversity' through the following Activity Groups (KK):

- i. Increase of biodiversity documentation
- ii. Increase of biodiversity identification
- iii. Increase of compiled biodiversity data and information
- iv. Maintenance of biodiversity data
- v. Exploration of potential new biodiversity
- vi. Increase in basic research on biodiversity
- vii. Increase in applied research on biodiversity
- viii. Development of utilization of biodiversity research results
- ix. Increase of patents from biodiversity research results
- x. Research, Mastery, and Utilization Program of Science and Technology (IPTEK) for Biological Resources (SDH)

The progress of thorough and integrated data and information mapping on biodiversity which has been done through several activities described below:

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1. Efforts on improving biodiversity assessment have been done by LIPI and other related agencies as published in Book of Indonesia's Current Biodiversity (Widjaya et al., 2014). The number of fauna species in Indonesia in 2017 was 80,588 species. In 2017 alone, 86 new species of flora, fauna and microbes had been discovered (LIPI, 2018). In 2015, 49 new species of flora, fauna and microbes had been discovered (LIPI, 2016).
2. Improvements on biodiversity-related research have been done by several Ministries/Agencies, e.g. LIPI, Kemenristekdikti, Forestry and Environmental Research Development and Innovation Agency, KLHK, Research and Development Agency, Ministry of Agriculture, Research and Human Resource Agency, Ministry of Marine Affairs and Fisheries and universities. The researches conducted by Ministries/Agencies and universities, in general, mainly focuses on each agency's jobs and functions, national priorities, and Ministries/Agencies priorities, therefore the agencies do not conduct research specifically on the topics related to biodiversity or biological resources. However, LIPI Research Center for Biology conducts research related to biological resources and revealed that the number of bioresources isolated for foodstuff, medicines, and energy in 2017 is 102. This number is 67% higher compared to the number of bioresources isolates in 2015. Meanwhile, research product utilized by the public is 14 products in total in 2017. Research product utilized by the public had increased by 27% compared to 2015.
3. Efforts on increasing number of publication from research related to biodiversity are done by several research institutions within ministries/agencies, private bodies or LSMs, for example in LIPI, Ministry of Research, Technology, and Higher Education, Forestry and Environmental Research Development and Innovation Agency, KLHK, Research and Development Agency, Ministry of Agriculture and Research and Human Resources Agency, Ministry of Marie Affairs and Fisheries. The Ministry of Research, Technology, and Higher Education has a built-in Science and Technology Index (Sinta, URL: <http://sinta2.ristekdikti.go.id/>), a web-based research information system which gives a web-based research information system that provides speed and access and is comprehensive to measure the performance of researchers, institutions and journals in Indonesia.
4. Research results related to biological resources or biodiversity, other than producing scientific publication, may also produce plant varieties which can be registered as local variety, breeding result, or granted patents. The development of issuance of Registration Proof of Local Variety and Breeding Results tend to increase. In 2015, 104 Registration Proof of Local Variety and Breeding Results had been issued and increased to 343 in 2017. (PPVTPP, 2018). Meanwhile, a number of patents related to biodiversity are 125 patents in 2016

and increased to 156 patents in 2017. Patents obtained and related to biodiversity include a variety of benefits, e.g. use of biodiversity for herbal medicines, biofertilizers, herbal antioxidants, stimulants, anti-cancer, biopesticides, even bio-vaccines (DJKI, 2018).

Indicators and Activities

Indicator(s) used in this assessment

Assessment on the implementation progress of NT 21 is determined based on indicators set out in the IBSAP, as well as indicators from other efforts supporting the implementation of activity groups of NT 21. Generally, the progress indicators for every Activity Groups of NT 21 is assessed based on several progress indicators supporting Action Plan 1 of the IBSAP, i.e. 'Research, data management, and documentation of biodiversity', which are:

- i. Number of biodiversity documented
- ii. Number of biodiversity identified
- iii. Percentages of managed data & information
- iv. Number of biodiversity & selected biodiversity mapping databases
- v. Number of newly identified biodiversity
- vi. Number of research on biodiversity resources
- vii. Number of user of methods/technologies results developed by Ministries/Agencies
- viii. Number of National and International Publications on relevant research results
- ix. Number of basic researches on biodiversity
- x. Number of published basic researches on biodiversity
- xi. Number of published applied researches on biodiversity
- xii. Number of science and technology (IPTEK) services utilized
- xiii. Number of patents related to biodiversity

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Any other tools or means used for assessing progress.

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of

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Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

Relevant websites, links, and files

[Pangkalan data Kekayaan Intelektual Indonesia.](#)

[Laporan Kinerja Tahun 2015 Pusat Penelitian Biologi-LIPI.](#)

[Laporan Kinerja Tahun 2017 Pusat Penelitian Biologi-LIPI.](#)

[Laporan Tahunan Pusat Perlindungan Varietas Tanaman dan Perizinan Pertanian year 2017.](#)

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the progress of implementation of National Target 21 is assessed 'based on comprehensive evidence'. Such consideration for the assessment in this confidence level are:

1. The progress of implementation efforts indicator of National Target 21, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ.
2. LKJ is a comprehensive report containing complete and detailed activities and achievements.

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture

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(Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

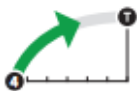
Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the [Presidential Regulation No. 29 Year 2014](#) on the Government Performance Reporting System (SAKIP). This system does not specifically monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020.](#)

National Target 22: Implementation of various conflict settlement processes related to biodiversity



2018 - On track to achieve target

Targets

National Target 22: Implementation of various conflict settlement processes related to biodiversity

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Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

31 Oct 2018

Summary of the assessment of progresses toward the implementation of the selected target

National Target (NT) 22 is the implementation of various conflict settlement processes related to biodiversity.

Based on the IBSAP 2015-2020, the implementation of NT 2 is achieved through the Activity Group (KK) of conflict settlements on biodiversity management.

Sustainable forest management needs to involve customary law communities, consider aspiration dynamics and contributions of communities; customs and culture, and community values system based on the norm of national law. Forest area tenurial conflicts handling and settlement request can be done in person or online by filling up the application form provided. The settlement of various conflicts may be carried out, among others, based on Minister of Environment and Forestry Regulation (PermenLHK) No. P.84 Year 2015

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on handling of tenurial conflicts on forest area and PermenLHK No. 48 Year 2008 which has been amended with PermenLHK No. 53 Year 2014 on amendment to Minister of Forestry Regulation No. 48 Year 2008 on guideline on conflict mitigation between humans and wildlife.

In 2017, there are 78 tenurial conflicts involving 329,000 ha areas have been handled, out of existing 79 tenurial conflicts. The number of successful tenurial conflict settlement is increasing compared to the same in 2015 (8 conflicts) and in 2016 (19 conflicts) ([KemenLHK, 2018a](#)). In 2017, conflict tenurial handling based on the largest conflict typology is a conflict between communities and corporation (58%), followed by the conflict between communities and ministries/agencies (38%). Meanwhile, the geographical distribution of the successful tenurial conflict settlement is spread in many provinces in Indonesia with the largest number mentioned in sequence: the Province of Jambi (17%), North Sumatra (13%), South Sumatra (9%), and Riau (9%) ([KemenLHK, 2018b](#)).

Handling of conflicts in coastal areas and small islands includes the use of Cantrang fishing gear and IUU fishing. In anticipating potentially arising conflicts due to the prohibition of using cantrang equipment through Minister of Marine Affairs and Fisheries Regulation (PermenKP) No. 2 Year 2015, several handling steps were taken, as follows:

- a. Socialization on the used of environmentally friendly fish catcher;
- b. Replacement by environmentally friendly Fish Catching Devices (API) for cantrang ships under 10 GT;
- c. Cantrang ships between 10-30 GT are provided financing assistance facility from financial institutions as well as restructurization of receivables;
- d. For cantrang ships of 30 GT and larger, assistance facilities are provided for central licensing services through licensing outlets, and are provided options to catch fishes in Fisheries Management Areas (WPP) either in the east or west, i.e. Arafura and Natuna seas.
- e. To reduce cantrang use, by 2016, KKP has replaced cantrang and arad APIs up to as many as 2,166 units, of which 1,009 APIs are from the West area, 599 APIs are from the Central Area, and 557 APIs from the East Area. KKP is currently continuing to process the replacement of cantrang fishing gear for fishermen who have been using it. The government extended the period of cantrang usage until December 31, 2017, postponed from the previous deadline in June 2017. During this transition period, fishermen shall replace with other, more environmentally friendly fishing devices.
- f. Other solutions suggested by KKP is preparing the Natuna and Arafura waters, having a larger fishery potential for ex-cantrang users switching to a more environmentally friendly fishing device.

Indonesia has been striving to eradicate illegal, unreported, unregulated fishing (IUU Fishing) activities within the national marine territory, through the following means:

a. Policies/legislative regulations relating to IUU Fishing:

- PermenKP No. 56 Year 2014 on Moratorium of Permits for Ex-Foreign Vessels.
- PermenKP No. 57 Year 2014 on Prohibition of Mid-Sea Transshipment.
- Act No. 45 Year 2009 on Fisheries, Article 69 paragraph 4 on burning and sinking of foreign vessels performing illegal fishing
- Presidential Regulation (Perpres) No. 44 Year 2016 on Negative List of Foreign Investment, with fish catchment business declared restricted for foreign investment.

b. Deployment of Task Force 115 through Perpres No. 115 Year 2015 on Task Force for Eradication of Illegal Fishing in support of the efforts to tighten law enforcement on violations and crimes within marine and fisheries sector, especially integrated illegal fishing. Task Force 115 works with country partners and international organizations in handling IUU Fishing, during which it has been successfully sank 317 foreign vessels performing illegal fishing as of 2017.

Indicators and Activities

Indicator(s) used in this assessment

Indicators used to assess the progress of NT 22 is based on IBSAP 2015-2020 document. Such indicator of NT 22 is the number of settled conflicts.

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Any other tools or means used for assessing progress.

All activity programs from grants to the government that are not reported in the LKJ of ministries/institutions will be monitored by BAPPENAS in the E-Monev program (Electronic Monitoring and Evaluation): URL: <http://e-monev.bappenas.go.id> and by the Ministry of Finance in OMSPAN program (Online Monitoring System for Treasury and State Budget) URL: <https://spanint.kemenkeu.go.id/>.

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Relevant websites, links, and files

Laporan Kinerja Kementerian Lingkungan Hidup dan Kehutanan Tahun 2017.
Statistik Kementerian Lingkungan Hidup dan Kehutanan Tahun 2017.

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The confidence level on the progress of implementation of NT 22 is assessed 'based on comprehensive evidence'. Such consideration for the assessment in this confidence level are:

1. The progress of implementation efforts indicator of National Target 22, either for those based on the IBSAP 2015-2020 indicator or efforts target of the RPJMN 2015-2019, have been reported in LKJ.
2. LKJ is a comprehensive report consisting of complete and detailed activities and achievements.

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Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The monitoring for National Target is carried out following the monitoring, evaluation, and reporting (MEP) frameworks and mechanisms as contained in the IBSAP 2015-2020. Such monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries/institutions: Ministry of Environment and Forestry (KLHK), Ministry of Marine and Fisheries (KKP), Ministry of Agriculture (Kementan), and Indonesian Institute of Sciences (LIPI). CBD NFP is also supported by task forces that may constitute representatives of government institutions, non-governmental institutions, universities, and/or experts.

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Monitoring mechanism of the IBSAP is also supported by the monitoring system devised by the Indonesian Government pursuant to the [Presidential Regulation No. 29 Year 2014](#) on the Government Performance Reporting System (SAKIP). This system does not specifically

monitor the achievement of national targets within the IBSAP, however, the reported data or information may provide an overview of the achievement of each National Targets. Among the latest outcome of instruments from SAKIP for the monitoring of National Targets is the reporting document from government institution commonly referred to as the Government Performance Report (LKJ) and statistical report of ministries or government institutions.

Quantitative data is used in assessing the implementation progress. Data may also be sourced from information materials issued by non-governmental institutions such as academists, civil society organizations; which may take forms such as research/scientific reports, case studies, news articles from institutions, press releases, and various forms of official documents resulting from meetings, discussions, or conferences.

Other relevant website address or attached documents

[Indonesian Biodiversity Strategy and Action Plan \(IBSAP\) 2015-2020.](#)

Section IV. Description of national contribution to the achievement of each global Aichi Biodiversity Target

1. Awareness of biodiversity values

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Based on the progress of efforts in increasing awareness of biodiversity as reported in Section III for National Target 1, Indonesia continues to make a major contribution to raise awareness on biodiversity as targeted by ABT-1.

During the 2015-2018 period, various strategies have been implemented to raise awareness on biodiversity, which has been done through formal and non-formal education: direct involvement of community in the management of both terrestrial and marine biodiversity; increase

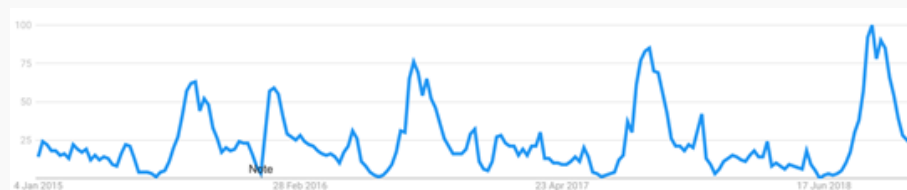
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of compliance through enforcement of environmental criminal law; instilment of values and practices of biodiversity management as efforts to alleviate rural poverty, for example, in developing the forest resources potential of less developed area and empowering small micro-enterprise cooperatives; and damage control programs and utilization of community-based activities in terrestrial and aquatic ecosystems.

Beneficiaries of the above efforts are diverse, coming from stakeholders and community groups with a generally increasing number of recipients since 2015, comprising students, communities in forest buffer villages, and community monitoring groups on coasts and islands as well as the general public involved in various CEPA activities (Capacity, Education and Public Awareness), civil society organizations, and other environment caring communities. These awareness-raising efforts are also accompanied by the increased teaching staffs and improvement of facilities and infrastructure for teaching and education.

Search Popularity of Biodiversity-related Information from the Internet

Analysis of biodiversity awareness carried out using the Google Trends site is applied using several search keywords, including *keanekaragaman hayati*, *konservasi alam*, *biodiversity*, *kelestarian alam*; in the period between January 2015 and November 2018, and broadly speaking, this shows an increasing trend for the four keywords when a comparison is made between trends in the end of period compared to that of the start.



Google Search interest trend from Indonesian users for the keyword '*keanekaragaman hayati*'. URL of analysis: <https://trends.google.com/trends/explore?date=2015-01-01%202018-11-12&geo=ID&q=keanekaragaman%20hayati>



Google Search

interest trend from Indonesian users for the keyword '*konservasi alam*'. URL of analysis: <https://trends.google.com/trends/explore?date=2015-01-01%202018-11-12&geo=ID&q=konservasi%20alam>



Google Search interest trend from Indonesian users for the keyword '*biodiversity*'. URL of analysis: <https://trends.google.com/trends/explore?date=2015-01-01%202018-11-12&geo=ID&q=biodiversity>



Google Search interest trend from Indonesian users for the keyword '*kelestarian alam*'. URL of analysis: <https://trends.google.com/trends/explore?date=2015-01-01%202018-11-12&geo=ID&q=kelestarian%20alam>

This increasing awareness on biodiversity, especially in regard to marine and fisheries, is evident from the increasing compliance percentage within marine and fisheries business as shown in Table 13.

Table 13. Compliance percentage of marine and fisheries business players on the prevailing regulations.

No	Performance Indicator	Year	
		2016 (%)	2017 (%)
1	Compliance percentage of Fisheries Business Players to the prevailing regulations	69.78	93.22
2	Compliance percentage on the utilization of WP3K (Conservation area, reclaimed land, sea sand, PPK, marine tourism, BMKT, salt business) and sea space (KSN and KSNT) to the prevailing regulations	91.07	91.42
3	Compliance Percentage of Fishing Vessels inspected mid-sea to the prevailing regulations	96.07	98.79
4	Compliance percentage of fishing vessels to the terms of monitoring system of fishing vessels	61.50	89.91

Source: Laporan Kinerja KKP, 2017 ([http://kkp.go.id/an-component/media/upload-gambar-pendukung/kkp/LAPORAN/Laporan%20Kinerja%20KKP%202017%20\(REV_4-%20\(28Maret\).pdf](http://kkp.go.id/an-component/media/upload-gambar-pendukung/kkp/LAPORAN/Laporan%20Kinerja%20KKP%202017%20(REV_4-%20(28Maret).pdf))

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

Activities in the National Target 22 on the comprehensive implementation of various conflict settlement processes related to biodiversity contributes to the achievement of this Aichi Target. Indonesia has issued regulations regarding Illegal Unreported Unregulated Fishing/IUU Fishing activities in national waters. These regulations have been socialized and enforced, among others, through strict repression of illegal foreign vessels entering Indonesian waters. This activity creates a deterrent effect for IUU Fishing actors and increases global awareness of Indonesia's marine territory.

Indonesia's efforts to raise awareness and eradicate IUU Fishing were delivered at the FAO forum in Rome, Italy, on June 5, 2016, which pushed for the entry into force of the Port State Measures Agreement (PSMA) international agreement to prevent the occurrence of IUU Fishing. June 5 was then designated as the International Day to Combat Illegal Fishing/International Day for the Fight Against IUU Fishing

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2. Integration of biodiversity values

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Achievement of National Target 2 directly contributes to the achievement of ABT-2. Integration of biodiversity values into development plan has been carried out by Indonesia at all levels starting from the national level, all the way to the regional level. This integration is stipulated in the Indonesian Biodiversity Action Plan (IBSAP) document for 2015-2020.

The IBSAP 2015-2020 document, an updated version of the IBSAP 2003-2020, functions as a national reference in the management and utilization of biodiversity in Indonesia to carry out national-level development pursuant to the Act No. 5 the Year 1994, Act No. 21 Year 2004, Act No. 11 Year 2013, and other laws and regulations (KemenPPN/BAPPENAS, 2016, p. 3). The IBSAP 2015-2020 emphasizes the interrelations between natural resources and human resources in the fair and sustainable utilization of biodiversity to improve the welfare of relevant communities (KemenPPN/BAPPENAS, 2016, p. 232).

As factual examples of implementation of biodiversity integration in national spatial planning, as of 2017, the Indonesian government has established 50 national park management zones; authorized 155 non-national park conservation area management zones (DJKSDAE-KLHK, 2018), established indicative maps for social forest locations and Agrarian Reform Land (TORA) within forest areas to a total combined area of seven million hectares; established 15 regional regulations relating to Coastal and Small Islands Area Zoning Plan (RZ-WP3K); established 8 Marine Area Zoning Plans for National Strategic Areas (RZ-KSN); prepared 35 Specific National Strategic Area Zoning Plan on the Outermost Small Islands (RZ-KSMT-PPKT); prepared 6 Inter-Regional Region Zoning Plan (RZ-KAW); prepared 10 Management and Zoning Plan (RPZ) of National Marine Protected Area (KKPN); established the Seed Crop and Horticulture Seed Supervision and Certification Center (BPSBTPH) in 32 provinces; and a Food Crop and Horticulture Protection Center (BPTPH) in 33 provinces.

References:

1. KemenPPN/BAPPENAS (Ministry of National Development Planning/National Development Planning Agency). 2016. Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2015-2020. URL: https://www.bappenas.go.id/files/publikasi_utama/Dokumen_IBSAP_2015-2020.pdf
2. DJKSDAE-KLHK. 2018. Statistik Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem Tahun 2017. URL: <http://ksdae.menlhk.go.id/assets/publikasi/Buku%20Statistik%20DJ%20KSDAE%202017.pdf>
3. DJPRL. 2018. <https://kkp.go.id/djprl/prl/artikel/4792-rencana-kegiatan-kawasan-strategis> DJPRL. 2018. <https://seanode.id/>

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Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

3. Incentives

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Through efforts to achieve National Target (NT) 3 of the IBSAP 2015-2020, Indonesia has contributed to incentive reforms in biodiversity management. The incentives and disincentives system is realized through (1) development of environmental economic instruments; and (2) financial management on channelling and returning of revolving funds for financing biodiversity development.

Among the regulaitons relating to the incentives and disincentives system are:

- Government Regulation No. 46 Year 2017 on Environemntal Economic Instruments.
- Minister of Public Works and People's Housing Regulation No. 05/PRT/M/2015 on General Guideline for the Implementation of Sustainable Construction of Infrastructure in the Public Works and Residential Area.
- Minister of Agriculture Regulation No. 11/Permentan/OT.140/3/2015 on Indonesian Suistanable Palm Oil Certification System/ISPO.
- Minister of Marine Affairs and Fisheries Regulation No. 16/Permen-KP/2016 on Fisherman Card.
- Regent Regulation No. 18 Year 2014 on Tariffs for Miantenance Services for Environmental Services on BLUD Technical Implementation Unit, Marine Area Service of Raja Ampat Regency Marine and Fisheries Servicec that conducts the implementation of the Payments for Ecosystem Services (PES) scheme.
- Aceh Besar Regent Regulation No. 3 Year 2014 on Green Subsidy Policy in Fisheries and Wakatobi Regent Regulation No. 9 Year 2016 on Subsidy Policy for Fisheries.

Among programs/activities relating to incentives are:

- Assistance in the permit issuance acceleration for fishing vessels over 30 GT that is willing to be relocated to fishing grounds with consideration on the availability potential and allocation of fishery resources.
- Aids in the form of environmentally friendly Fishing Gear (API) aid packages (including those supporting A Thousand Independent,

Strong, Beautiful, and Developed Fishermen Villages/SEKAYA MARITIM).

- Business transfer assistance for former lobster-hatchling catcher.
- Facilities and infrastructure aids for Conservation Movement Community Groups (Kompak) in the area of maritime and fisheries; and determination of management zones and/or blocks enabling traditional access and utilization within conservation area with a total area of 27,606.56 ha.
- Corporate Performance Rating Assessment Program (Proper), which is aimed at: (1) encouraging companies to comply with laws and regulations through reputation incentives and disincentives, and (2) encouraging companies with good environmental performance to implement cleaner production. <http://proper.menlhk.go.id/portal/>

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

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4. Use of natural resources

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

The achievement of National Target (NT) 4 from the IBSAP 2015-2020, through (1) development of quality and standardization, and (2) preparation of standardization, technology and clean production policies in environmental management contribute to the achievement of ABT-4.

- In the environment sector, a sustainability standardization/criteria has been implemented through ecolabels for Indonesian National Standard-based paper, plastic and/or textile-based products; ecolabels for polyethylene, polypropylene, and/or self-declared textile-based products, as well as a verification system for tools or technology with claims of environmentally friendly performance.
- In the forestry sector, Indonesia has implemented a Sustainable Production Forest Management (PHPL) program, with a total area of 68,831,008 ha as of 2017, through a forest certification scheme to ensure that the Forest Management Unit has a sustainable production function and produces timber or forest products legal wood.

In order to minimize the production of illegal and unsustainable forest products, Timber Legality Verification System (SVLK), Forest Product

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Administration Information System (SIPUHH), as well as the Production Forest Management Unit/KPHP has been developed. Based on information from the Timber Legality Information System (SILK) online database, export activities of forestry industry products equipped with V-Legal documents generally increase from 2016 to 2018.

In regard to seeding of forest plants, efforts to breed, procure, manage and distribute crop seeds has been conducted through the development and management of the Community Seed Nurseries (KBR); Provision of Permanent Seed Nurseries and Provision of Quality Seeds; producing production of Logs from Natural Forests and Sustainable Industrial Plantation Forests and Non-Timber Forest Products (both from Sustainable Production Forests).

Timber forest products are also sourced from ecosystem restoration which is managed through the issuance of Business Permit for Utilization of Timber Forest Products - Ecosystem Restoration (IUPHHK-RE). In forest utilization, through the Social Forestry program, forestry commodity utilization schemes are carried out through Community Forestry (HKm) schemes which are primarily intended to empower local communities and Forestry Partnerships (KK), i.e. cooperation schemes between local communities and forest managers, Forest Utilization Business Permit holders, forest services, borrow-and-use permits on forest areas or holders of business licenses for primary forest products. The use of biodiversity is also carried out in conservation area zones and traditional blocks. Management on the use of animal and plant commodities listed in Appendix II of CITES is regulated through the Minister of Forestry Decree No. 447/Kpts-II/2003, one way of which is the determination of quota.

- In the agriculture sector, the Ministry of Agriculture periodically conducts seed quality testing and applies quality systems to seed testing laboratories.
- In the fishery sector, the priority species are managed through the establishment of full protection and limited trade arranged by the utilization quotas. All of Indonesian Fisheries Management Areas (WPP) (11 WPP) already have Fisheries Management Plans (RPP) in place, which implements an Ecosystem Approach to Fisheries Management (EAFM). Sustainability and supply chain of fisheries are also strengthened by the following efforts:
 - o Eradication of illegal, unreported and unregulated (IUU) fishing practices;
 - o Provision of guidelines and certification systems for the application of good fish farming methods (CBIB);
 - o Control of quality assurance and security system of fishery products as well as production, processing and distribution processes;
 - o Facilitation of partnerships with civil society organizations for sustainable fisheries consumption with the business world through fisheries improvement programs;
 - o Responsible tourism partnerships (Signing Blue); and

- o Sustainable fisheries business transactions between fisherman/fish farmer community groups (JARING-Nusantara).
- In the industry sector, the level of ozone-depleting substances (BPO) type HCFC has depleted from 403.9 Ozone Depleting Potential (ODP) tons in 2013 to 239.5 ODP tons in 2017, representing a 40.7% decrease from ODP in 2013.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

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5. Loss of habitats

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

The implementation of NT-5 directly contributes to the reduction in the rate of loss of natural health globally.

Development of 35 Essential Ecosystem Area (KEE) units as of 2017, or 103% of the targeted number in the IBSAP 2015-2020 with a total area of 710,554.731 ha, which serves as a habitat for wild plants and animals outside conservation area.

Between 2013 and 2017, the total cumulative area of maintained and/or rehabilitated urban forest reaches 2,427 ha, or 48.6% of the targeted cumulative area for 2019 (5,000 ha).

The restoration of degraded ecosystem realized by 2017 within conservation area comprised a total area of 25,943 ha, while rehabilitation of protected forests reached 52,697 ha, forests and land reached 599,783 ha, and restoration of natural forests reached 622,861.59 ha.

Prevention and control of forest and land fires have decreased the number of hotspots from 4,022 spots in 2016 down to 1,809 spots in 2017 across Indonesia.

Ecosystem restoration on degraded marine areas and small islands within 112 coastal and small island areas have been restored. Planting activities are performed through the mangrove ecosystem and coastal vegetation plantation, as well as the development of Mangrove Learning and Restoration Centers (PRPM). The planting activities in 2015 has resulted in the plantation of 6,069,054 mangrove trees and 48,308 coastal vegetations, while in 2016 the number stood at 1,591,930 mangrove trees and 33,866 coastal vegetations².

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¹ DJKSDAE-KLHK. 2018. Statistik Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem Tahun 2017. URL: <http://ksdae.menlhk.go.id/assets/publikasi/Buku%20Statistik%20DJ%20KSDAE%202017.pdf>

- ² KKP. 2018b. Internal meeting of 6th National report Discussion by the Ministry of Marine Affairs and Fisheries on 7th of June, 4th of July, 18th of September, and 12th of October 2018. Mina Bahari Building 3, Jakarta. Contact Details for further information: Muhammad Firdaus Agung Kunto Kurniawan, ST, MSc, PhD (Deputy Director for Convention and Conservation Network, Directorate of Marine Conservation and Biodiversity, Directorate General of Marine Spatial Management, MMAF); Email: subditkonvensidanjejaring@gmail.com
- ³ KLHK. 2018. Laporan Kinerja Kementerian Lingkungan Hidup dan Kehutanan 2017. URL: <http://www.menlhk.go.id/download.php?file=LKJ%202017.pdf>
- ⁴ KLHK. 2018. Statistik Lingkungan Hidup dan Kehutanan Tahun 2017. URL: http://www.menlhk.go.id/download.php?file=stat_2017.pdf

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

National Target 22 on the comprehensive implementation of various conflict settlement processes related to biodiversity also contributes to the achievement of Aichi target 5 (habitat loss halved or reduced).

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6. Sustainable fisheries

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Based on an assessment of the estimated potential of Indonesian fish resources by the Ministry of Marine Affairs and Fisheries (KKP), Indonesia's maximum sustainable yield (MSY) increased dramatically from 7.31 million tons per year in 2013 to 12.54 million tons in 2017¹. (Figure 26).

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Maximum Sustainable Yield (MSY) in Indonesia (million tons/year)

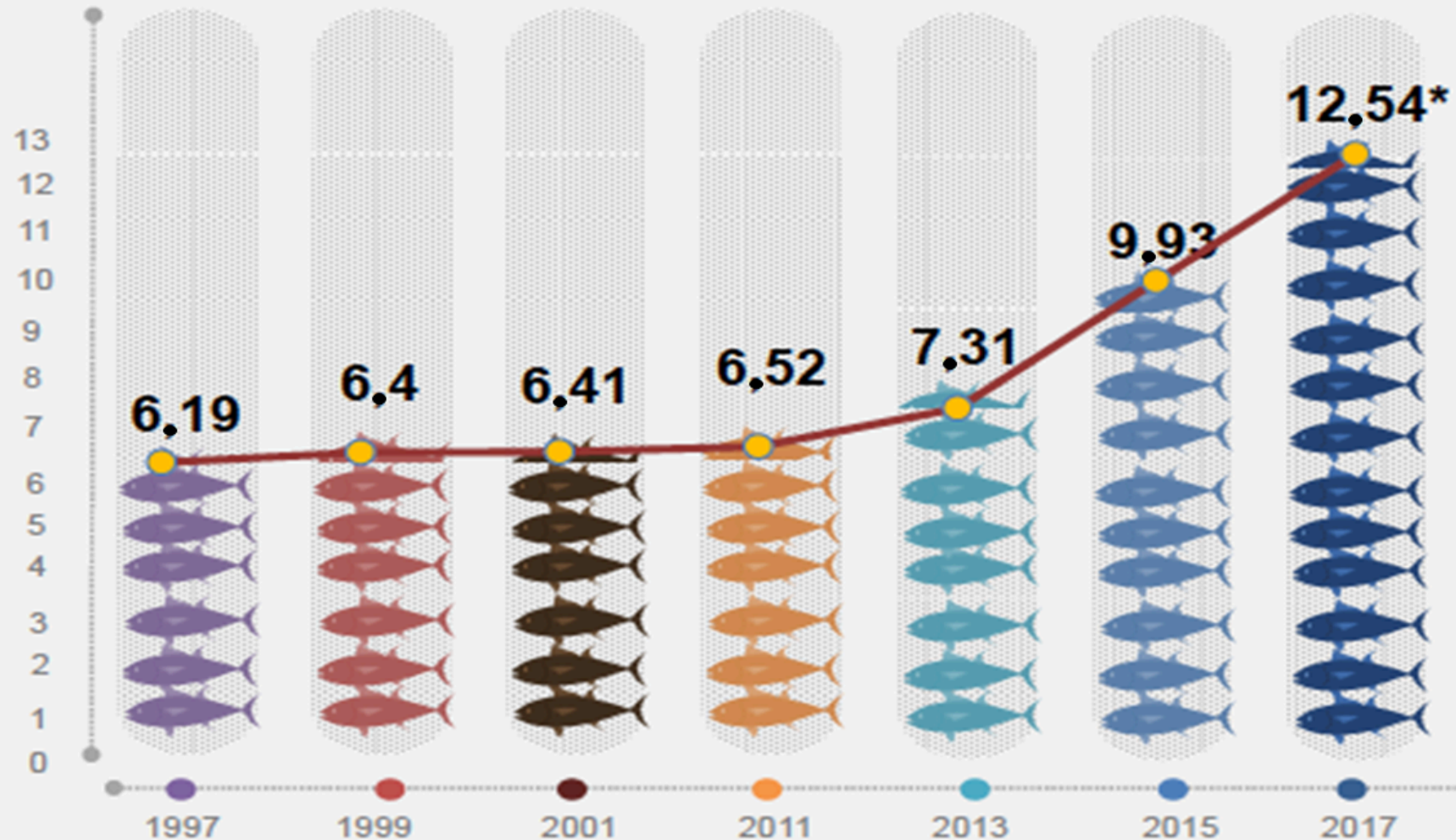


Figure 26. Amount of Indonesian maximum sustainable yield (MSY) (million ton/year)¹

This increase in potential was deemed to result from efforts in eradicating Illegal Fishing in 11 Indonesian Fisheries Management Areas (WPP) during the last 2.5 years. In general, the effort started from the establishment of Illegal Fishing Eradication Task Force in 2015, the

implementation of a moratorium on the issuance of permits for ex-foreign vessels, and the burning and sinking of illegal fishing vessels of foreign parties. This policy has resulted in the increase in fisherman exchange rates (NTN) and the exchange rate of fishermen's business (NTUN) as an indicator for fishermen's welfare¹.

Among the main efforts to ensure sustainability in the marine and fisheries sector are:

1. Potential mapping of marine and fisheries resources in all Fisheries Management Areas (WPP, a total of 11 areas) across Indonesia through assessments based on the Ecosystem Approach to Fisheries Management/EAFM, as well as having a Fisheries Management Plan (RPP) utilizing the EAFM approach.
2. Every WPP also has references for allocation of fish resources for nine catch fisheries commodity groups for both vertebrate groups - among others: small pelagic fish, large pelagic fish, demersal fish, reef fish; also invertebrates - among others: penaeid shrimp, lobster, crabs, portunid crabs, and squid. Each species group has had its Potential Estimation (ton), Allowable Capture Amount (tonnes), and utilization rate index determined³.
3. Application of log books for fishing and catch data records have continued to increase since 2014. Specifically for tuna fishing vessels, the recording is carried out in both Indonesian waters and EEZ. Since 2015, the Indonesian Government requires vessels of more than 30 gross tonnes operating in Indonesian WPP to install vessel monitoring systems.
4. Issuance of a special Fisheries Management Plan for important Indonesian fishery commodities (tuna, skipjack, cob, portunid crab, flying fish, and lemuru fish).
5. Ban on the use of trawls and seine nets in Indonesian WPP since 2015.
6. Management of 20 priority endangered species with full protection status, regulated trade, utilization quota, and limited protection status, an increase from 15 species in 2014.
7. Implementation of bycatch data collection program, especially for sea turtles, sharks, and rays by placing onboard observers and Turtle Excluding Device installations on longlines, purse seines, and gillnet capture devices. This effort was carried out in partnership with civil society organizations (LSMs).
8. Application of market-based incentives such as certifications, i.e. dolphin-safe certification from Marine Stewardship Council, and Aquaculture Stewardship Council on fisheries industry/association. Certification is carried out for at least 34 fishery commodities including tuna, portunid crab, red snapper, grouper, and tiger shrimp.

In improving fisheries management, the Indonesian Government's partnership with LSMs have also resulted in several new breakthroughs, which includes the following:

1. Mapping of Endangered, Threatened, and Protected (ETP) marine species bycatches in Indonesia for sea turtles, various sharks, and dolphins;
2. Increase of ETP bycatch handling capacity for tuna longline fishermen, with a total of 1,660 fishermen in cooperation with WWF-

Indonesia;

3. The implementation of Best Management Practice (BMP) as a guide in handling and mitigating sea turtles caught in long lines or entangled in nets on 118 fishermen in the initial three regions in Java, West Sumatra, and West Kalimantan;
4. Development (research and trial) of the application of ETP bycatch mitigation technology using green LED lights for the initial area in Paloh between 2014 and 2017; and research on the application test for Electronic Shield System (ESS) technology in Bangka Belitung from 2015 to 2017;
5. Rescue initiation of leatherback turtles in Small Kei Islands through cooperation between the government and the Nufit Customary Society until the establishment of a customs agreement document in 2016 regulating the use of leatherback turtles contained in the adat (customary) law mechanism;
6. Monitoring initiation on nesting locations of leatherback turtles on Buru Island since 2016 as an effort to identify the distribution of leatherback turtles;
7. Formulation of National Plan of Action (NPOA) for the conservation of turtles, cetaceans and dugongs (along with seagrass habitats) in Indonesia;
8. Cooperation in mapping and population distribution and habitat of whale sharks and dugongs within the Indonesian waters with Indonesian Institute of Sciences (for dugongs), Bogor Agricultural University, WWF-Indonesia, and Conservation Leadership Programme (for whale sharks).

The Indonesian Government's efforts that contribute to the achievement of AT 6 at the global level include:

1. Ratification of Port State Measure Agreement through Presidential Regulation No. 43 Year 2016.
2. Indonesia's involvement in four Regional Fisheries Management Organizations, each with different membership statuses.
3. Being the first country to share its Vessel Monitoring System data to the Global Fishing Watch.
4. Indonesia has also held the 4th Our Ocean Conference (OOC) in Bali in 2018. The OOC is Indonesia's international effort to help to ensure awareness of stakeholders in capture fisheries and aquaculture sectors is increasingly supportive towards practices and policies supporting SDG 14 (life below water) and nine other related SDGs (Goals 1, 2, 3, 5, 6, 8, 12, 13,15)².

References*:

- ¹ KKP. 2017c. Laut Masa Depan Bangsa: Kedaulatan, Keberlanjutan, Kesejahteraan. URL: https://kkp.go.id/wp-content/uploads/2017/12/BUKU_PUTIH_NEW.pdf
- ² FAO. 2018. The State of World Fisheries of Aquaculture 2018 - Meeting the sustainable development goals. Rome. URL: <http://www.fao.org/3/i9540en/I9540EN.pdf>

³ KKP. 2017. Keputusan Menteri Perikanan dan Kelautan Republik Indonesia Nomor 50/KEPMEN-KP/2017. URL: <http://jdih.kkp.go.id/peraturan/50%20KEPMEN-KP%202017.pdf>

^{*)} See also references in Section III, no. 6.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

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7. Areas under sustainable management

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Achievement of ABT 7 is supported by the establishment of National Targets (NT) 7, which specifically related to the formulation of regulations supporting sustainable management and harvesting of natural resources.

Regarding terrestrial biodiversity, the Indonesian Government has issued a Government Regulation (PP) that regulates the use of unprotected wild plants and animals (TSL). Minister Decrees regulating the collection administration of the collection or capture and distribution of TSL have also been issued. The regulations govern the determination of catch/take quotas in nature, which are limited to unprotected plants and animals, be it for trade needs or for other purposes such as research or consumption. This regulation is also supported by the Ministry of Environment and Forestry Regulation that regulates the preservation of protected TSL species.

In the practice of sustainable forest management, the Indonesian Government began to shift toward a new approach that maximizes the provision of services from the forest on top of production of goods (i.e. timber). In the period between 2013 and 2017, several regulations on new environmental services, such as regulations on natural tourism services, utilization of micro hydropower and geothermal power, utilization of conservation areas, and social forestry and non-timber forest products.

To improve the management of production forests, the Government of Indonesia has established a forest certification system, including a mechanism for chain of custody, through the Timber Legality Verification System (SVLK), and Forest Product Administration Information System (SIPUHH). A Production Forest Management Unit (KPHP) is also established, as well as Online Non-Tax State Revenue Information System (SIMPONI). SVLK has been recognized as an effective instrument by a number of consumer countries such as European Union countries and Australia, thereby enabling the Indonesian Government to issue unilateral Forest Law Enforcement, Governance and Trade

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licenses.

In an effort to overcome the rate of deforestation and towards better and sustainable forest management, in 2015 and 2017 the third and fourth extensions have been carried out for the moratorium on permits for the utilization of primary natural forests. In relation to this, the newest revision (13th) of the Indicative Map on Postponement of New Permits Grant for Forest Utilization, Use of Forest Areas and Allocation Changes (or moratorium map) comprised a total forest area of 66,4 million ha as area on which no rights on production forest area and another use area will be granted.

In the agricultural sector, in the sustainable protection efforts on food agriculture lands, the development of Organic Fertilizer Processing Units (UPPO) continues to increase from 2015 to 2017 in an effort to sustainably protect food agriculture land area. At the same time, supervision is carried out on the production process (on the farm) through prime certification 1, 2 and 3 by the Competent Authority for Food Safety in the regional level (OKKPD) or in the national level (OKKPP). The percentage of fresh food products certified during the period of 2015-2017 reached 90.5%, exceeded the cumulative target set at 80%.

In addition, in order to reduce the consumption of rice as a staple food, advocacy, campaigning, promotion and socialization have been carried out on diversifying local food consumption to government officials and the public. In an effort to promote self-sufficiency in food, the Planting Intensification Area (LTT) has reached 16.39 million ha as of 2017, an increase of 2.34 million ha compared to that of 2014. LTT is an area for sustainable production of foods such as rice, corn, and soybeans as it is done without clearing new paddy fields and is carried out in locations with a limited area of paddy fields.

In regard to marine biodiversity, the Indonesian Government through the Minister of Marine Affairs and Fisheries has issued several Ministerial Decrees and Regulations on the guidelines and certificates on good fish handling methods (CPIB) and good fish breeding methods (CBIB). As of 2018, the Indonesian Government has issued 55 regulations related to fish farming, compiling and implementing Indonesian National Standards for aquaculture, for fisheries test methods and for fisheries products. The number of CBIB-certified aquaculture business has been increasing from 2014 through 2016.

For aquaculture products, aquaculture processing units are required to apply a quality assurance system certificate, i.e. Hazard Analysis Critical Control Point (HACCP) and traceability with an increasing number of certificate issuance during the 2014-2017 period. Some companies also run the Aquaculture Improvement Program to lead to the Aquaculture Stewardship Council (ASC) certification. There has been only one ASC-certified company to date.

The Independent Feed Movement Program (GERPARI) is also conducted to produce local raw materials for fish feed and reduce carbon footprint from imported fish feed ingredients. Local raw material feed production has increased by 300% from 2015 to 2016 and has resulted in a decline in imports of fish feed ingredients up to 27% for the same period. In addition, since 2014, seed systems have

been developed with the strengthening of the broodstock center along with a number of Decrees and Regulations issued by the Minister of Marine Affairs and Fisheries and the Head of the Quarantine Agency Regulation on requirements, controls and guidelines for the implementation of quality and security assurance systems.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

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8. Pollution

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Through efforts to achieve National Target (NT) 8 of the IBSAP 2015-2020, broadly, efforts to reduce pollution are carried out through priority programs/activities set out in the National Medium Term Development Plan (RPJMN) through three approaches: law and environmental enforcement and forestry, pollution control and environmental damage.

The national Environment Quality Index (IKLH) is calculated from air quality, water quality, and land cover indices. For 2016 – 2017, the national air quality index shows an increase from 81.61 to 87.03; national water quality index declined from 60.38 to 58.68; and national land cover index declined from 57.83 to 56.88. Nationally, IKLH increased from 65.73 to 66.46 (Dokumen IKLH Indonesia 2017).

One of the ecosystems experienced significant changes was forests. The extent of forest and land fires in 2017 has dropped dramatically. Based on LANDSAT 8 HS Terra Aqua satellite image data shown in 2017, the area of forest and land fires was 124,743 ha; the number was 438,363 ha in 2016, and 2,611,411 ha in 2015. Apart from the reduced incidence of forest fires, other supporting factor is the overall higher and more persistent rainfall in 2017 than that of 2016.

For water pollutants, at least 5 priority watersheds (DAS), e.g. Asahan Toba, Siak, Moyo, Brantas and Citarum have experienced a downward trend in terms of the flow of coefficient regimes (KRA). For land pollutants, as of 2017, almost half (367.29 million tons) of the targeted number of hazardous and toxic (B3) waste has been managed.

In regard to waste management, as of 2018, only 25% (14.9 tons) of the targeted number of landfills have been managed. In an effort to curb plastic waste, the Indonesia Government has committed to reduce 70% of plastic waste at sea in 2025, as contained in the [National Action Plan on Management of Marine Plastic Waste \(2018-2025\)](#); as a result of cross-sectoral arrangements from 11 ministries, with focus

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in four aspects, i.e. increasing stakeholder awareness, plastic waste management, funding, and institutional support.

Among the efforts to limit pollutant sources is the use of non-B3 biomass waste as an energy source and increasing energy independence for the community. Ministry of Environment and Forestry (KLHK) has built a pilot project for biomass energy supply facilities based on oil palm empty fruit bunches (TKKS) for communities in Jati Datar village, Bandar Mataram District, Lampung Tengah Regency, Lampung Province. In addition, the number and types of B3 circulating and used in Indonesia are recorded through registration, notifications, recommendations and permits; and 100% of Indonesian B3 import requests are always recorded every year.

The compliance percentage of fisheries and non-fisheries business players not resulting in pollution in 2016 was 48.57% (LKJ PSDKP, 2016). The efforts carried out to suppress pollution in the marine and fisheries sector up to 2017 are:

- Obligation to implement processing feasibility certificates for fish processing units (UPI) which includes waste handling. A total of 2,107 fish processing units (UPI) have held certificates of processing eligibility (SKP) in 2017, up from 1084 UPIs in 2014 (LKJ KKP, 2017).
- Issuance of Director General of Capture Fisheries Regulation No. 7/2017 on Technical Guidelines for Hygienic TPI at Fisheries Ports to ensure the hygienic waste management in fishery ports.
- Director General Regulation of PSDKP No. 6 Year 2017 on Technical Guidelines for Monitoring of Water Pollution Due to Fisheries Activities in the Fisheries Management Areas of the Republic of Indonesia.
- Increasing awareness and support for community waste management groups on the coast conducted through the Sea-Loving Movement (GITA LAUT) in 10 locations (DJPRL-KKP, 2018) and Coastal Jamboree and Indonesian Coast School (SPI).
- Mapping of marine biotoxins and heavy metal pollution in 6 locations; monitoring on freshness of fish, residues and hazardous materials in 68 locations, and research has been conducted in relation to pollution in coastal areas and small islands (LKJ BKIPM, 2014-2016).
- Preparation of National Plan of Action for Marine Plastic Debris focusing on 4 aspects: Improving Stakeholders Awareness, Terrestrial and Coastal Plastic Waste Management, Marine Debris Management, and Funding Mechanism and Institutional Supports.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

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9. Invasive Alien Species

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Through efforts to achieve National Target (NT) 9 of the IBSAP 2015-2020, prevention and control of invasive alien species (IAS) is broadly achieved through (1) IAS control through mapping distribution, implementation of regulations, and eradication; (2) institutional development for managing IAS; (3) development of environmentally friendly horticulture crop protection systems; and (4) improving the system and quality of quarantining agriculture, animals and fish and monitoring biosafety.

Management of IAS in Indonesia is a cross-sectoral effort that involves the following parties, among others: the Ministry of Environment and Forestry (KLHK) alongside the Ministry of Agriculture (Kementan), the Ministry of Marine Affairs and Fisheries (KKP), and the Ministry of Health (Kemenkes). In 2015, the government institutions have compiled a [National Strategy and Direction for Invasive Alien Species Management Action Plan](#).

Cross-sectoral efforts were also carried out in the conduct of studies (e.g. distribution mapping), and implementation of regulations, for example, by KLHK, the Indonesian Institute of Sciences (study only), SEAMEO BIOTROP (risk analysis and eradication strategies) and quarantine bodies such as the Agriculture Quarantine Agency at the Ministry of Agriculture (Barantan) and the Fish Quarantine and Quality Control Agency (BKIPM) in the KKP. In 2017, Barantan issued a document titled [Agriculture Quarantine Statistics for the period of 2012-2016](#), and BKIPM has issued a [fishery quarantine statistics website](#) that can be accessed real time on the internet.

From 1990 to 2018, the Indonesian Government has issued 24 rules/regulations relating to IAS. The profile of IAS refers to several databases, among others: [GSID website](#), [Agriculture Quarantine Agency](#), [Ministry of Environment and Forestry Regulation No. P.94 Year 2016](#), and [Ministry of Marine Affairs and Fisheries Regulation No. 41/2014](#).

In implementing IAS control, eradication process is also carried out in a participatory manner alongside the community. For example, the Bromo Tengger Semeru National Park (TNBTS) Management and the people of Ranupani Village are cleaning *Salvinia molesta*, and have managed to restore about 65% of the surface of the lake. In addition, the State College of Fisheries (STP), the official school under the Ministry of Marine Affairs and Fisheries (KKP) took the initiative to develop an application about foreign and invasive species fish called 'AIS Indonesia'. The application has been released to the public and can be downloaded from Google Play with the keywords 'AIS Indonesia' or 'Invasive Indonesia'. By 2015, 11 risk analysis study documents has been generated on the introduction of Invasive Alien Species.

The mapping of the spread of Protected, Restricted, and Invasive Biological Agent Species (JADDI) provides as the inventory of biological agents in a general Indonesian water territory in order to understand the spread of JADDI.

The resulting mapping of JADDI as of 2016 has been mapped in 107 locations. The discovered species are, among others:

- **Protected fish species:** (1) Belida (*Notopterus notopterus*) in DAS Kelekar, DAS Wampu Langkat, DAS Mahakam Hilir, Ranau Lake (2) Botia (*Chromobotia macracanthus*) in Sentarum Lake; (3) Mimi (*Tachypleus tridentatus*) in DAS Bengawan Solo; (4)

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Pesut Mahakam (*Orcaella brevirostris*) in DAS Mahakam;

- **Restricted and/or invasive fish species:** (1) Keong Mas (*Pomacea caniculata*) in Cidanau River (2) Red Devil (*Amphilopus citrinellus*); (3) Sapu-sapu (*Pterygoplichthys pardalis*) Sungai Cidanau, Cirata Reservoir, Ciliwung River, Gajah Mungkur Reservoir, Limboto Lake; (4) Cichlid (*Hemicromis elongatus*) in Darma Reservoir, Konawe River, Cirata Reservoir; (5) *Parambassis* sp. in Cirata Reservoir, Ciliwung River, Limboto Lake.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

Pursuant to the Ministry of National Development Planning/Head of National Development Planning Agency Regulation No. 7 Year 2018¹, a number of policies for the National Medium-Term Development Plan (RPJMN) for 2015-2019 have been adjusted to the Sustainable Development Goals (SDG) No. 15 on land ecosystems. In this case, according to item 15.8 of SDG 15, a number of animal and plant quarantine policies and recommendations have been formulated/defined as the main steps for preventing entry and significantly reducing the impact of invasive alien species on land and water ecosystems, and controlling or eradicate priority invasive alien species.

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References:

¹BAPPENAS. 2018. Peraturan Menteri Perencanaan Pembangunan Nasional / Kepala Badan Perencanaan Pembangunan Nasional Republik Indonesia Nomor 7 tahun 2018 tentang Koordinasi, Perencanaan, Pemantauan, Evaluasi, dan Pelaporan Pelaksanaan Tujuan Pembangunan Nasional. URL: http://birohukum.bappenas.go.id/data/data_permen/Salinan_Peraturan_Menteri_PPN_Nomor_7_Tahun_2018.pdf

10. Vulnerable ecosystems

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Through efforts to achieve National Target (NT) 10 of the IBSAP 2015-2020, the reduction in the levels of anthropogenic pressure on vulnerable ecosystems affected by climate change is broadly achieved through an increase in studies and activities related to climate change adaptation and mitigation.

Studies on climate change adaptation and mitigation for the area of Indonesia has doubled compared to the period before 2015-2018. One of the studies research vulnerable ecosystems of coral reefs. Based on data from the 2015-2016 period, coral cover area categorized as 'very good' has increased. In regard to coral bleaching phenomena occurring on the west coast of Sumatra, the southern coast of Java, Bali, Lombok, NTB, southern Flores, South Sulawesi, and Maluku, rapid monitoring and response has been conducted by the Ministry of

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Marine Affairs and Fisheries (KKP), P2O-LIPI, and Indonesian Reef Check Network. The results of the collaborative monitoring of the coral reefs have encouraged the preparation of Indonesia Coral Bleaching Response Plan.

Since 2014, KKP has also independently performed a number of studies related to climate change on topics such as: habitat rehabilitation, the role of Indonesian throughflow, community adaptive capacity, the impact of climate variability on reef ecosystems and seaweed growing seasons, as well as reviewing losses and damage to the coastal and marine ecosystem due to climate change.

As for climate change mitigation efforts (MTI), the Government of Indonesia has developed a number of climate change mitigation policies and tools in general through a number of regulations, legislation, and formulation of implementation guidelines including those related to First Nationally Determined Contribution (NDC), REDD +, National Registry System for Climate Change Control, and Reporting of National Greenhouse Gas Inventories.

In addition, MTI is also supported by the availability of updated MTI tools in the field of forestry and peatland, including those reviewing baseline conditions, emission factors, activity data, mitigation scenarios, as well as safeguards. The update is applied to documents such as guidelines for field monitoring of MP activities for forestry and peatland, GHG emission calculation guidelines and community based MTI, drafting guidelines for Operationalizing REDD+ Safeguards Information Systems (SIS), guidelines for implementing the National Registry System for Climate Change Control, and guidance on application and implementation of REDD+ at the sub-national level, the NDC Implementation Strategy Book, and the Book of Roadmap for Adaptation and Mitigation of Climate Change and Sustainable Development in Maluku Province.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

Pursuant to the [Ministry of National Development Planning/Head of National Development Planning Agency Regulation No. 7 Year 2018](#)¹, a number of policies for the National Medium-Term Development Plan (RPJMN) for 2015-2019 have been adjusted to the Sustainable Development Goals (SDG) No. 13 on climate change mitigation for the following purposes: (i) Reducing disaster risk and increasing central government, regional government, and community resilience in the wake of disasters; (ii) Developing low-carbon development and climate change adaptation; (iii) Increasing accuracy and speed of analysis and delivery of early warning information (climate and disasters); (iv) Providing and improving quality data and information supporting the sustainable mitigation of climate change; and (v) Increasing speed and accuracy of easily accessible and continuous data and information on Meteorology, Climatology and Geophysics (MKG).

References:

- ¹ KemenPPN/BAPPENAS (Ministry of National Development Planning/National Development Planning Agency). 2018. Peraturan Menteri Perencanaan Pembangunan Nasional / Kepala Badan Perencanaan Pembangunan Nasional Republik Indonesia Nomor 7

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tahun 2018 tentang Koordinasi, Perencanaan, Pemantauan, Evaluasi, dan Pelaporan Pelaksanaan Tujuan Pembangunan Nasional.
URL: http://birohukum.bappenas.go.id/data/data_permen/Salinan_Peraturan_Menteri_PPN_Nomor_7_Tahun_2018.pdf

11. Protected areas

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Broadly, the implementation progress of National Target 11 has contributed to the efforts on achieving ABT 11 through extensive addition and increased effectiveness of conservation area management.

As of 2018, the Indonesian Government has established up to 20.87 million ha out of the targeted 30 million ha by 2030, equivalent to 10% of Indonesia's territorial waters. In 2017, data on conservation area has been updated into the World Database on Protected Areas (WDPA) system.

In supporting the effectiveness of marine protected areas, Conservation Area Network has been established through the Minister of Marine Affairs and Fisheries Regulation No. 13 Year 2014. The effectiveness of marine/coastal/small island conservation areas is measured following the guidelines of the Effectiveness Evaluation on Management of Marine, Coastal and Small Islands Management Areas (E-KKP3K)⁶. Based on evaluations in 2016 and 2017, 58 watershed conservation areas were assessed to increase in effectivity⁴.

As of 2017, total area of conservation area in Indonesia comprises of 22.1 million ha of terrestrial area and 5.3 million ha of water area, consisting of nature reserves, wildlife reserves, national parks, natural tourism parks, great forest parks, hunting parks and nature sanctuary/nature conservation area. The Indonesian government measures the Main Work Indicators (IKU) for terrestrial conservation area management based on METT values (management effectiveness tracking tools)⁵. In 2017, 40 out of 60 conservation areas are targeted to achieve a minimum METT score of 70, an increase compared to 29 units in 2016, and 11 units in 2015.

As an evaluation instrument for the management of National conservation areas, METT is stipulated based on the Director General of KSDAE Regulation No. P.15/KSDAE-SET/2015, and amended by Director General of KSDAE Regulation No. P.12/KSDAE/SET/KUM.1/12/2017. The results of the METT assessment (<http://ksdae.menlhk.go.id/assets/publikasi/>) are also submitted to WDPA (<https://pame.protectedplanet.net/>) and is incorporated in the Protected Planet Report 2018 (https://livereport.protectedplanet.net/pdf/Protected_Planet_Report_2018.pdf).

In the management of forest areas, involvement and institutions of customary law communities are one of the main considerations in establishing forest management unit (KPH), be it for conservation forest, production forest, or protected forest⁷. Conservation forest

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management unit (KPHK) is a management unit up to the site level and KPHK management area at the management unit level is conducted taking into account land characteristics, forest types, forest functions, watershed conditions, social culture, economy, local community institutions including legal communities customs and administrative boundaries.

Social Forestry (PS) is a sustainable forest management system carried out by local communities to improve welfare, balance the environment and socio-cultural dynamics. PS is implemented in village forest schemes, community forests, community plantations, customary forests, and forestry partnerships. The total area of customary forest which management has been stipulated exceeds 13,000 ha across 26 customary forests.

¹ DJKSDAE-KLHK. 2018 Statistik Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem Tahun 2017. URL: <http://ksdae.menlhk.go.id/assets/publikasi/Buku%20Statistik%20DJ%20KSDAE%202017.pdf>

² KKP. 2018b. situs KKP URL: <https://kkp.go.id/>

³ KLHK. 2018. Laporan Kinerja Kementerian Lingkungan Hidup dan Kehutanan 2017. URL: <http://www.menlhk.go.id/download.php?file=LKJ%202017.pdf>

⁴ KKP. 2018. Laporan Kinerja Kementerian Kelautan dan Perikanan. URL: [http://kkp.go.id/an-component/media/upload-gambar-pendukung/kkp/LAPORAN/Laporan%20Kinerja%20KKP%202017%20\(REV_4-%20\(28Maret\).pdf](http://kkp.go.id/an-component/media/upload-gambar-pendukung/kkp/LAPORAN/Laporan%20Kinerja%20KKP%202017%20(REV_4-%20(28Maret).pdf)

⁵ DJKSDAE-KLHK. 2017. Pedoman Penilaian Efektivitas Pengelolaan Kawassan Konservasi di Indonesia. Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem-Kementerian Lingkungan Hidup dan Kehutanan. URL: http://ksdae.menlhk.go.id/assets/publikasi/Pedoman_Penilaian_Efektivitas_Pengelolaan_KK_di_Indonesia.pdf

⁶ DJPRL-KKP. 2018. Efektivitas Pengelolaan Kawasan Konservasi. Direktorat Jenderal Pengelolaan Ruang Laut – Kementerian Kelautan dan Perikanan. Basisdata Daring. Diakses tanggal: Oktober 2018. URL: <http://kkji.kp3k.kkp.go.id/index.php/ekkp3k>

⁷ KLHK. 2018. The State of Indonesia's Forest. Kementerian Lingkungan Hidup dan Kehutanan. URL: http://www.menlhk.go.id/download.php?file=the_state_indonesia_forests_2018_Book.pdf

⁸ KLHK. 2018. Hasil Iptek Pengelolaan DAS, Dukungan Pemulihan DAS Kritis di Indonesia Pers Release. Kementerian Lingkungan Hidup dan Kehutanan URL: <http://dassolo.litbang.menlhk.go.id/berita/baca/243/hasil-ipitek-pengelolaan-das-duktungan-pemulihan-das-kritis-di-indonesi>.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

12. Preventing extinctions

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

In the efforts to maintain populations of endangered species, certain management stages has been established for both terrestrial and marine animals suffering from population pressure ad vulnerability. Since 1999, Government Regulation No. 7 Year 1999 on Preservation of Plants and Animals Species has been published.

Based on Minister of Environment and Forestry Regulation No. P.20 Year 2018 in conjunction with P.92 Year 2018, it is established that the list of protected plants and animals species comprise of 137 mammal species, 557 bird species, 1 amphibian species, 37 reptile species, 20 fish species, 26 insect species, 1 crustacean species, 5 molluscs species, 3 xiphosuran species, and 117 plants species. In regard to priority species of protected and/or endangered marine biota groups, the relevant protection management is carried out based on Government Regulation (PP) RI No. 60 Year 2007 on conservation of fish resources. The implementation of the PP includes a National Action Plan for the management of 20 priority species of protected and or endangered marine biota.

In order to protect and preserve the priority marine biota species threatened with extinction, several species have been designated protected species by the Indonesian government. In addition to establishment of the protection status, the Indonesian government has also protected several important habitats serving as spawning areas, foster areas, and/or foraging areas for these species to be included within the conservation areas. As of 2018, 172 locations of conservation areas have been established. 20 priority species of protected and/or endangered biota as stipulated by Ministry of Marine Affairs and Fisheries (KKP) are arowana fish, napoleon, terubuk, Banggai cardinal fish, eels, whale sharks, saw rays, sunfish, sea horses, sharks, turtles, softshell turtle, Giant clam, lola, sea cucumbers, sea bamboos, hard corals, dugongs and marine mammals (whales and dolphins).

Among the regulations stipulated by KKP are:

- Minister of Marine Affairs and Fisheries Regulation (PermenKP) No. 18 Year 2009 on the Prohibition of Eel (*Anguilla* spp.) Seed Importation outside of the Indonesian Territory;
- Minister of Marine Affairs and Fisheries Decree (KepmenKP) No. 59 Year 2011 on Establishment of Limited Protection Status for Terubuk Fish (*Tenuolosa macrura*);

- PermenKP No. 37 Year 2013 on Establishment of Limited Protection Status for Humphead wrasse (*Cheilinus undulatus*);
- KepmenKP No. 18 Year 2013 on Establishment of Full Protection Status for Whales (*Rhincodon typus*);
- KepmenKP No. 04 Year 2013 on Establishment of Full Protection Status for Manta Rays (*Manta spp.*);
- KepmenKP No. 46 Year 2014 on Establishment of Limited Protection Status for Bambu Laut (*Isis hippuris*);
- KepmenKP No. 43 Year 2016 on Establishment of Limited Protection Status for Terubuk Fish (*Tenualosa illsha*);
- PermenKP No. 5 Year 2018 on Prohibition on Importation of Oceanic Whitetip Shark (*Carcharhinus longiman*) and Hammerhead Shark (*Sphyrna spp.*) outside of Indonesian Territory.

<https://kkp.go.id/an-component/media/upload-gambar-pendukung/KKHL/BUKU/Status%20Kehati%20Laut%20Biota%20Prioritas.pdf>

In an effort to maintain the population of endangered species in the terrestrial region, the Director General of KSDAE Decree No. SK.180/IV-KKH/2015 on Assignment of Twenty-Five Priority Endangered Animals for Population Increase by 10% in monitoring locations for 2015-2019 has been issued. Population increase is measured based on monitoring on the monitoring site and population. Based on Director General of Marine Space Regulation No. 2/PER-DJPRL/2016 on strategic plan of the Directorate General of Marine Space Management for 2015-2019, management of 20 priority species of protected and/or endangered marine biota has been conducted through full protection, limited protection, and trade arrangements through utilization quotas.

The implementation results from management of priority endangered animals from 2015 - 2018 is the increasing population of animals, e.g. Java rhinos from 63 to 68, Javan gibbon from 546 to 1107, Sumatran elephants from 611 to 693, Sumatran tigers from 180 to 220, and Java eagle from 91 to 113 individuals.

In order to increase the effectiveness of environment and forestry law enforcement through Ministerial Regulation P.18/MenLHK-II/2015 on organization and work procedures of the Ministry of Environment and Forestry, a special work unit called Directorate General of Environmental and Forestry Law Enforcement is established. In handling illegal wildlife distribution in the period of 2015-2018, 247 operations have been carried out with 170 cases processed all the way to legal proceedings, through which 11,609 living animals and 222,089 animal body parts have been successfully secured. In addition, efforts are made to impede and halt encroachment, forest fires, habitat fragmentation and conversion of forests to wildlife habitat.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

Below are the contributions of several Sustainable Development Goals targets:

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- Target 12.2 manages and protects marine and coastal ecosystems in a sustainable manner to avoid significant adverse impacts, including by strengthening the ecosystem's resilience and conduct restorations to create a healthy and productive ocean environment.
- Target 14.5 preserves at least 10 percent of coastal and marine areas, consistent with national and international laws and based on the best available scientific information.
- Target 15.1 guarantees the preservation, restoration and sustainable use of terrestrial and inland water ecosystems and their environmental services, especially forest, wetland, mountainous and dryland ecosystems, in line with obligations under international agreements.
- Target 15.7 takes swift action to end hunting and trade of protected flora and fauna species and to deal with illegal demand and supply of wildlife products.

The achievement of ABT 12 is also supported by National Target 21 on the comprehensive and integrated mapping of overall biodiversity data and information that contributes to assessing the current status of biodiversity, including the potential for extinction in nature, and National Target 22 on the settlement of various conflicts relating to comprehensive management of biodiversity contribute to the achievement of this Aichi target.

13. Agricultural biodiversity

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

In safeguarding genetic diversity, National Target 13 may contribute positively to the achievement of Aichi Biodiversity Target 13. Management of germplasm in Indonesia is carried out by various Institutions in various fields such as forestry, agriculture, plantations, the environment, educational and private institutions. To increase its management effectiveness, in 2001, through the Minister of Agriculture Decree (Kepmentan) No. 341 Year 2001 a National Germplasm Commission was established and in 2018 through Kepmentan No. 217 Year 2018 the institution's name was amended to National Commission on Genetic Resources (Komnas SDG) that is expected to serve the following functions:

1. Performing coordination and building collaborations with related parties in the aspects of research and development, policies and regulations on genetic diversity, and sustainable preservation and utilization of genetic resources,
2. Increasing public awareness on the importance of preservation and utilization of genetic resources,

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3. Performing analysis on the development of preservation and utilization of genetic resources.

Regional Commission on Genetic Resources (Komda SDG) has been established in 28 out of 34 Indonesian provinces.

In order to prevent genetic erosion of flora, fauna and livestock and fish, addition, several laws and regulations have been issued, which are among others:

- a. **Minister of Forestry Regulation No. P.1 Year 2009 on Forest Plant Seeding,**
- b. [Minister of Forestry Regulation No. P.28 Year 2010](#) on Distribution Monitoring of Forest Plant Seeds,
- c. [Minister of Environment and Forestry Regulation No. P.33 Year 2015](#) on Guidelines for the Construction of Forest Management Units,
- d. [Minister of Environment and Forestry Regulation No. P.88 Year 2018](#) on People Seed Garden,
- e. [Minister of Agriculture Decree No. 631 Year 2006](#) on National Commission of Livestock Seed,
- f. [Minister of Agriculture Regulation No. 35 Year 2011](#) on Control of Productive Female Ruminant Livestock,
- g. [Minister of Agriculture Decree No. 511 Year 2006](#) on Planted Commodities Species Under the Directorate General of Plantations, the Directorate General of Food Crops and the Directorate General of Horticulture,
- h. [Minister of Agriculture Regulation No. 38 Year 2011](#) on Registration of Horticultural Plant Varieties,
- i. [Minister of Agriculture Regulation No. 37 Year 2011](#) on Preservation and Utilization of Plant Genetic Resources,
- j. [Minister of Agriculture Regulation No. 15 Year 2017](#) on Import and Export of Horticultural Seeds,
- k. [Minister of Marine Affairs and Fisheries Decree No. 7 Year 2004](#) on Procurement and Circulation of Fish Seeds,
- l. [Minister of Marine Affairs and Fisheries Regulation No. 35 Year 2016](#) on Proper Ways of Fish Hatching,
- m. [Head of the Fish Quarantine Agency, Fisheries Product Quality and Safety Control Decree No. Kep.460 Year 2011](#) on Integrated Technical Guidelines for Fish Quarantine Measures based on an in-line inspection at Fish Hatchery, Enlargement, and Collection/Collecting Units,

Preservation of genetic resources in Indonesia is basically performed either in-situ or ex-situ. In situ conservation is carried out in conservation areas with a total area of 42.9 million ha comprising both terrestrial and marine landscape. Ex situ preservation efforts on genetic resources are carried out in areas managed as:

1. Biodiversity Park, based on Minister of Environment Regulation No. 3 Year 2012 on Biodiversity Park, is an area used to preserve species diversity outside of forest area having in-situ and/or ex-situ conservation functions, especially for plants which pollination and/or seed dispersion must be assisted by animals with structure and composition of vegetation that can support the preservation of pollinators and seed dispersers. Biodiversity Parks are used to collect of plants, breeding of plants and animals supporting seed providers; genetic sources of local plants and plants; means of education, research, development of science and ecotourism; source of seeds and seeds; green open space and/or additional vegetation cover. During 2015-2017, 22 Biodiversity Parks have been established with a total area of 1,715.841 ha.
2. Breeding of natural plants and wildlife: Breeding activities is performed by government alongside communities in supporting the achievement of wildlife domestication and breeding of wild species. There are 1018 natural plant and animal breeders as of 2017.
3. Conservation agencies: mainly function in relation to controlled breeding or rescue efforts of plants and animals while maintaining their species purity. They also function as a place of education, demonstration, temporary care, sourcing of parental and genetic reserves to support in-situ populations, healthy recreational facilities, and research and development in science.
4. Gene Bank Agricultural Research and Development Agency: Conservation of agricultural germplasm at Gene Bank is conducted in the form of seed collections for rice, corn, sorghum, soybean, peanut, green beans, various potential beans, and wild rice. Gene Bank also collected cassava germplasm, sweet potatoes and minor tubers, such as purple yam (*uwu*), taro, lesser yam, canna, arrowroot, and *iles-iles*. In addition, in vitro conservation was also carried out for several accessions of cassava germplasm, sweet potatoes and taro.
5. Germplasm Collection Garden for other agricultural plantations such as fruit plantations, garden plantation is spread within various in various government research institutions according to the mandated commodities handled.
6. Conservation of genetic diversity of livestock genetic resources is carried out by the Center for Animal Research and Development (Puslitbangnak)., especially for cowcattles, through isolation/selection of superior cattle on islands devoid of other cattle species to prevent crossbreeding with other cattle. For example, preservation of Bali cattle is carried out on Nusa Penida Island (Klungkung Regency) to maintain genetic purity and the Provincial Government of Bali has begun an effort to certify Bali beef genetic resource on the island.
7. Fish breeders network: founded pursuant to Minister of Marine Affairs and Fisheries Decree (KepmenKP) No. 20 Year 2015 to increase the effectiveness and efficiency of coordination in fish breeding activities to support the success of superior parent and quality seed production. The fish species targeted for breeding include Tilapia, Patin, Catfish, Carp, Carp, Shrimp, black tiger shrimp, vaname shrimp, mangrove crabs, groupers, pearl oysters, abalone, seaweed seeds, ornamental fish, snapper, and

milkfish. In order to enrich the types of fish circulating in the community, 17 Ministerial Decrees have been issued regarding the release of species including 17 types/varieties, including: Papuyu Fish, Red Najawa Goldfish, Mandalika Catfish, Batanghari Gourami, Pearl Catfish, Rajadanu Super RD Carp, KHV disease-resistant Rajadanu Carp, Jayasakti Carp, Kelabau Fish, Marwana Carp, Nirvana III Tilapia, Gondol Milkfish, Tawes Jois Fish, Tambakan Takhasi Fish, Punten Carp, Sago Gurami Fish, Kurumoi Rainbow Fish. 207 seaweed seed area has also been developed between 2016-2017. Engineering on applied technology in the aquaculture field is also performed to maintain the sustainability of germplasm, with 366 technological engineering having been conducted between 2012-2016.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

Contributions from the Sustainable Development Goals target, i.e. Target 2.5, help manages the genetic diversity of cultivated plants and livestock and domestic animal and related species, including through well managed and diversified seed and plant banks at national, regional and international levels, and improve access to fair and equitable distribution of benefits, proceeds from utilization of genetic resources, and knowledge.

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14. Essential ecosystem services

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Efforts to preserve ecosystems have been carried out to maintain the availability of essential environmental services, such as water supply, health and community welfare by taking into account the needs of all levels of society, including the needs of women, indigenous peoples and local communities. The ecosystem maintenance and preservation efforts carried out also contribute to the achievement of Aichi Biodiversity Target 14.

For terrestrial ecosystems, efforts to maintain and preserve ecosystems are carried out on watersheds. Meanwhile, for coastal ecosystems and small islands, ecosystem maintenance and preservation efforts are carried out based on regional zoning. Recovery of degraded watersheds or maintenance and protection of watersheds will aid in ensuring the availability of watershed ecosystem services, such as the availability of clean water in the long term.

During the period from 2010-2014, rehabilitation and function restoration efforts has been conducted for 108 priority watersheds (DAS). For 2015-2019, the handling of DAS restoration is prioritized DAS requiring great effort for restoration, i.e. DAS Asahan Toba, DAS Musi,

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DAS Siak, DAS Way Sekampung, DAS Cisadane, DAS Ciliwung, DAS Citarum, DAS Serayu, DAS Solo, DAS Brantas, DAS Kapuas, DAS Moyo, DAS Jenebarang, DAS Saddang, and DAS Limboto.

In regard to zoning of coastal areas and small islands zones, maintenance, protection and utilization can be carried out based on their carrying capacity. Ministry of Marine Affairs and Fisheries has identified potential and carrying capacity of coastal ecosystems and small islands in 34 provinces as baseline data in developing zoning plan for coastal areas and small islands to serve as references for the utilization of coastal and small islands. In optimizing environmental services in the marine and fisheries sector, the development of marine tourism areas in 14 provinces and 28 regencies/cities has also been carried out. As of 2018, a total of 548 marine tourism sites have been developed.

Among the efforts in the development of coastal areas and small islands are:

- i. Facilitated investment and economic development for 15 small islands
- ii. Improved coastal resilience for 141 coastal villages through infrastructure assistance for climate change mitigation and adaptation
- iii. Revitalization/restoration of 9 coastal areas as center of economic development
- iv. Development of zoning plans and/or masterplans and business plans for 254 locations in the sea and coastal areas as a reference for the development of benefits and coastal development.
- v. Development of 13 coastal areas and islands into integrated marine and fishery centers; this is expected to increase capture fisheries production and increase regional economic growth, especially in small islands, while maintaining sustainability and preserving biodiversity.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

The following is a list of relevant contributions from several Sustainable Development Goals targets:

- i. Target 6.1 on achieving universal and equitable access to safe and affordable drinking water for all.
- ii. Target 6.5 on the application of integrated water resources management at all levels, including through appropriate cross-border cooperation.
- iii. Target 6.6 on protecting and restoring ecosystems relating to water resources, including mountains, forests, wetlands, rivers, groundwater and lakes.

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15. Ecosystem resilience

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Conservation and restoration efforts have been performed in order to increase both the resilience of ecosystems and the contribution of biodiversity to carbon stocks. The ecosystem conservation and restoration efforts carried out also contribute to the achievement of Aichi Biodiversity Target 15. Reforestation has been carried out through planting, as well as the development of terrestrial and marine conservation infrastructures. During 2015 – 2017, forest and land rehabilitation were carried out on a total area of 599,783 ha, with a total of 15,213 units of terrestrial and marine conservation buildings. The community seed garden is also encouraged to be developed as community forests where standing stock fluctuates during the harvest period. The figure in 2017 amounted at 20.13 million m³.

A successful example is the use of peatland in Ogan Kemering Ilir Regency, South Sumatra Province and Tumbang Nusa Pulang Pisau Regency, Central Kalimantan Province as a reference in national and international peat rehabilitation.

There have been many rehabilitation and/or restoration activities being carried out in collaboration with local communities such as in Ciremai National Park, Gunung Gede Pangrango National Park, and Merapi National Park. Rehabilitation and/or restoration involving the surrounding communities ultimately strengthens mutually beneficial relations for the region as well as the communities.

The total mangrove seedlings planted in rehabilitation activities as of 2017 were 14,953,500 stems on 1,500 ha of land. 112 damaged coastal areas have recovered during the 2015-2017 period (KKP, 2018b). Mangrove rehabilitation in the coastal area was subsequently developed as a tourist attraction through the development of Mangrove Learning and Restoration Center (PRPM).

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Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

Relevant contributions from Sustainable Development Goals target is Target 6.6 on protecting and restoring ecosystems relating to water resources, including mountains, forests, wetlands, rivers, groundwater and lakes.

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16. Nagoya Protocol on ABS

Description of how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target

The Nagoya Protocol has been ratified through Act No. 11 Year 2013 on Ratification of Nagoya Protocol on Access to Genetic Resources and Fair and Equitable Sharing of Benefits of Arising from Their Utilization of the Convention on Biological Diversity.

Regulations on access to genetic resources and their utilization, especially the preservation and utilization of plant genetic resources,

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are regulated in Minister of Agriculture Regulation (Permentan) No. 15 Year 2009 (Ministry of Agriculture, 2009) for work units within the Agricultural Research and Development Agency, Permentan No. 37 Year 2011 (Ministry of Agriculture, 2011), Permentan No. 217 Year 2018 on National Commission on Genetic Resources, and Head of Regulation of LIPI No. 9 Year 2014 (LIPI, 2014) for material transfer agreements in LIPI, and Minister of Health Regulation No. 657 Year 2009 on shipments and use of clinical specimens, biological material and information content (Ministry of Health, 2009).

The implementation of Nagoya Protocol on genetic resources (SDG) and benefit sharing for their utilization (ABS) is stipulated through the Minister of Environment and Forestry Regulation No. P.2 Year 2018 on Access to Genetic Resources of Wild Species and Benefit Sharing of Their Use (KemenLHK, 2018). This regulation is intended to serve as a reference for those accessing the use of SDG and/or traditional knowledge (PT) on SDG related to wild species; wild species SDG and/or PT-SDG providers in providing PADIA-Prior Informed Consent and form joint agreements in the distribution of fair and balanced benefits for the use of SDG and/or PT-SDG relating to wild species; competent national authorities granting permission to access wild species SDGs. The scope of this regulation comprises access to SDG and/or PT-SDG of wild species for non-commercial and commercial purposes, transfer of material, institutions, guidance, and supervision and sanctions. The wild species referred to in this regulation are species of plants or animals or microorganisms or others still possessing species purity or wild traits, be it relating to those living in their natural habitat (in-situ), outside their natural habitat (ex-situ) or taken care of by humans.

In regard to the implementation and effectiveness of access to wild species genetic resources (SDG) and benefit sharing on their utilization, Access & Benefit Sharing Clearing House (ABSCH) has also been developed. ABSCH is the main means for facilitating the implementation of the Nagoya Protocol through improving transparent procedures and certainty of law for access and sharing of benefits from the use of SDGs, as well as monitoring the use of SDGs. Management of Indonesia's genetic resources is carried out by the Clearing House for Access and Benefit Sharing for the Use of Genetic Resources with the Secretariat at the Directorate of Biodiversity Conservation, Directorate General of Natural Resource Conservation and Ecosystems, Ministry of Environment and Forestry. The ABSCH Indonesia website can be accessed here: <http://www.abschindonesia.menlhk.go.id>.

In order to simplify the permit process for the use of SDG, an Online Licensing System for the Use of Genetic Resources (SPOPSDG) has been established, which can be accessed through the following website: <http://www.graccess.co.id/auth>. The relevant permit procedures, the Initial Informed Consent-PIC (PADIA) form for access to genetic resources and Mutually Agreed Terms (MAT) and related laws and regulations can be accessed on the SPOPSDG website.

However, regulatory instruments that are specific to access to genetic resources and fair and equitable benefit-sharing from the use of genetic resources over the Convention on Biological Diversity have yet to be regulated. In addition, recognition and efforts to protect traditional knowledge related to genetic resources and the utilization of traditional knowledge wealth, especially the distribution of benefits resulting from its utilization, have also not been regulated in legislation.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

There have not been any other activities contributing to the achievement of ABT 16.

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17. NBSAPs

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

National Target (TN) 17, which is the implementation of new IBSAP implementation at various levels can contribute to the achievement of ABT 17. National Target 17 is implemented through the preparation and establishment of the IBSAP 2015-2020 institutions and implementation of monitoring and evaluation and reporting of the IBSAP 2015-2020 implementation. Such implementation can take place in the national level in accordance with the achievement plan of national targets set out in the IBSAP as the activity groups planned in the IBSAP have been mainstreamed in Ministries/Institutions (K/L) planning. As for the planning and implementation of regional strategies and action plans, several regional governments have prepared regional biodiversity profiles and master plans for regional biodiversity management. ([KemenPPN/BAPPENAS](#) 2016).

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Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

Relevant contributions from Sustainable Development Goals target is Target 15.9 on integrating ecosystem and biodiversity values into national and regional planning, development processes, as well as strategies and budgeting for poverty alleviation.

National Target 21 on implementation of a comprehensive and integrated data mapping on biodiversity information also contributes to the achievement of this Aichi target.

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18. Traditional knowledge

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Efforts to respect and adopt traditional knowledge, customs and habits of local communities in carrying out conservation and sustainable use of biodiversity have been carried out through regulations and legislation. This effort may contribute to the achievement of ABT 18. The

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presence of indigenous peoples' units along with their traditional rights is recognized and respected, based on [Minister of Environment and Forestry Regulation No. P.34 Year 2017](#) on recognition and protection of local wisdom in the management of natural resources and environment. Several other laws and regulations are:

- Minister of Home Affairs Regulation No. 52 Year 2014 on guidance for recognition and protection of customary society
- Minister of Marine Affairs and Fisheries Regulation No. 40 Year 2014 on community participation and empowerment in the management of coastal areas and small islands,
- Minister of Marine Affairs and Fisheries Regulation No. 8 Year 2018 on the procedure for establishing customary law community management areas in the spatial use of coastal areas and small islands,
- Obligation to identify customary law community management areas and related institutions in the Zoning Plan for Coastal Areas and Small Islands (RZWP3K) that serves as a reference for the development of coastal areas and small islands.

As of 2017, 5 customary laws and local wisdom have been revitalized and established, as follows:

1. Local wisdom Kaombo, on Siompu Island, Siompu District and Siompu Barat District. South Buton Regency, Southeast Sulawesi Province; has been recognized by the state through Regent of South Buton Regulation No. 24 Year 2017 on Protection and Management of Local Wisdom-Based Marine Resources in Siompu Island Area in South Buton Regency.
2. Local wisdom of Alloa Waras, Mangur and Kaimear, Kur Islands District and West Kur, Tual City, Maluku Province; has been recognized by the state through Mayor of Tual Regulation No. 43 Year 2017 on Customary Law and Local Wisdom in Management and Protection.
3. Local wisdom of Sasi Lompa, Haruku Island, Haruku Island District, Central Maluku Regency, Maluku Province; Regent of Central Maluku Regulation No. 81 Year 2017 on Customary Law and Local Wisdom in the Protection and Management of Marine Resources in Negeri Haruku, Central Maluku Regency.
4. Local wisdom of Sasi (Egek), in Um Island, Malaumkarta Subdistrict, Makbon District, Sorong Regency, West Papua Province; has been recognized by the state through Regent of Sorong Regulation No. 7 Year 2017 on Customary Law and Local Wisdom in the Management and Protection of Marine Resources in Malaumkarta Subdistrict, Makbon District, Sorong Regency.
5. Local wisdom of Wehai, in Kadie Liya, Wangi-wangi District, Wakatobi Regency, Southeast Sulawesi Province; has been recognized by the Regent of Wakatobi Regulation No. 40 Year 2017 on Protection and Management of Coastal and Marine Resources Based on Indigenous Law Community of Kadie Liya, Wangi-wangi Selatan District, Wakatobi Regency.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

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19. Biodiversity knowledge

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Efforts to improve the dissemination of science and knowledge relating to biodiversity may contribute to ABT 19 and are generally facilitated through the Indonesian Biological Diversity Clearing House Mechanism (BKKHI) that serves the following functions:

- Reconciling users and providers of data or information relating to biodiversity,
- Monitoring the implementation of CBD, including the performance of the IBSAP,
- Facilitating access for data and information exchange between stakeholders in biodiversity at the national, regional and international scale,
- Assisting the efforts on introduction and implementation of the IBSAP alongside the national targets.
- Providing reference services in facilitating regional, national and global scientific and technical cooperations.

Various Ministries/Agencies efforts to provide access to information and in various biodiversity management areas include:

- Social Forestry Management Access (AKPS) is an online service for access management for Community Forestry (HkM), Village Forest (HD), and Community Plantation Forest (HTR) that is intended for communities or community groups who wish to gain access to regional management.
- Conflict, Tenurial and Customary Forest Complaint Services (PKTHA) are online services for complaints of tenure conflicts and proposals for customary forests and customary law communities.
- Spatial and Documentation Information System (Sinpasdok KPH+) is an information system related to KPH.
- Business Development for Social Forestry and Customary Forests (BUPSHA) is a spatial information system for developing social forestry enterprises.
- Preparation of Social Forestry Zone (PKPS) is an information system containing indicative maps and social forestry areas (PIAPS), i.e. forest area allocations that can be submitted by the community for social forestry.
- Social Forestry Navigation System (SiNaVPS) is a navigation system that houses online service nodes relating to social forestry.
- National Waste Management Information System (SIPSN) is a system of information and data on waste management.

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- Monitoring System for Forest and Land Fires (SiPongi).
- National Forest Monitoring System (Simontana).
- Geospatial Information System of the Ministry of Marine Affairs and Fisheries (GISKKP).
- One Stop Integrated Service System, of the Ministry of Marine Affairs and Fisheries (PTSP)
- Fisheries Ship Registration Information System (Sipalka)
- Application of Indonesian Fisheries Business Development (PUPI)
- The Smart Fishermen Information System has been implemented since 2015 in 48 fishing ports. The system contains information on fishing area forecast maps (PPDPI), weather, wave and wind information, port information, fish prices and fuel forecast menus, and help menus. Some of the priority ports for implementation are PPP Muncar (Banyuwangi), PPI Dumai (Dumai), PPI Pulau Tiga (Natuna), PPI Bengkalis (Bengkalis), PPI Amurang (South Minahasa), PPP Labuhan Lombok (East Lombok), PPP Kupang (Kupang), Bullielng PPI (Buleleng), Pontap PPI (Palopo), Labuhan Bajo PPI (West Manggarai), Lonrae (Bone) PPI, Tual PPN (Tual), Manitinting PPI (East Halmahera), Sorong PPI (Sorong), PP Merauke (Merauke), PPI Dufa-dufa (Ternate), PPI Wersar (South Sorong).
- SiDIDI is a protected fish surveyor application administered by the Central Management of Makassar Sea Coast Resources (BPSPL Makassar), Directorate General of Marine Space Management.
- SIMAIL is an information system on disasters, climate change, and environment in the marine and fisheries sector, disseminated through short messages services (SMS), running text display, and notifications via Android OS.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

Activities in National Target 21 on implementation of a comprehensive and integrated data mapping on biodiversity information contributes to the achievement of this Aichi target.

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20. Resource mobilization

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Efforts to identify and mobilize funding sources for effective implementation of the IBSAP 2015-2020 have been carried out and are expected to be in line with ABT 20. Study on sustainable funding for conservation areas studies have been carried out on funding for [Biodiversity Finance Initiative \(BIOFIN\)](#) for sustainable management and utilization of biodiversity. There are several pilot projects on trust

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fund development for management and conservation in Raja Ampat through the [Blue Abadi Trust Fund](#), Tropical Forest Conservation Action (TFCA) in [Sumatra](#) and [Kalimantan](#) and pilot project for financial management of Public Service Agencies Regions in [KKP Raja Ampat](#).

National expenditure has been successfully mapped in each ministries/institutions relating to the management of biodiversity, which amounts to Rp21.2 trillion in the 2014-2016 period.

The expenditure is allocated for Action Plan 2, Development of Biodiversity Utilization (37%) and Action Plan 3 Maintenance and Preservation of Biodiversity (40%); the rest is for Action Plan 1, Research, Data Management and Documentation of Biodiversity; and Action Plan 4, Capacity Building for Biodiversity. The activity group with the largest proportion in Action Plan 2 is the management of conservation areas and essential ecosystems and the restoration of ecosystems outside the conservation area. In addition, in 2006-2016 the Government of Indonesia has received funding related to natural management and preservation of USD. 296 million, consisting of loans (85% or IDR 2.9 trillion) and grants (15% or IDR 462 billion) (PKPPIM, 2018).

In order to increase investment and accelerate industries in the marine and fisheries sector, the Government issued a Presidential Regulation [No. 3/2017](#) on Action Plan for Accelerating the Development of the National Fisheries Industry. Ministry of Marine Affairs and Fisheries also issued Minister of Marine Affairs and Fisheries Regulation [No. 17/2015](#) on Criteria and/or Requirements for Granting Income Tax Facilities for Investment in Certain Business Fields and/or in Certain Areas in the Marine and Fisheries Sector. Investment value in the maritime and fisheries sector has reached IDR 4.828 trillion (2017), with total marine and fisheries business credit assistance amounting IDR 11.27 trillion (2017), which was a significant increase from the 2015 business credit value at 0.32 trillion (KKP, 2018a).

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

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Description of country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals:

Progress from implementation efforts of National Targets (TN) and Aichi Biodiversity Target (ABT) in the IBSAP 2015-2020 directly contributed to efforts to achieve the Sustainable Development Goals (SDGs) (Chapter 7.6, KemenPPN/BAPPENAS, 2015) which are:

- i. TN 6 for the achievement of ABT 6 has supported SDG 14 (i) and an additional nine related SDGs (Goal 1, 2, 3, 5, 6, 8, 12, 13,15).

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- ii. TN 9 for the achievement of ABT 9 has supported SDG 15.
- iii. TN 10 for the achievement of ABT 10 has supported SDG 13.
- iv. TN 12 for the achievement of ABT 12 has supported SDG 12 (Particularly 12.2), 14 (Particularly 14.5), and 15 (Particularly 15.1, 15.7).
- v. TN 13 for the achievement of ABT 13 has supported SDG 2 (Particularly 2.5).
- vi. TN 14 for the achievement of ABT 14 has supported SDG 6 (Particularly 6.1, 6.5, 6.6).
- vii. TN 15 for the achievement of ABT 15 has supported SDG 6 (Particularly 6.6).
- viii. TN 17 for the achievement of ABT 17 has supported SDG 15 (Particularly 15.9).

Section V. Description of the national contribution to the achievement of the targets of the Global Strategy for Plant Conservation

Indonesia has national targets related to the GSPC Targets

Details on the specific targets

National Targets on biodiversity management have been included in the 2015-2020 IBSAP book, which consists of 22 National Targets (Chapter 7.4). GSPC has 16 global targets that are not specifically derived as separate national targets. The 16 GSPC targets have been accommodated in Indonesia's National Targets for biodiversity management.

Correlation between GSPC Target, National Targets on Biodiversity Management, and Aichi Biodiversity Targets are shown in the following table:

Table14. Correlation between GSPC Target, National Targets on Biodiversity Management in Indonesia, and Aichi Biodiversity Targets

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T1: An online flora of all known plants	<p>NT-19: Implementation of science and technology capacity building for sustainable management of biodiversity.</p> <p>NT -21: Implementation of comprehensive and integrated data gathering and information mapping on biodiversity.</p>	AT-19
T2: An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action	<p>NT -19: Implementation of science and technology capacity building for sustainable management of biodiversity.</p>	AT-19
T3: Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared.	<p>NT -19: Implementation of science and technology capacity building for sustainable management of biodiversity.</p> <p>NT -21: Implementation of comprehensive and integrated data gathering and information mapping on biodiversity</p>	AT-19

<p>T4: At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration.</p>	<p>NT -5: Development of ex-situ conservation areas to protect local ecosystems.</p> <p>NT -11: Realization of sustainable maintenance and improvement of conservation areas.</p> <p>NT 15: Realization of conservation and restoration of degraded ecosystems in the region.</p>	<p>AT- 5</p> <p>AT-11</p> <p>AT-15</p>
<p>T5: At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity.</p>	<p>NT -11: Realization of sustainable maintenance and improvement of conservation areas.</p>	<p>AT-11</p>
<p>T6: At least 75 per cent of production lands in each sector managed sustainably, consistent with the conservation of plant diversity.</p>	<p>NT -7: Improved sustainably managed land for agricultural, plantation and animal husbandry.</p>	<p>AT-7</p>
<p>T7: At least 75 per cent of known threatened plant species conserved in situ.</p>	<p>NT -12: Realization of efforts to maintain the populations of endangered species as a national conservation priority.</p>	<p>AT-12</p>

T8: At least 75 per cent of threatened plant species in ex-situ collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration programmes	NT -12: Realization of efforts to maintain the populations of endangered species as a national conservation priority.	AT-12
T9: 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge.	NT -13: Implementation of system development in nurseries, genetic breeding and domestication of wildlife as well as the breeding of wild animals.	AT-13
T10: Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded.	NT -9: Implementation of prevention and eradication programs for invasive alien species (IAS).	AT-9
T11: No species of wild flora endangered by international trade.	NT -4: Establishment of increased availability and implementation of policies supporting sustainable consumption and production (SCP) in the utilization of biodiversity resources.	AT-4

T12: All wild harvested plant-based products sourced sustainably.	NT -4: Establishment of increased availability and implementation of policies supporting sustainable consumption and production (SCP) in the utilization of biodiversity resources.	AT-4
T13: Indigenous and local knowledge, innovations and practices associated with plant resources, maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care.	NT -4: Establishment of increased availability and implementation of policies supporting sustainable consumption and production (SCP) in the utilization of biodiversity resources. NT -6: Implementation of policies for sustainable management and harvesting.	AT-4 AT-6
T14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes.	NT -1: Awareness and participation of various parties established through formal and informal education programs.	AT-1
T15: The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this strategy.	NT -20: Identification of resources and budget effectiveness in the implementation of sustainable management of biodiversity.	AT-20

T16: Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy.	NT -17: Implementation of the new IBSAP at various levels.	AT-17
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KemenPPN/BAPPENAS (Ministry of National Development Planning/National Development Planning Agency). 2016. Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2015-2020. URL: https://www.bappenas.go.id/files/publikasi_utama/Dokumen_IBSAP_2015-2020.pdf

Information on any active networks for plant conservation

Indonesia has several active networks for conservation of plants and botanists, many of which play a role in achieving the GSPC Target. Some of them are driven by the government, but some are driven by academicians and various development partners / Civil Society Organizations (CSOs). The active network does not move under the coordination of GSPC National Focal Point (NFP).

Indonesia has built the Indonesian Network for Plant Conservation (INetPC) which is managed by the Center for Plant Conservation Botanic Gardens, the Indonesian Institute of Sciences, as NFP-GSPC. INetPC aims to build plant conservation networks consisting of various Ministries / Government Institutions, non-governmental institutions, universities, Conservation Institutions, community groups, and individuals.

The complete list of active networks can be seen in Target 16 achievement.

LIPI. 2018. Pusat Konservasi Tumbuhan Kebun Raya – LIPI. Lembaga Ilmu Pengetahuan Indonesia. Accessed on: October 2018. URL: <http://krbogor.lipi.go.id/id/beranda>

LIPI. 2018. Indonesian Society on Plant Taxonomy. LIPI-Indonesia Institute of Sciences. Accessed on: October 2018. URL: <http://www.ptti.or.id/>

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Major measures taken by your country for the implementation of the Global Strategy for Plant Conservation

Indonesia has implemented a plant conservation strategy since the inauguration of the first botanical garden in Indonesia, the Hortus Botanicus / Bogor Botanic Gardens, in 1817. Since 2014, Bogor Botanic Gardens have become Center for Plant Conservation Botanic Gardens-LIPI. The national spirit of plant conservation has been strengthened through the milestone of the ratification of the CBD in 1992 and subsequently adopted GSPC since 1998.

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At the national level, the government issued Presidential Regulation No. 93 Year 2011 concerning the Botanic Gardens, which regulates the management and development of plantations at the national level, as an institution that carries out the conservation of plants ex-situ. Until 2018, 37 botanical gardens have been built in 20 provinces and represent 17 ecoregions.

The Center for Plant Conservation Botanic Gardens-LIPI (PKTKR-LIPI) since 1994 actively joined the Botanic Gardens Conservation International (BGCI) and became an institution responsible for recording and implementing GSPC implementation at the national level. Since the initial phase up to GSPC 2011-2020, PKTKR-LIPI acts as GSPC National Focal Point (NFP) in Indonesia. In 2013, NFP-GSPC formed 3 Working Groups (Pokja) namely Conservation Working Group, Institutional Working Group, and Sustainable Utilization Working Group. Each Working Group was formed to report on the development of GSPC implementation nationally.

1. An online flora of all known plants

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Indonesia is estimated to have 35,000–40,000 species of seed plants (Spermatophytes), and 24,632 species (62%) of which have been identified (Retnowati et al, in press). Indonesia is still developing a national database system that can accommodate all identified species of plant species. The database will be integrated into the main data node of the Indonesian Biological Diversity Clearing House Mechanism (BKKHI). One of the main nodes of BKKHI is Indonesia Biodiversity Information Facilities (InaBIF / <http://inabif.lipi.go.id>) which was launched in 2016 and is part of the Global Biodiversity Facilities (GBIF). InaBIF is managed by the Indonesian Institute of Sciences (LIPI) .

In the last 50 years (1967 - 2017) Indonesian researchers conducted various efforts to reveal the biodiversity of flora through various

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expeditions and research. Until 2018, there are 567 new additions to the Indonesian flora species.

Indonesia also built an integrated database collection of living plants that were conserved *ex-situ* in botanical gardens throughout Indonesia which is called as the Information and Registration System of Indonesian Botanic Gardens' Plant Collections (SIGit). SIGit has recorded plant collections in 15 botanical gardens from a total of 37 botanical gardens in Indonesia. At present, 80,787 specimens of living collections (Spermatophytes and Pteridophytes) consist of 7,365 species and 368 families has been recorded.

2. An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Since 2016, Indonesia has formed the Indonesian Plant Red List Authority (IPRLA) under the coordination of LIPI. IPRLA is actively conducting workshops and training in the context of implementing plant conservation status assessments in Indonesia. The activities carried out have produced more botanists who have expertise in the assessment of certain taxa conservation status. Indonesia will publish the Red Data Book for the first time titled 'Indonesian Red List Book Volume 1: 50 Types of Commercial Wood Trees'¹.

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¹Kusumadewi SY, T. Partomihardjo, W. Wardani (eds.) Buku Daftar Merah Indonesia Volume 1: 50 Jenis Pohon Kayu Komersial. LIPI Press, Jakarta (*inpress*).

3. Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

In 2007, Indonesia through LIPI launched the Widya Nusantara Expedition (EWIN) which aims to carry out inventory and study of new species and endemism of Indonesian flora and fauna. This expedition was carried out in the whole area of Indonesia including the remotest. The results of the expedition are in the form of live plants collection conserved in the Indonesian Botanical Gardens, while preserved flora, fauna and microorganism collections are generally stored in national deposit centers at Herbarium Bogoriense, Zoologicum Bogoriense Museum and Indonesian Culture Collection, managed by LIPI. Those collections' data are routinely being input to the offline and online national database systems in InaBIF. Especially for plant collection data that are conserved ex-situ, the database can be accessed via SIGit (Figure 27).

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Figure 27. A distribution map of Botanical Gardens which has applied SIGit

In order to support the endangered plant conservation strategy, Indonesia through various Ministries / Agencies of Government and non-government as well as tertiary institutions has developed and published manuals and guidelines for the propagation techniques of plants and crops. Some endangered species reintroduction programs have been carried out in several conservation areas. At the management strategy level, a Conservation Strategy and Action Plan (SRAK) document have been prepared for the types of Rafflesia and Amorphophallus. At the institutional level, the MoEF has compiled a document on the National Strategy for Agroforestry Research. Other documents that have been compiled are herbarium catalogues, live collections and seed banks, as well as the Botanical Gardens Development Manual, the Botanical Gardens Collection Maintenance Manual and the Seed Management Protocol. These documents were prepared by LIPI.

Documents related to the handling of Invasive Alien Species (IAS) in Indonesia are published in the form of 2 books entitled 'Invasive Plants and Their Management Approaches' and '75 Important Invasive Plant Species in Indonesia', both of which were published by BIOTROP SEAMEO.

4. At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

GSPC Target 4 deals with the progress in implementing efforts to maintain and increase the extent of sustainable conservation areas (see Section III, National Target 11) and its contribution to Aichi Target 11 (see Section IV, Aichi Target 11).

The plant conservation programs at the Botanical Gardens are conducted in reference to the Olson classification (2011) which identified as many as 47 types of ecoregions in Indonesia. As of December 2018, the construction of Botanical Gardens in Indonesia has succeeded in conserving plants from 17 types of ecoregions (36%) spread across 37 Botanical Gardens in Indonesia. The management of the Botanical Gardens is carried out not only by the Central Government (LIPI) but also managed by the Regional Government (30 Botanical Gardens)

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and Universities (2 Botanical Gardens, Figure 28).



Figure 28. Distribution map of Botanical Gardens location in Indonesia

5. At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Management of area protection in Indonesia is carried out using the concept of High Conservation Value (HCV). HCV implementation is carried out globally, regionally and nationally with high biodiversity values, such as epidemic species, endangered species, refugia, etc. There are six categories of HCVs developed in Indonesia:

- 1) Areas with Important Biodiversity Levels.
- 2) Natural Landscape Areas which are Important for Natural Ecological Dynamics.
- 3) Areas with Rare or Endangered Ecosystems.
- 4) Areas which Provide Natural Environmental Services.
- 5) Areas that have Important Functions for Meeting the Basic Needs of Local Communities.
- 6) Regions that have Important Functions for the Traditional Cultural Identity of Local Community.

In 2008, a revised HCV assessment toolkit was implemented in Indonesia whose assessment was carried out by the government and community organizations. Until 2017, a study of 150 HCV areas in Indonesia has been carried out.

In addition to HCV, Indonesia also establishes Essential Ecosystem Areas (KEE), namely areas of important ecosystems that have high biodiversity values outside conservation areas, which are ecologically and socio-economically important for the purpose of conservation. Up to 2017, Indonesia managed to identify 35 KEE that were spread across Sumatra (11 KEE), Kalimantan (7 KEE), Nusa Tenggara (2 KEE), Sulawesi (6 KEE) and Java (9 KEE), total area is 710,554,731 ha¹.

¹Statistic Ministry of Environment and Forestry 2017

6. At least 75 per cent of production lands in each sector managed sustainably, consistent with the conservation of plant diversity

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

GSPC Target 6 deals with progress towards achieving agriculture, aquaculture and sustainable forestry (see Section III, National Target 7) and its contribution to Aichi Target 7 (see Section IV, Aichi Target 7).

The principles and practices of organic farming in Indonesia have been carried out intensively since 2002 (Rohman *et al* 2017). To ensure the quality of organic agriculture, quality control system for farmer groups has been implemented through the development of a control system (Internal Control System / ICS) through an organic farmer group certification scheme. Agricultural commodities which have been developed including cinnamon (South Kalimantan), forest honey (West Kalimantan), rice and empon-empon (Ginger family) (Java). The expansion trend of certified organic agriculture in Indonesia tends to increase from around 62,000 ha in 2012 to 79,000 ha in 2016 (Figure 29).

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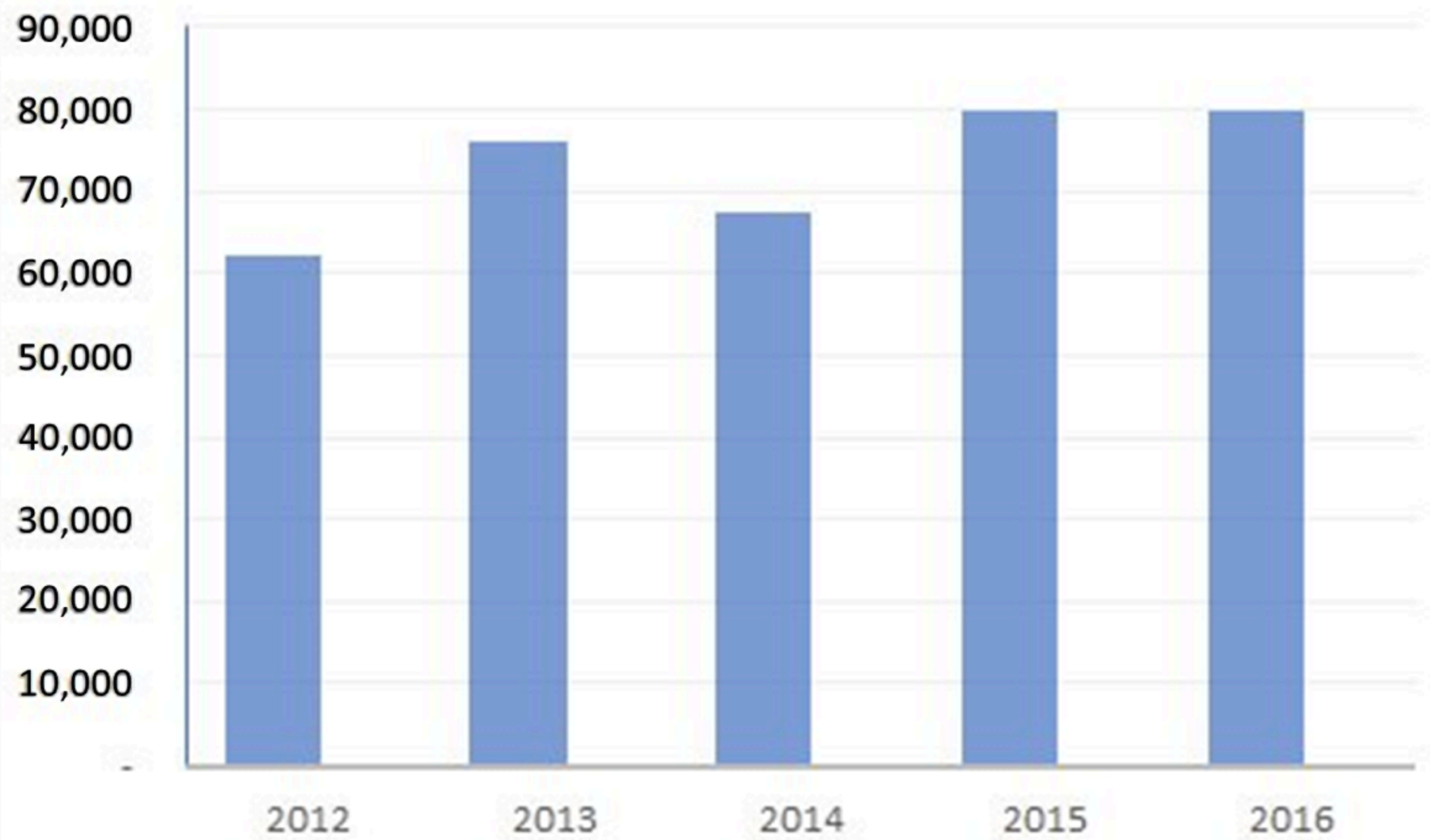


Figure 29. Total area of certified organic farming in Indonesia

Some agricultural areas in Indonesia also implement conservation agriculture programs fostered by FAO. Up to 2017, conservation agriculture has been carried out in 152 villages in West Nusa Tenggara and East Nusa Tenggara, implemented by 650 farmer groups which consist of more than 12,500 members¹.

The development of biological organic fertilizer products is carried out by Government Ministries/Agencies, private sectors, and universities. Management is regulated through Minister of Agriculture Regulation No. 70 / Permentan / SR.140 / 10/2011 concerning Organic Fertilizers, Biofertilizers and Soil Improver.

In the plantation sector, Indonesia has developed an Indonesian Sustainable Palm Oil System (ISPO) which has been developed since 2011. As of December 2016, as many as 226 companies have obtained ISPO certification with a total area of 1.430 million ha.

¹ Farming with Conservation Agriculture in Indonesia. 2017. [http://www.fao.org/Farming with Conservation Agriculture in Indonesia](http://www.fao.org/Farming%20with%20Conservation%20Agriculture%20in%20Indonesia). Downloaded on 17 Nov 2017

7. At least 75 per cent of known threatened plant species conserved in situ

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

The type of terrestrial protected area in Indonesia has been established and managed by MoEF, which consists of conservation forests and protection forests with a total area of 51.8 million ha (71.2% of the total conservation area in Indonesia)^{1,2}. This area serves to protect the area and species in it. In 2017, the total area of terrestrial conservation areas in Indonesia was 22.1 million ha (out of 27.4 million ha of

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conservation forest area), while protection forest area totaled at 29.7 million ha¹. Conservation forests comprises of Strict Nature Reserves (*Cagar Alam*), Wildlife Sanctuaries (*Suaka Margasatwa*), National Parks (*Taman Nasional*), Grand Forest Parks (*Taman Hutan Raya*), Nature Recreation Parks (*Taman Wisata Alam*), and Hunting Parks (*Taman Buru*). The distribution map of conservation area can be seen in Figure 30. URL: <http://pika.ksdae.menlhk.go.id/assets/images/banner/peta%20kk%20indo.png>.



Figure 30. Map of Conservation Areas in Indonesia

One of Indonesia's endemic species, *Dipterocarpus cinereus*, was assessed as extinct by IUCN in 1998. However, in 2013 this species was found again with a very small population in the Mursala Island Strict Nature Reserve in Central Tapanuli Regency, North Sumatra³ (Kusuma *et al*, 2013) and its conservation status have been assessed to be Critically Endangered/CR⁴. Some other conservation areas protect endangered plant species, where regulations regarding the list of protected plants have been updated, starting from Act No. 5/1994 which was described in Government Regulation No. 7/1999 and Government Regulation No. 8/1999 which then becomes Minister of Environment and Forestry Regulation No. P.92/MENLHK/SETJEN/ KUM.1/8/2018. Currently, conservation area management in Indonesia is directed towards implementing resort-based management (RBM), an area-based approach based on its own biological resources richness data.

Seven types of conservation areas in Indonesia have been established and managed until 2017 which has several functions including protection of the area. The distribution map of the conservation area can be seen in the figure below.

INDONESIA CONSERVATION AREA MAP 2017

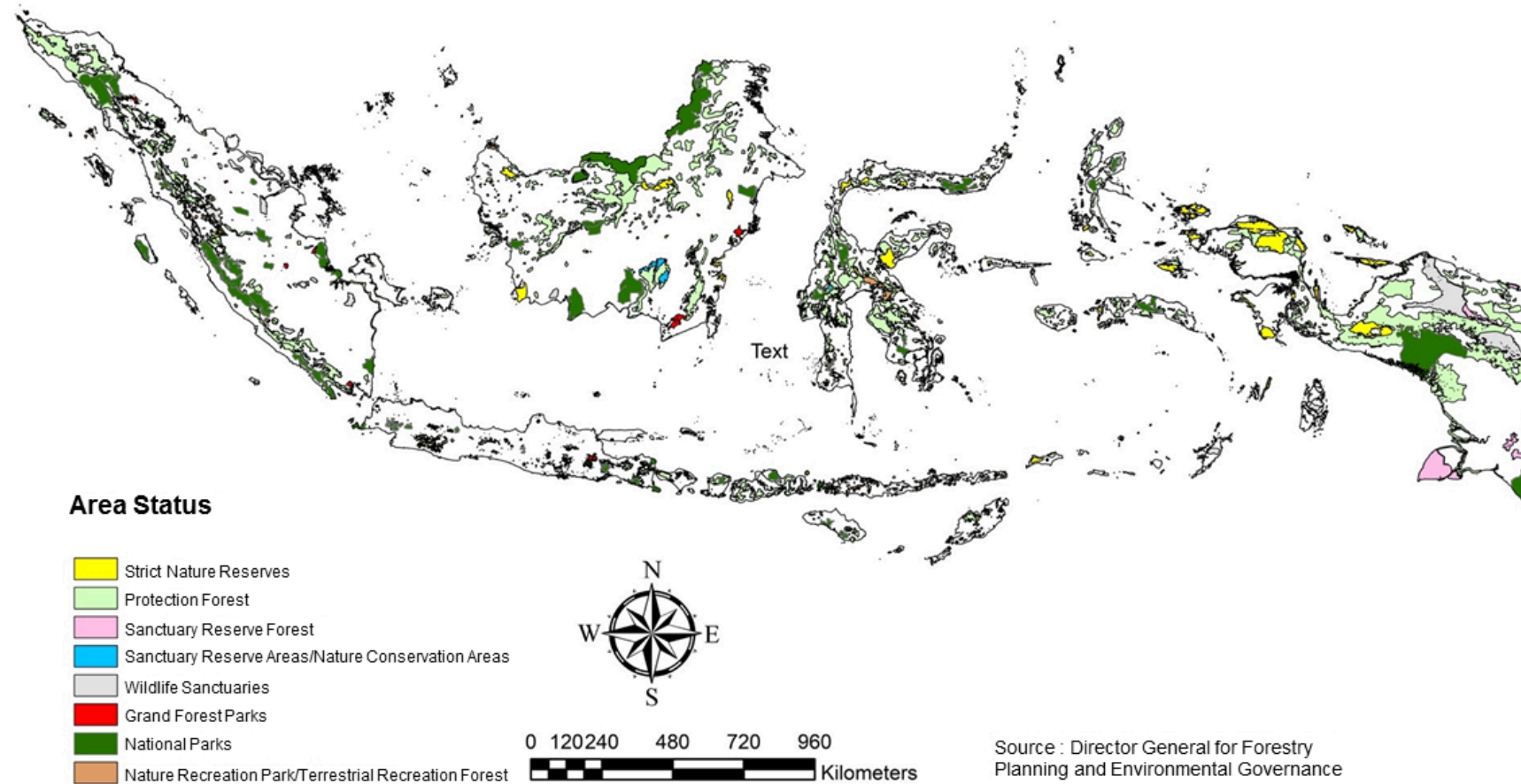


Figure. Distribution of conservation areas in Indonesia up to 2017

- ¹ Nurbaya, S., Efransjah, S. A. Awang (Eds.). 2018. The State of Indonesia's Forests 2018. Ministry of Environment and Forestry. Republic of Indonesia.
- ² Performance Report of Ministry of Marine Affairs and Fisheries 2017.
- ³ Kusuma, Y.W.C., Wihermanto, R. A. Risna, and P. S. Ashton. 2013. Rediscovery of the supposedly extinct *Dipterocarpus cinereus*. *Oryx*, 47(03): 324-324. doi: 10.1017/S0030605313000756
- ⁴ Barstow, M. & Kusuma, Y. 2017. *Dipterocarpus cinereus*. *The IUCN Red List of Threatened Species* 2017: e.T33374A109954087. <http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T33374A109954087.en>. Downloaded on 06 Nov 2017.

8. At least 75 per cent of threatened plant species in ex situ collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration programmes

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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EN

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Referring to the IUCN Redlist of Threatened Plant (IUCN, 2017), until the end of 2017, Indonesia has been able to conserve 122 endangered plant species or 28.5% of all threatened species in Indonesia (428 species) in Botanical Gardens throughout Indonesia.

The management of endangered plant conservation is also carried out by developing a seed bank, where Indonesia is involved as part of the Millennium Seed Bank Partnership (MSBP). Until 2018, Indonesia has collected around 900 species of seeds that have the potential to be used in restoration activities. The collection is deposited in the Bogor Botanical Gardens, Cibodas Botanical Gardens, Purwodadi Botanical Gardens, and Ekakarya Bali Botanical Gardens.

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Another form of conservation being developed is through the construction of a germplasm bank under the management of the Ministry of Environment and Forestry. To date, there are 110 dipterocarp species that can be used for restoration programs. Some research forest areas also collect endangered plant species with management between 9-78 species.

The government collaborates with various parties to make the conservation of endangered plants efforts a success. For example, the Cibodas Botanical Garden in collaboration with the Indonesian Carnivorous Plant Community developed the Nepenthes Park which currently has 80 species with 20 species are categorized as endangered.

9. 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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EN

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

The Ministry of Agriculture through the Center for Research and Development of Biotechnology and Agricultural Genetic Resources (BB Biogen) publishes the Food Crops Genetic Resources (SDG) Passport Data Catalog (<http://biogen.litbang.pertanian.go.id/publikasi/katalog-data-paspor-plasma-nutfah/>) which contains 27 types of food crops genetic resources commodities. Passport data presented include accession numbers, names of cultivars/varieties/lines/clones, the regency of origin, province of origin and country of origin. These commodities can be seen in table 14.

Table 14. Genetic Resource Commodities of food crops

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No.	Commodity Type	Local Name	Total Accession
1	<i>Setaria italica</i>	Jewawut	9
2	<i>Coix lacryma-jobi</i>	Hanjeli	12
3	<i>Sesamum indicum</i>	Wijen	6
4	<i>Dioscorea alata</i>	Ubi kelapa	20
5	<i>Oryza sativa</i>	Padi	4116
6	<i>Zea mays</i>	Jagung	1052
7	<i>Sorghum bicolor</i>	Sorgum	255
8	<i>Glycine max</i>	Kedelai	888
9	<i>Arachis hypogea</i>	Kacang tanah	821
10	<i>Psophocarpus tetragonolobus</i>	Kacang koro pedang	7
11	<i>Mucuna pruriens</i>	Kacang koro benguk	9
12	<i>Lablab purpureus</i>	Kacang komak	17
13	<i>Vigna radiata</i>	Kacang hijau	915
14	<i>Vigna unguiculata</i>	Kacang tunggak	139
15	<i>Cajanus canan</i>	Kacang gude	13
16	<i>Vigna subterranea</i>	Kacang bogor	69
17	<i>Mannihot esculenta</i>	Ubi kayu	556
18	<i>Ipomoea batatas</i>	Ubi jalar	1364
19	<i>Colocasia esculenta</i>	Talas	253
20	<i>Oryza sp.</i>	Padi liar	94
21	<i>Triticum aestivum</i>	Gandum	83
22	<i>Marantha arundinaceae</i>	Patat	34
23	<i>Xantossoma sp.</i>	Belitang	126

A Web-GIS-based Indonesian Local Genetic Resources Distribution Map is available on the website (<http://biogen.litbang.pertanian.go.id>).

Data on native Indonesian plants that have been used as a source of food ingredients and its wild relatives reached 121 species of cultivated plants along with more than 1968 species of its wild relatives from 53 families (Wiguna et al., 2018). Data from 20 families with the highest number of wild relatives can be seen in the figure below.

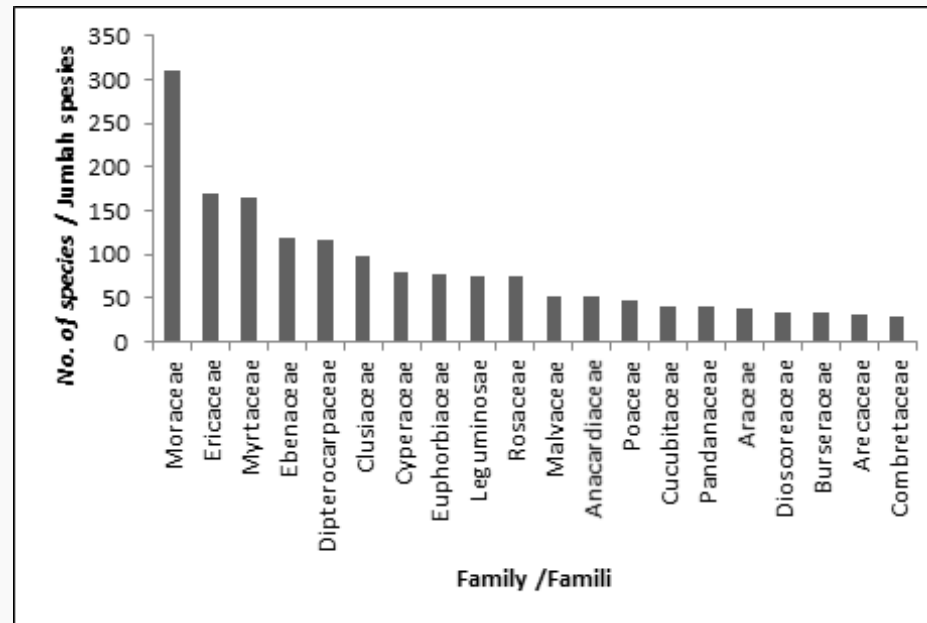


Figure 32. Families with the most number of wild relatives

10. Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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EN

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

In 2015, the Government of Indonesia drafted a National Strategy and Direction for the Action Plan for the Management of Invasive Alien Species (IAS) in Indonesia. The management and control of IAS start from the early detection of species, risk analysis, and way to handle it. This activity was carried out by the Ministry of Agriculture's Quarantine Agency primarily aimed at country border and immigration.

The Government of Indonesia has regulated Invasive Species contained in the Minister of Environment and Forestry Regulation (PermenLHK) No. [P.94/MenLHK/Setjen/ Kum.1/12/2016](#). Until now, there are 1,619 species of foreign/alien plants with 331 species considered invasive plant species (BAPPENAS, 2016). Until now, 109 plant species are officially recorded as invasive species that have entered Indonesia and as many as 17 priority invasive plant species are prohibited from entering Indonesia. In addition, based on the latest data (2018) from the Global Invasive Species Database¹ (GISD), as many as 78 invasive plant species have been spread in Indonesia.

The spread of invasive species to Indonesia has come into several conservation areas. The survey conducted in 2015-2018 recorded 6 conservation areas that have been invaded by IAS, namely in Pangi Binangga Nature Reserve (Southeast Sulawesi), Bromo Tengger Semeru National Park (East Java), Sukawayana Strict Nature Reserves (West Java), Cibanteng Strict Nature Reserves (West Java), Bukit Barisan Selatan National Park (Lampung), and Tanjung Puting National Park (Central Kalimantan).

The government mitigates and controls IAS quite intensively, for example, eradication of *Acacia nilotica* in Baluran National Park. In addition, various weed processing and IAS training activities are also carried out to increase public awareness of the importance of IAS management.

¹ISSG [Invasive Species Specialist Group]. 2018. Global Invasive Species Database. Accessed on: October 2018 URL: <http://issg.org/>

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[database/welcome/](#).

11. No species of wild flora endangered by international trade

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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EN

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Management of wild plants in Indonesia through protection and utilization arrangements as outlined in Government Regulation No. 7 Year 1999 on Preservation of Plant and Animal Species and Government Regulation No. 8 Year 1999 on Utilization of Plants and Animals Species. At present, there are 127 protected plant species based on the Ministry of Environment and Forestry Regulation No. P.20 Year 2018 in conjunction with P.92 Year 2018. The regulation of trade for wild plant species for international trade follows the CITES mechanism. Indonesian wild plants included in CITES Appendix 2 are 6 species and 1 family, namely agarwood (*Aquilaria malaccensis*, *Aquilaria filaria* and *Gyrinops versteegii*), tree ferns (*Cyathea contaminans*), woolly ferns (*Cibotium barometz*), ramin (*Gonystylus bancanus*) and Orchidaceae. The Indonesian government conducted an intensive survey to ensure that the utilization of wild plants is carried out sustainably.

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12. All wild harvested plant-based products sourced sustainably

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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EN

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

The efforts to achieve GSPC Target 12 is also related to the elaboration of forest resource commodities that have sustainable standards/criteria (see Section III, National Target 4) and their contribution to Aichi Target 4 (see Section IV, Aichi Target 4).

To complete this information, the Indonesian Ministry of Agriculture has also determined 323 types of horticulture products which include 60 types of fruits, 80 types of vegetables, 66 types of biopharmaca (medicinal plants) and 117 types of floriculture (ornamental plants). In 2013, the Sustainable Horticulture Technical Guidelines were established as a reference and strategic direction for sustainable agriculture, including the establishment of registration of farming land for these commodity crops (Ministry of Agriculture 2013).

The use of non-timber forest products (NTFPs) in Indonesia is regulated in Act No. 41 Year 1999 concerning Forestry and Minister of Forestry Regulation No. P.35/Menhut-II/2007 on Non-Timber Forest Products where the utilization of NTFPs is to protect, serve, empower and prosper the community. Based on the Minister of Forestry Regulation No. P-21/Menhut-II/ 2009, 5 national NTFP commodities have been prioritized for development, namely honey bees, natural silk, agarwood, rattan, and bamboo.

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13. Indigenous and local knowledge innovations and practices associated with plant resources maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

In an effort to protect the knowledge of indigenous peoples and local wisdom, the Ministry of Environment and Forestry (KLHK) and the Ministry of Home Affairs have issued rules on recognition and protection of local wisdom through Minister of Environment and Forestry Regulation No. 34 Year 2017 (See Section IV: Development of Biodiversity Benefits). This Ministerial Regulation becomes the application of the mandate of Article 63 clause 1 letter t of the [Environmental Protection and Management Act \(UU PPLH\)](#) on the stipulation of policies regarding the procedure for recognition of the existence of customary (adat) law communities, local wisdom, and the rights of adat law communities related to protection and management of the environment.

To support this step, the Directorate General of Social Forestry and Environmental Partnership (DJPSKL) under the Ministry of Environment and Forestry - which serves as the organizer of formulating and implementing policies in the field of increasing community participation in forest management, handling adat forests, and environmental partnerships - has compiled an Indicative Maps of Social Forestry Areas (PIAPS) and can be accessed by the general public through the following MoEF Geoportal URL address:

<http://geoportal.menlhk.go.id/arcgis/apps/webappviewer/index.html?id=004299e9f8f24d2d9aca1365904d18ed>

In accordance with the 2015-2019 National Medium-Term Development Plan (RPJMN), the Government of Indonesia has allocated 12.7 million ha of forest land for the community through social forestry programs. In an effort to accelerate the implementation of the Social Forestry Program, the Government established a [Community Forestry Communication Forum \(FKKM\)](#) which was attended by 8 development partners who specifically examined the linkages between communities and sustainable forest management. Until 2018, 7,323,702 ha of forest area had been assigned to become social forest areas and Agrarian Reform Land (TORA).

From a variety of community activities in managing forests to be sustainable, one of the commonly used methods is the agroforestry planting system. This system allows wood plants to be interspersed with agricultural crops and medicinal plants that can be harvested in a short time. In addition, medicinal plants are one of the most common plants developed by Indonesian people, both for production/ economic purposes and for their own use.

14. The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Efforts to achieve GSPC Target 14 are also related to the elaboration of efforts to increase awareness of biodiversity in Indonesia (see Section III, National Target 1) and its contribution to Aichi Target 1 (see Section IV, Aichi Target 1).

Some environmental protection and management efforts have been carried out by the government and the community. In the Act on Environmental Protection and Management No. 32 Year 2009 article 1 clause 2, it is explained that environmental protection and management is a systematic and integrated effort carried out to preserve environmental functions and prevent pollution and/or environmental damage which includes planning, utilization, control, maintenance, supervision, and law enforcement. These systematic and integrated efforts include the integration of formal and informal education systems to increase public awareness about the role of plant diversity and their environment for all life on the planet Earth. In the context of formal education, the Government of Indonesia, through the Ministry of Environment and Forestry, built a PLH (Environmental Education) subject curriculum, since its initiation in 1969 until this period which has reached the period of stabilization and development. In addition, there is also the implementation of the Adiwiyata school system, which is a school with environmental insight.

Informal education programs, in addition to its reference to formal education programs, are also inseparable from the world of tourism. With the development of sustainable tourism programs in which community-driven educational tourism programs are encouraged, the topics of the importance of plant diversity and their conservation are getting more diverse and cover a wider segment of society. (Table 15)

Table 15. Educational programs that have been carried out by various Institutions/Agencies

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15. The number of trained people working with appropriate facilities sufficient according to national needs, to achieve the targets of this Strategy

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

In Indonesia, a number of universities have provided study programs related to biodiversity management, both public and private universities. In addition, the government also opened vocational secondary schools in order to increase the capacity of the field worker in the field of forestry and agriculture. Other informal education is in the form of certification to parties working on aspects of biodiversity management through Environmental Impact Analysis (AMDAL) certification, HCV, and others.

One example of increasing human resource capacity related to plant conservation is in the field of botanical gardening. In line with increasing the role of the Center for Plant Conservation Botanic Gardens-LIPI in the development of botanical gardens in the region, human resource management for the Regional Botanical Gardens is carried out through capacity building of managers which has been carried out since 2012. Up to 201, 679 training participants at the farm management and technical level have been educated. In addition, in 2018, there was established a gardening functional position by the Ministry of Administrative and Bureaucratic Reform (PANRB) through Minister of PANRB Regulation No. 31 Year 2018 on Functional Position of Botanical Gardens Technicians and Minister of PANRB Regulation No. 32 Year 2018 on Functional Position of Botanical Garden Analysts that will become a means of career advancement for central and regional civil servants who work in the field of botanical gardening.

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Other activities to increase human resource capacity in plant conservation are in the form of thematic training carried out in the Ministry, Research and Development Agencies, Universities, and Non-Governmental Organizations. Some of the training themes carried out including the Management of Invasive Alien Species, Determination of Endangered Plants, Seed Bank Management, Collection Management, and Sustainable Forest Management.

16. Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

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Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Indonesia has very strong institutional capacities and has broad networks of cooperation, both at national and international levels. Until now, cooperation has been established between government agencies, private institutions/development partners, academics (universities) and community forums. At the national level, an active network of plant conservation is carried out by several communities, including the Indonesian Botanical Garden Community (MAPI), Indonesian Organic Farming Society (MAPORINA), Indonesian Rare Tree Conservation Forum (FPLI). The number of institutions and community forums involved in plant conservation activities until 2018 are listed in table 16.

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Table 16. Number of institutions and community forums for plant conservation until 2018

In addition, in order to implement the International Convention relating to biodiversity, the Indonesian Government has established several National Focal Points including NFP CBD, SBSTTA, IPBES, GTI, GSPC, and Program of Work on Protected Areas (PoWPA).

Regarding the mechanism of global wild plants and animals trade, the Government of Indonesia refers to the CITES mechanism, while for involvement in the assessment of international biodiversity status, some Indonesian researchers are members of a group specialist at the IUCN. Several international organizations on the conservation of plants where Indonesia is a member are the Botanic Gardens Conservation International (BGCI), the International Association for Botanic Gardens (IABG), the South East Asia Botanic Gardens (SEABG) network, the Global Partnership for Plant Conservation (GPPC).

Section VI. Description of the national contribution to the achievement of the targets of indigenous peoples and local communities

No information available

Section VII. Updated biodiversity country profile

Biodiversity facts : Status and trends of biodiversity, including benefits from biodiversity and ecosystem services and functions:

Indonesia is a tropical archipelagic country located on two continents, namely Asia and Australia and two oceans, namely the Pacific and Indian Oceans. As many as 18,110 islands have been documented where 10 percent are coral islands with an elevation of less than 2 meters. The land territory of Indonesia covers 1,919,440 km² while the country's waters extend over 3,257,483 km² with a coastline of 108,920 km. Geologically, Indonesia is traversed by two young mountain ranges of the world, namely the Mediterranean Mountains to the west and the Pacific Circum

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Mountains to the east. These two mountainous routes have caused Indonesia to have many active volcanoes, which are often referred to as the Pacific Ring of Fire. Biogeographically, the Indonesian landscape forms a bioregion which can be separated between the biogeography of Asian flora and fauna with Australasia so that Wallacea lines and biogeographic lines are formed, such as the Weber and Lydekker lines. The Wallace line is based more on studies of vertebrates and plants, while the Weber line is by the study of fish and Lydekker distribution by the study of mammalian distribution. Those positions and studies define Indonesia's biogeographical scope with vast amount of biodiversity.

1. Terrestrial Biodiversity in Indonesia

1.1. Current Number of Plant Species in Indonesia

The process of collecting information on plant species from 2014 to 2017 shows an increase in the number of Indonesian plant species by 5,277 species. The total number of plant species from all plant groups in Indonesia until 2017 is 31,750 species, while the number in 2014 was 26,473 (Figure 33).

Increase in the number of species almost occurred in all plant groups, with the highest addition occurred in the Angiosperm group. The largest addition in a number of species in the Angiosperm group was caused by a large number of Angiosperm species mentioned in the old and most recent publications which had not been recorded in the previously published biodiversity book. On the other way around, a decrease in the number of species occurs in lichens and Pteridophytes. This decrease in the number of species is caused by the realization that a number of species names are the synonyms of other species names. This occurred after the species name validation process is carried out.

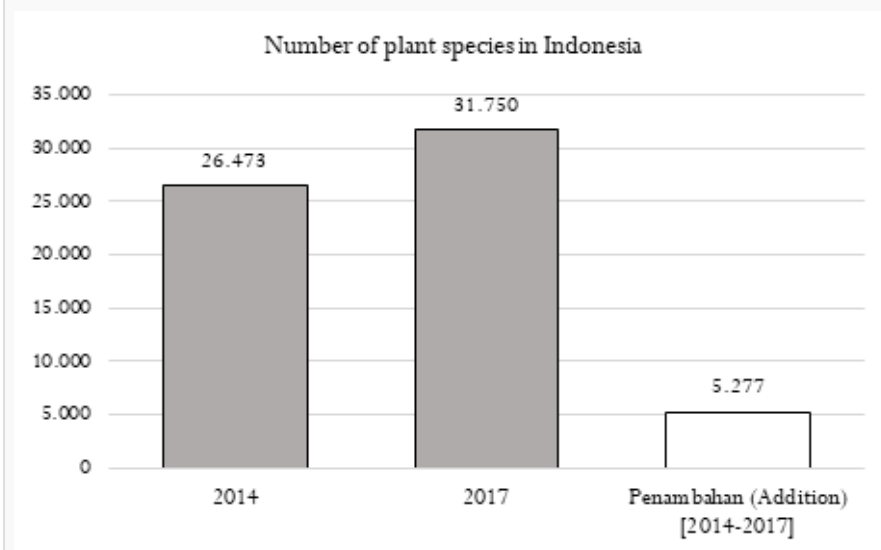


Figure 33. Number of plant species in Indonesia in 2014-2017

It is estimated that around 30,000–40,000 species of seed plants (15.5% of the total number of plants in the world) are in Indonesia. The latest data from the analysis and identification of Indonesian plants until 2017 were recorded, with a total flora of 31,750 species consisting of 2,273 species of fungi, 2,722 species of Bryophytes, 512 species of lichens, 1,611 species of ferns, and 24,632 species of seed plants (Table 17).

The number of seed plants (Spermatophytes) in 2014 is estimated at 19,232 species or around 48.08 - 64.11% of the estimated number of seed plants recorded in Indonesia, which is around 30,000 - 40,000 species. For 2017, there are 5,385 species of seed plants added, so that the total number until 2017 is 24,632 species or around 61.58 - 82.11% of the total recorded in Indonesia.

Compared to other plant groups, the percentage of fungi and lichens in Indonesia is still low. The low number of species known from the two groups of plants is due to the fact that there are only a few taxonomic researchers from the two groups of plants and explorations are still limited.

Table 17. Indonesian flora recorded from 2014 to 2017 and comparison with its position in the world

A. Seedless Plants

1. Cryptogam:

Fungi	1,500,000	2,081	0.14	2,273	0.15
Lichens	20,000	595	2.98	512	1.56

1.1. Bryophytes

Total of superdivision:	20,500	2,344	11.43	2,722	13.28
Class Hepaticae	7,500	834	11.12	849	11.32
Class Musci	12,800	1,510	11,8	1,845	14,41

1.2. Pteridophytes

Total of superdivision	14,200	2,197	15.47	1,611	11.34
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B. Seed Plants (Spermatophytes):

Total of superdivision:	258,000	19,232	7.44	24,632	9.52
Subdivision Gymnospermae	1,000	120	12.00	135	13.5
Subdivision Angiospermae	257,000	19,112	7.65	24,497	9.80

*Widjaya et al. 2014, IBSAP 2015

The types of plants that exist in Indonesia are distributed in Java, Kalimantan, Maluku-Papua, and the Lesser Sunda Island (LSI) (Figure 34). In 2014, the highest number of species was in Kalimantan, while in 2017 the highest number of species was found in Java with 13,776 species. The high number of plant species in Java is due to the length of plant research carried out in Java, both during the Dutch colonial period and the present day. The most recent biodiversity data showing the highest distribution of species in Java are fungi, Bryophytes, lichens, and seed plants, while the highest distribution for ferns is in Sumatra. The islands in Eastern Indonesia, including Sulawesi, LSI, and Maluku-Papua, still show a smaller number of species compared to the western Indonesian islands. The number of plant species in Maluku-Papua shows a fairly high number, but the figure is still small if compared to the area of the island.

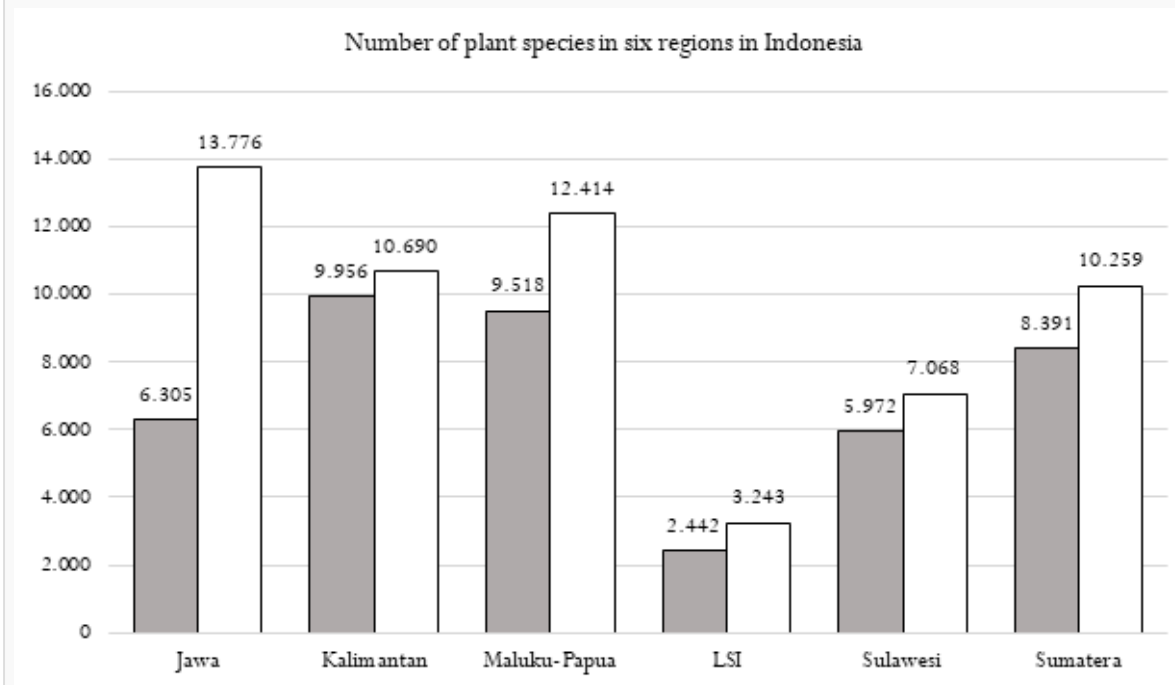


Figure 34. Number and distribution of plant species in Indonesia in 2014 and 2017

Indonesia is known to have a high number of endemic species due to its unique geography. The number of endemic species recorded until 2014 is displayed by the pie chart in Figure 35. Based on 2014 data, it is known that the highest number of endemic flora is recorded from Maluku and

Papua Island, which is around 4,380 species.

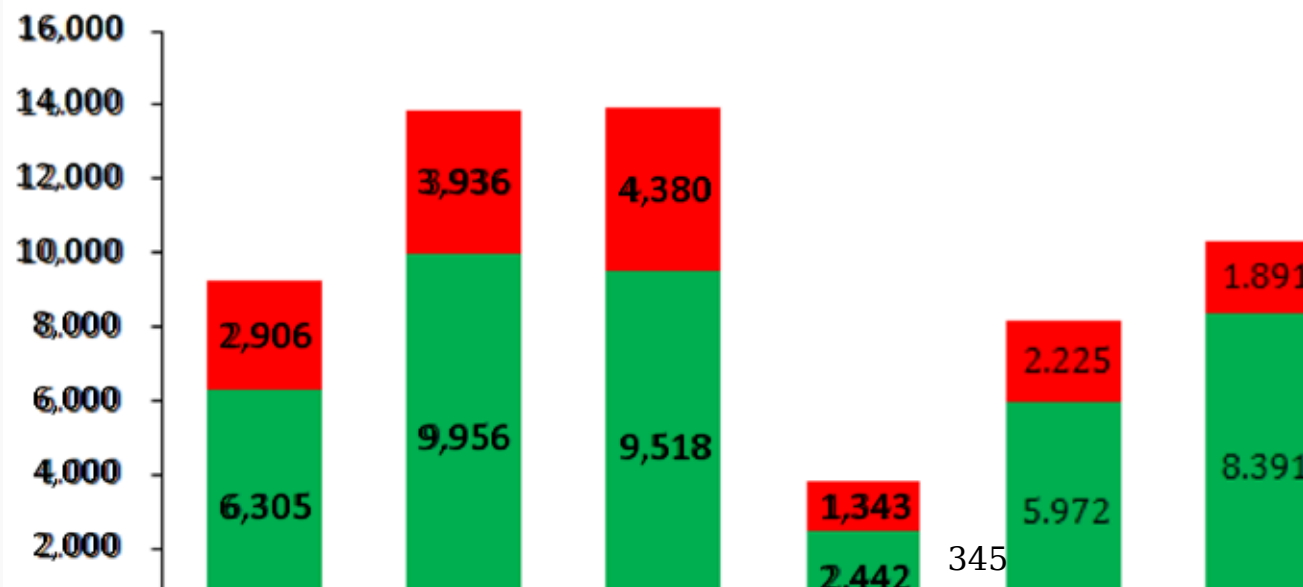
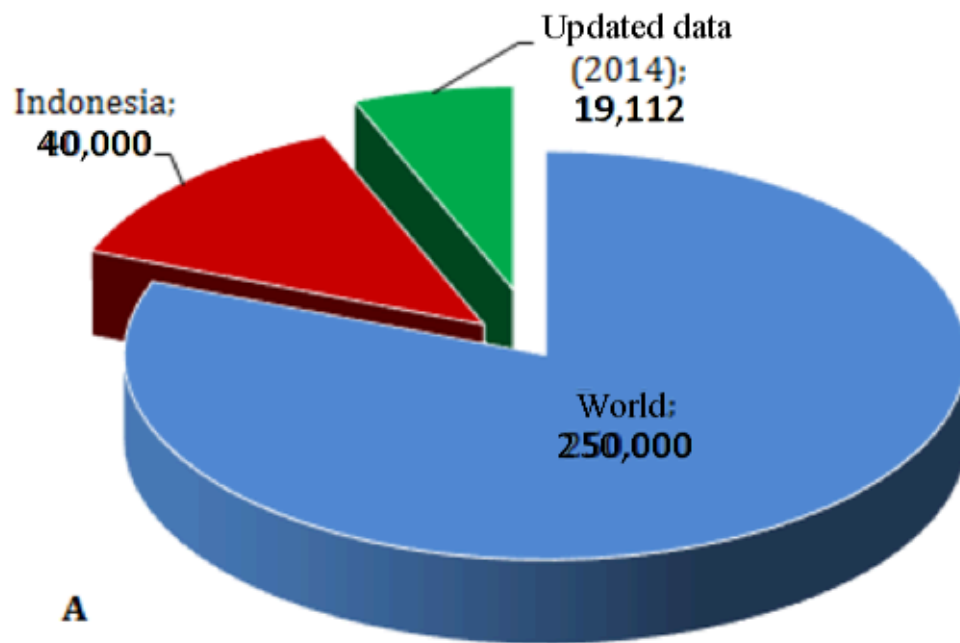


Figure 35. Data of total species and endemic species of seed plants per large island¹

The addition of information on the number of endemic species in 2017 is found in the group of seed plants, namely from monocots, for the family Arecaceae, as many as 97 species. The number of endemic species of the Arecaceae family in 2014 was known to be 225 species¹, whereas in 2017 there were 322 species (Table 18).

Table 18. Number of endemic species from seed plants groups for monocot from Arecaceae family

Data collection end year	Number of species	Number of endemic species
2014	800	225
2017	935	322

1.2. Status of Indonesia Fauna

The process of data collection on fauna species from 2014 to 2017 is carried out simultaneously with the validation of changes in species groups as well as improvement of the calculation records of previous years. The total number of fauna species from all fauna groups in Indonesia in 2014 was 80,976 species, while the number in 2017 was recorded at 80,583 species (Table 19). This decrease in the number of species is mainly due to the decreasing number of species of insect groups. In 2014, records of several groups of insects included Papua (Papua and Papua New Guinea) and Kalimantan (Kalimantan, Sabah, Sarawak, and Brunei Darussalam) as a whole. In 2017, the species calculated are only limited to the distribution area located in Indonesia. As a group of species, the highest increase in the number of species invertebrate fauna is from the bird group (106 species), while in invertebrates it is shown by the group of terrestrial molluscs (73 species). The addition of species in the bird group is due to the results of analysis at the molecular level.

Table 19. Data of Indonesian Fauna from 2014 - 2017 and its proportion compared to the number of the world fauna

No	Taxon	Number of species in the world *	Number of species in Indonesia 2014*	Indonesian Fauna Proportion 2014	Number of species in Indonesia 2017**	Indonesian Fauna Proportion 2017
1	Mammals	5,416	720	13%	732	14%
2	Birds	10,140	1,605	16%	1,711	17%
3	Amphibians	6,433	385	6%	403	6%
4	Reptiles	9,084	723	8%	750	8%
5	Fish (fresh water)	14,000	1,248	9%	1,236	9%
6	Terrestrial Molluscs	44,569	5,170	12%	5,243	12%
7	Nematodes	-	90	-	107	-
8	Arthropods (Insects)	591,009	67,113	11%	66,361	11%
9	Other Arthropods: Freshwater and semi-terrestrial crustaceans (lobster, shrimp, freshwater and semi-terrestrial crabs)	-	258	-	290	-
10	Araneae (Spiders)	57,228	2,096	4%	2,096	3,7%
11	Springtails (Collembola)	6,000	1,500	25%	1,500	25%
12	Acari (Macrochelidae)	400	68	17%	79	20%
	Total	744,279	80,976	11%	80,583	11%

* Widjaya et al. 2014; IBSAP 2015

**HBW, 2018;

The distribution of fauna species among large islands in Indonesia shows that information from Kalimantan is still the highest compared to other large islands (Figure 36). The bird groups show that there are 449 bird species that have a limited number of distributions.

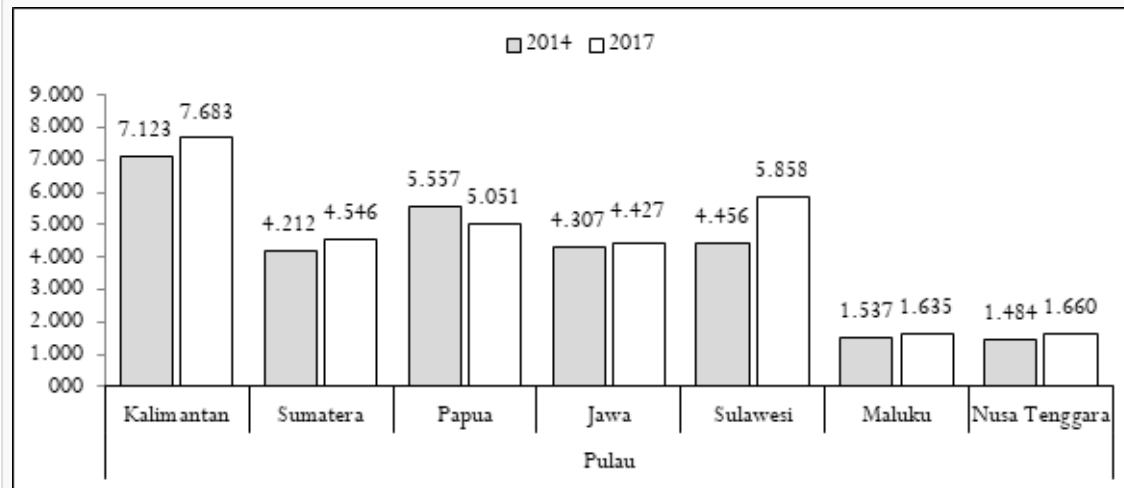


Figure 36. Number of fauna species in Indonesia in 2014 and 2017. (Note: Java Island includes the island of Bali)

Examples of fauna distribution can be seen for the Diplommatinidae family of terrestrial molluscs. This family can be found on Java and Sulawesi. Until now 23 species have been found on the island of Java with the distribution of several species shown in Figure 37.

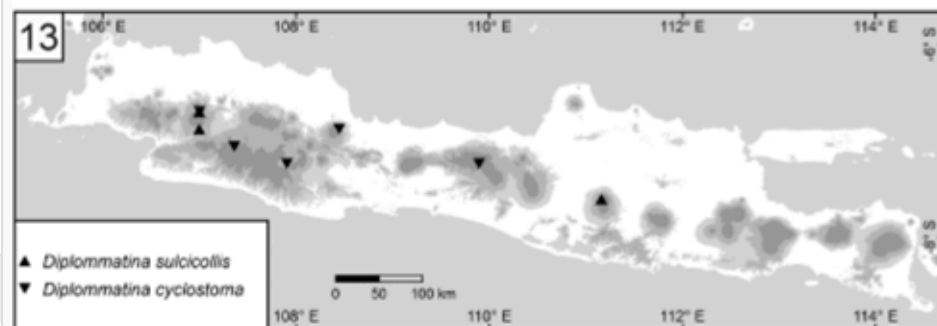
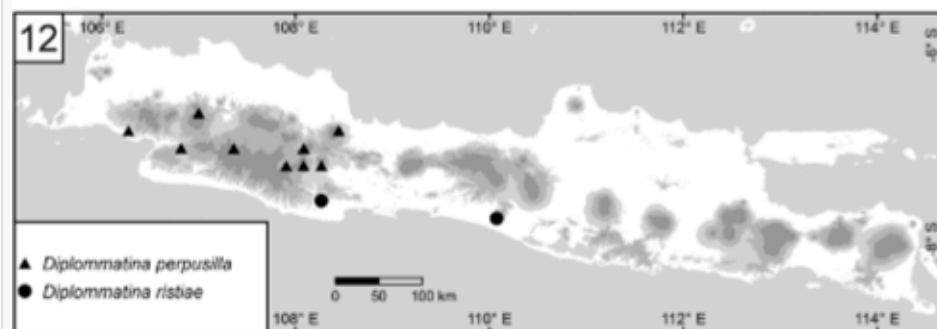
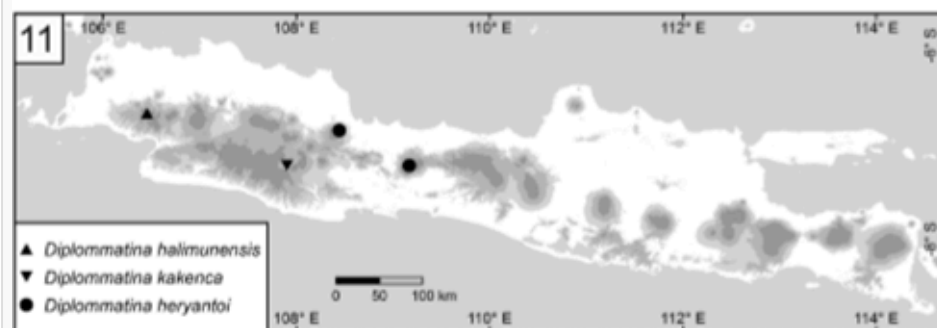
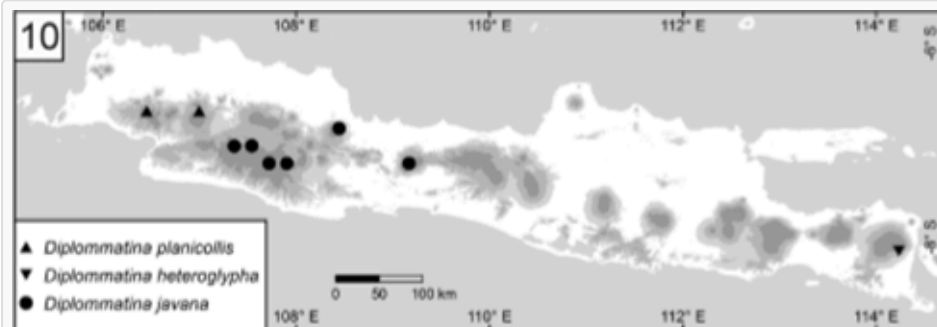


Figure 37. Distribution of several species of Diplommatinidae family members on Java (Nurinsiyah & Hausdorf, 2017)

Another example is the mite genus *Neopodocinum* (Acari: Family Macrochelidae) which is distributed on the islands of Sumatra, Java, Kalimantan, Bali and Nusa Tenggara (Figure 38). Until now, 11 species of *Neopodocinum* mites have been found in Indonesia. These mites are important to be investigated further because they have the potential to be agricultural and livestock pest control agents. Based on the results of the research conducted, the distribution of mites from the family of Macrochelidae probably originated from the Oriental region indicated by the absence of the genus *Neopodocinum* in Sulawesi, Papua, Timor, Sumba and also Australia.

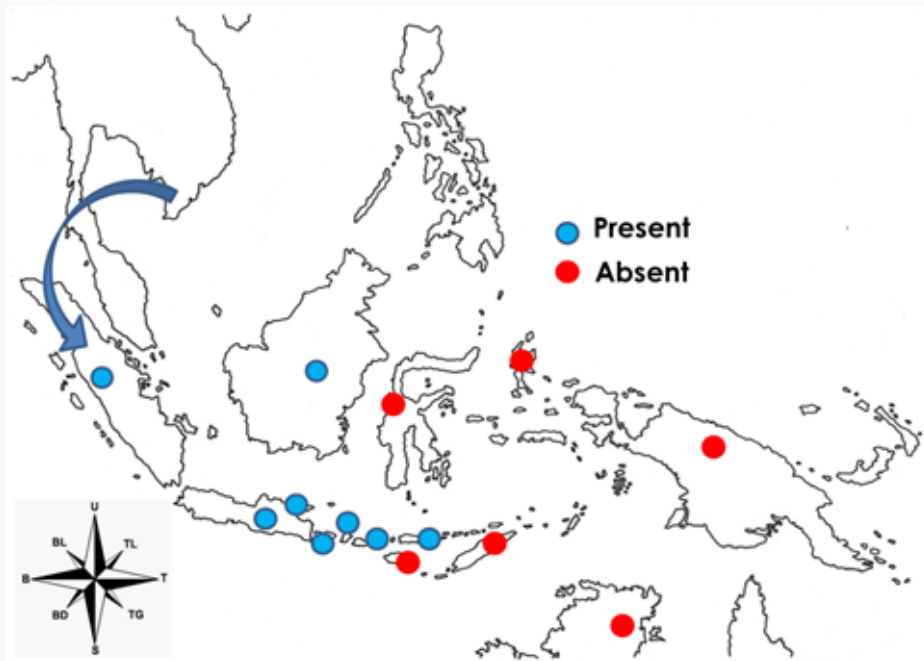


Figure 38. Distribution of *Neopodocinum* (Acari: Macrochelidae) in Indonesia (Hartini, 2017)

There are 8 species of nematodes from genus *Syphacia* or known as pinworm in Indonesia. Pinworms are special parasites in mice (Rodentia). The distribution is shown in Figure 39.

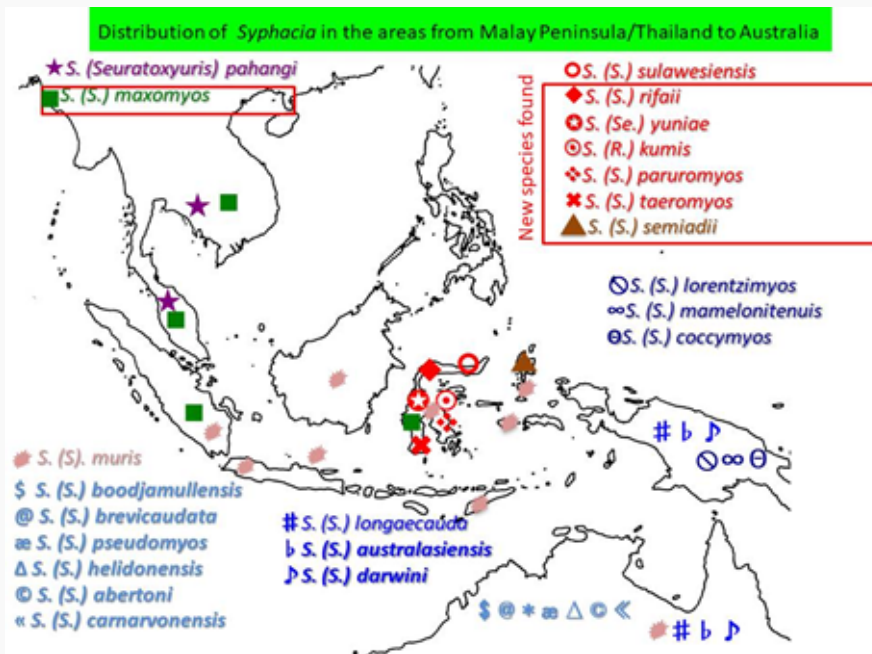


Figure 39. Distribution of species from the genus *Syphacia* in Indonesia (Dewi et al. 2016)

Protection Status

Referring to the Minister of Environment and Forestry of the Republic of Indonesia Regulation No. P.92/MENLHK/SETJEN/KUM.1/8/2018 on Protected Plants and Animals Species, the number of animal protection lists reach 787 species. The largest number of protected fauna species is from the bird group which reached 557 species and was followed by 137 species of Mammals group (Table 20). The list of protected animals 2018 has been updated based on species/subspecies grouping. Previously, the list is mixed between a group of species, genera, and families. In addition, several Indonesian non-native species were also present in the list.

Table 20. Distribution of protected fauna species based on the Minister of Environment and Forestry of the Republic of Indonesia Regulation No. P.92/MENLHK/SETJEN/KUM.1/8/2018

Groups	Number of protected species
Mammals	137
Birds	557
Amphibians	1
Reptiles	37
Fish	20
Insects	26
Crustacea	1
Molluscs	5
Xiphosurans	3
Total	787

Terrestrial Fauna Endemicity

The record of endemicity of Indonesian terrestrial fauna in 2014 is shown in Figure 40. The highest fauna endemicity level was distributed on the island of Sulawesi with 694 species, followed by Papua (569 species) and Sumatra (512 species). Molluscs are the highest endemicity group of fauna compared to other fauna groups, reaching 385 species in Sulawesi. There are two ancient lake systems (Lake Malili and Lake Poso) in Sulawesi that affect the endemicity of various freshwater fauna species such as fish, molluscs and crustaceans in the region (Vaillant et al., 2011).

Indonesian endemic birds have increased from 372 species (Sukmantoro et al. 2007) to between 442–503 species (BirdLifeInternational, 2018; Gill & Donsker, 2018). Distribution of endemic birds in Indonesia is as follows: Sumatra 50 species, Kalimantan 6 species, Java 68 species, Sulawesi 141 species, Maluku 118 species, 78 Nusa Tenggara species, and Papua 60 species (Gill & Donsker, 2018 with modifications).

A Mammal species, namely Orangutan tapanuli (*Pongo tapanuliensis*) is the last primate identified in 2017 as a new and endemic species in the Batang Toru region, Sumatra.

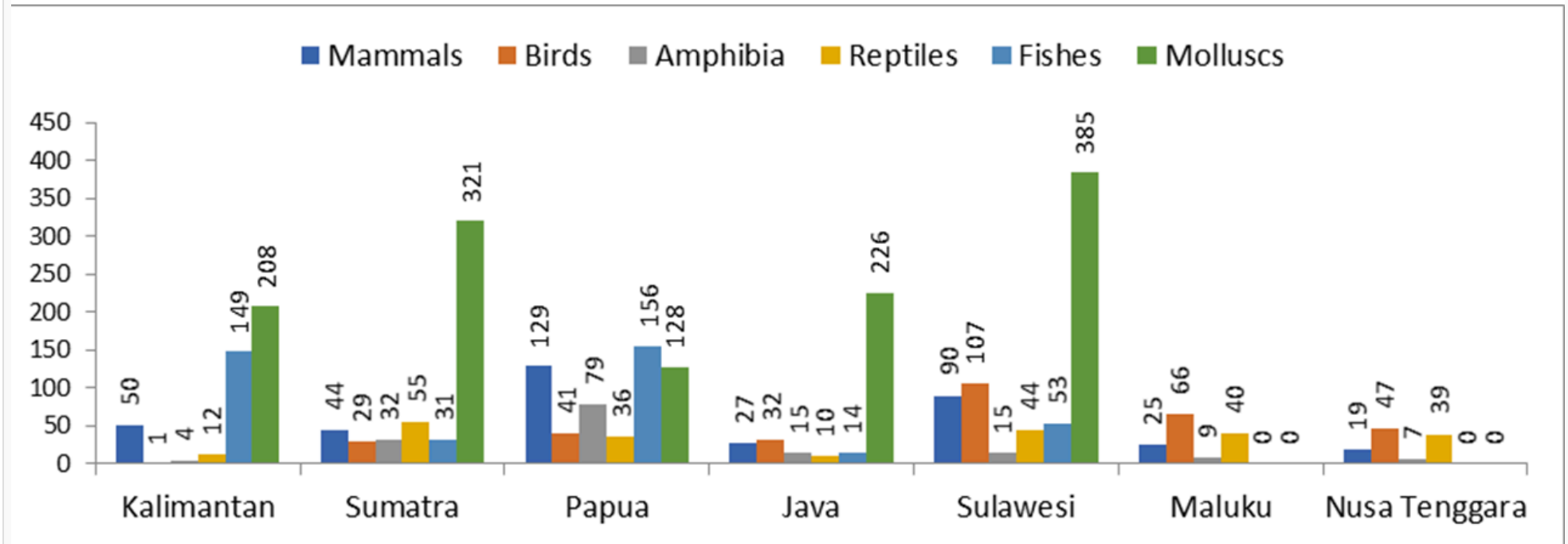


Figure 40. Distribution of endemic fauna on large islands in Indonesia

1.3. Increasing number of identified Indonesian microorganisms

Globally, knowledge about microorganisms is still very minimal where 99.999% of microorganism taxon is unknown (Locey & Lennon 2016) 7. Taking into account the vastness of Indonesia's territory and the potential for diversity of its microorganisms, the discovery of the number of Indonesian microorganisms is not easy.

Until 2017, data on the collection of living microorganisms identified in Indonesia reached more than 8,000 isolates. The collection can be found in 7 institutions which have culture collections, which are Indonesian Culture Collection/InaCC (Indonesian Institute of Sciences), IPB University Culture Collection/ IPBCC (IPB University), Center for Biotechnology and Agricultural Genetic Resources Culture Collection/BiogenCC (Ministry of Agriculture), The Southeast Asian Ministers of Education Organization Biological Tropical/SEAMEO BIOTROP, Fish Quarantine Agency, Fisheries Product Quality Control and Safety/BUSKIPM (Ministry of Marine Affairs and Fisheries), University of Indonesia Culture Collection/UICC (University of Indonesia), and PT Smart Tbk (Jakarta). The collected microorganisms are divided into several large taxons, namely archaea, mold, yeast, microalgae, bacteria and viruses (Table 21). The distribution of collection sources of Indonesian microorganisms covers 24 provinces (Figure 41).

Table 21. Number of microorganism isolates deposited in various culture collections in Indonesia

Microorganism groups	Number of isolates	
	2014	2017⁶
Archaea	0	78
Mold	78	1597
Yeast	57	1491
Bacteria	247	5134
Virus	15	9

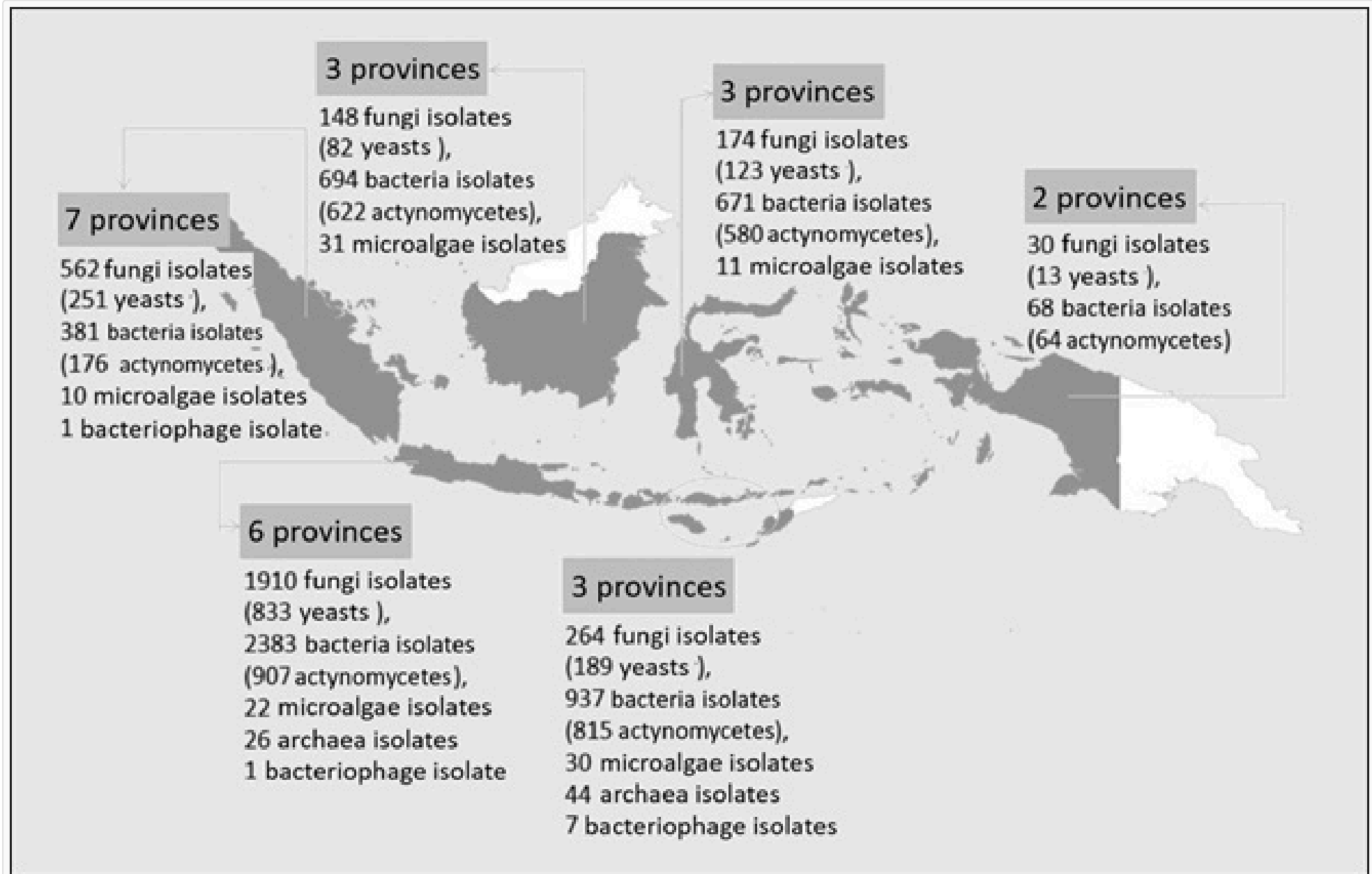


Figure 41. Number of live collection of microorganism and distribution of sample collection location

Table 22. Number of genera groups of microorganisms in Indonesia relative to the world estimation

Microorganism groups	Number of genus in the world	Number of genus in Indonesia	Percentage
Archaea	138 ^a	21	15.21
Yeast	149 ^b	62	41.61
Bacteria	2,425 ^a	198	8.16

Archaea

The isolation activities of microorganisms groups from the Archean domain generally target species that are resistant to very high salinity. Until 2017, the number of archaic isolates deposited in the national reference center of InaCC microorganisms has reached 78 isolates, most of which were collected on the island of Bali (Figure 42).

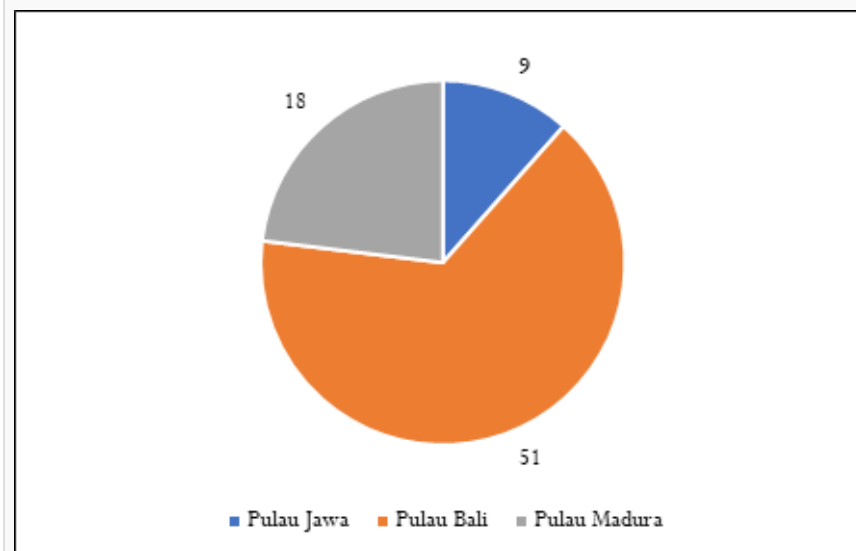


Figure 42. Diagram of the number of identified archaea isolates collected from three islands in Indonesia⁸

Mold

The number of mold isolates identified and stored in Indonesian cultures collection was recorded at 1,597 isolates from all of the Large Islands in Indonesia (Figure 43) 8. The isolates consisted of 130 genera with *Aspergillus* as the most identified genus, with 333 isolates (Figure 44).

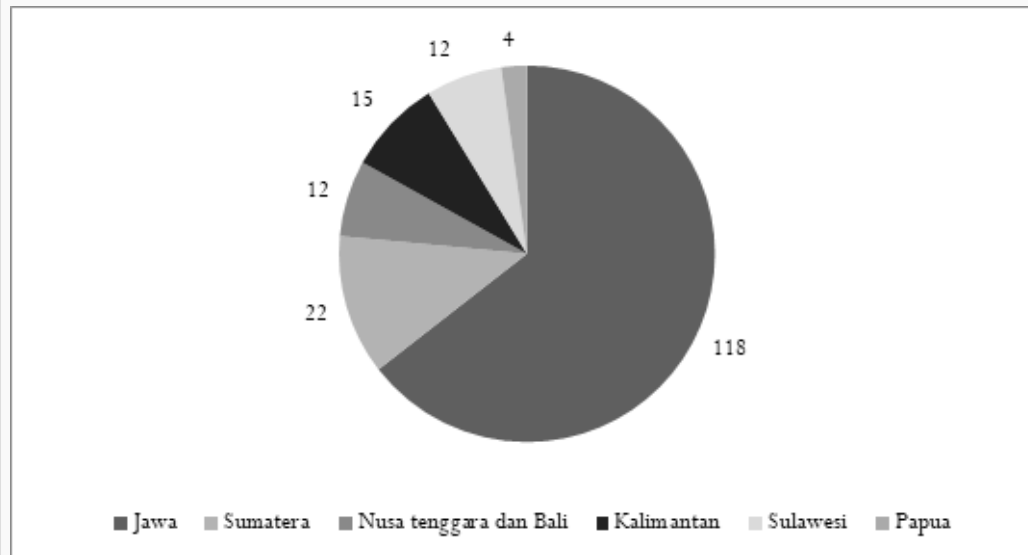


Figure 43. Diagram of the number of identified mold genus collected from six islands in Indonesia

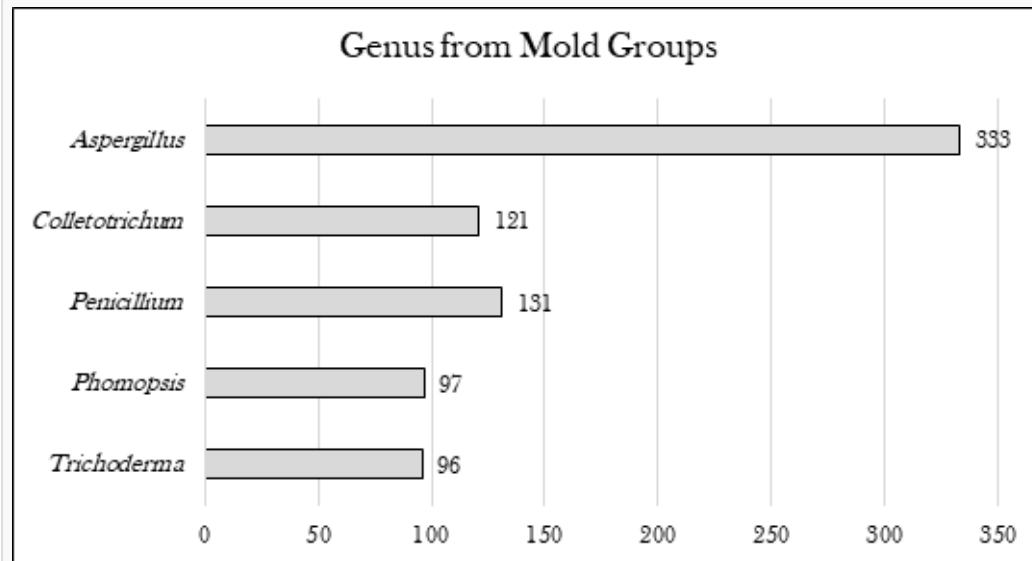


Figure 44. Comparison of the number of isolates from the genus of the most identified groups of molds from the territory of Indonesia

Yeast

Yeast is a fungi group that comprises of a single cell. Based on global data, the number of yeast species that have been reported reaches 1,500 species from 149 genera⁹. The amount of yeast reported in Indonesia was 1,491 species from 62 genera (Figure 45). The highest number of genus collected was *Candida* with 478 isolates (Figure 46).

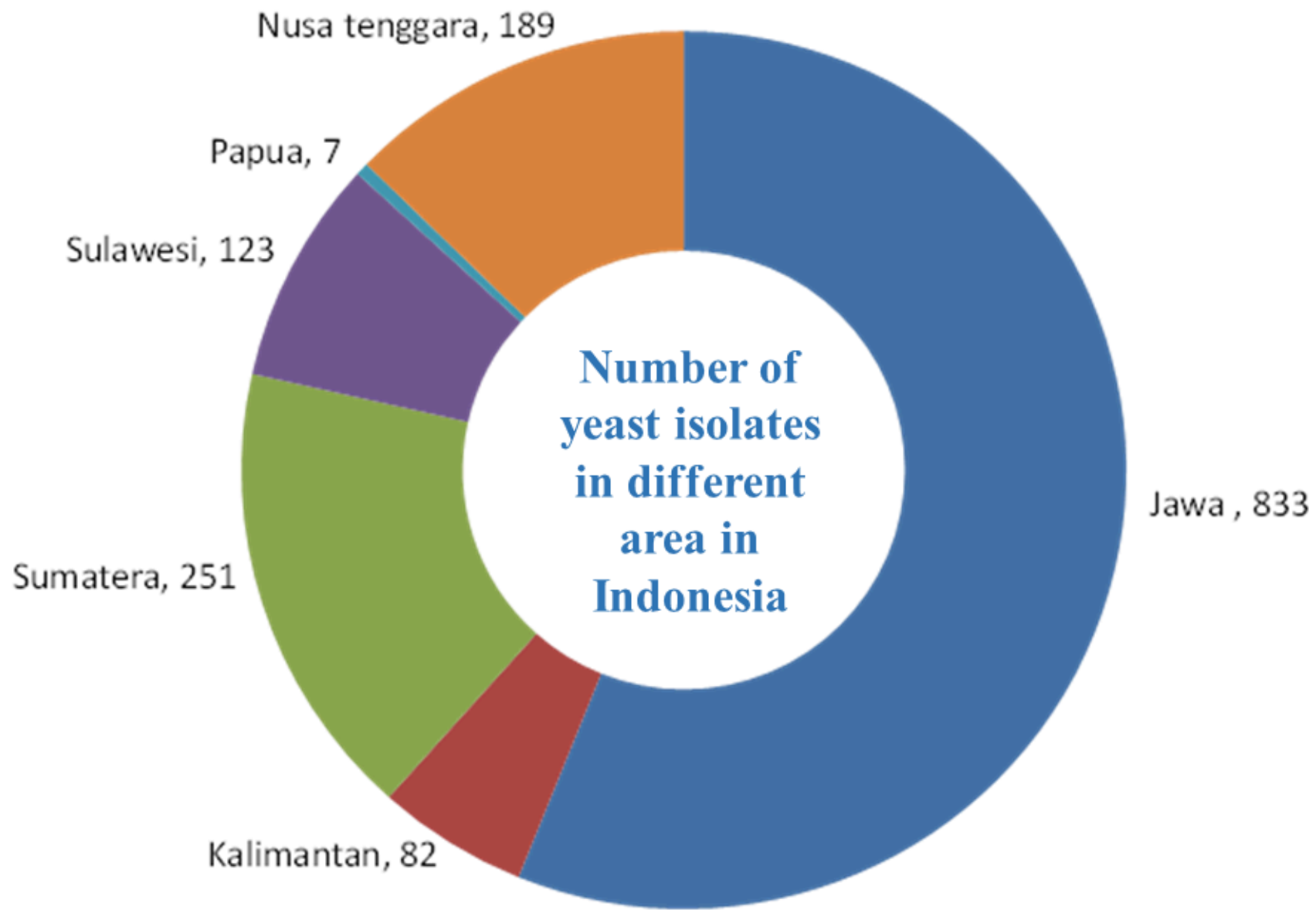


Figure 45. Diagram of the distribution of the number of yeast isolates based on the location of sampling

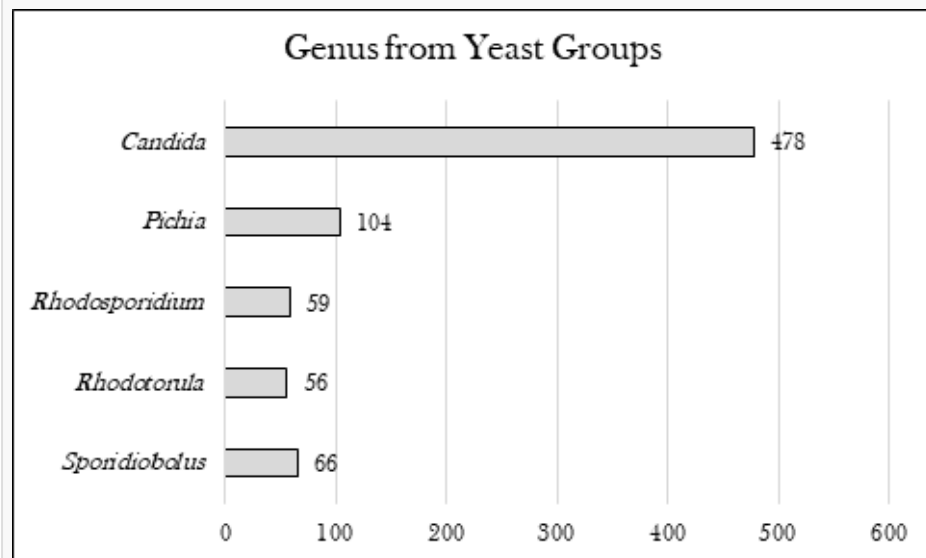


Figure 46. Comparison of the number of isolates from the genus of the most identified yeast group from the Indonesian region

Bacteria

Until 2016, there are 30 phyla of bacteria in the world which were divided into 68 classes, 156 orders, 365 families, and 2,425 genera (LPSN 2016). In total, there are 134 bacterial genera from the Indonesian archipelago deposited in Indonesian cultures collection. This amount does not include bacteria from Phylum of Actinobacteria (Figures 47 & 48)

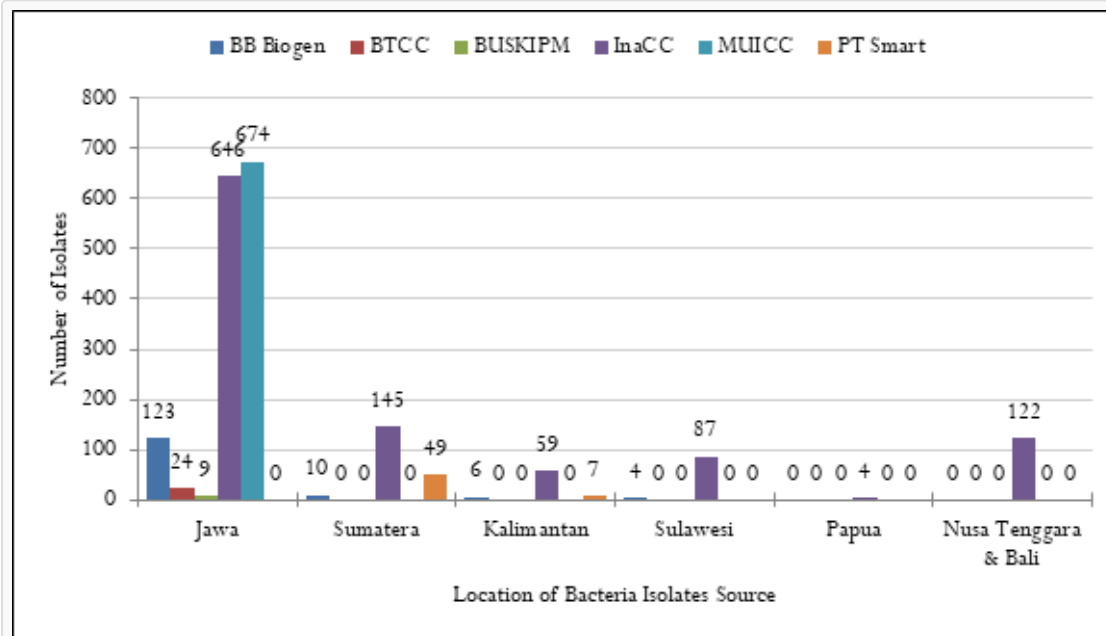


Figure 47. Diagram of the number of Indonesian bacterial isolates identified and stored in six culture collections in Indonesia

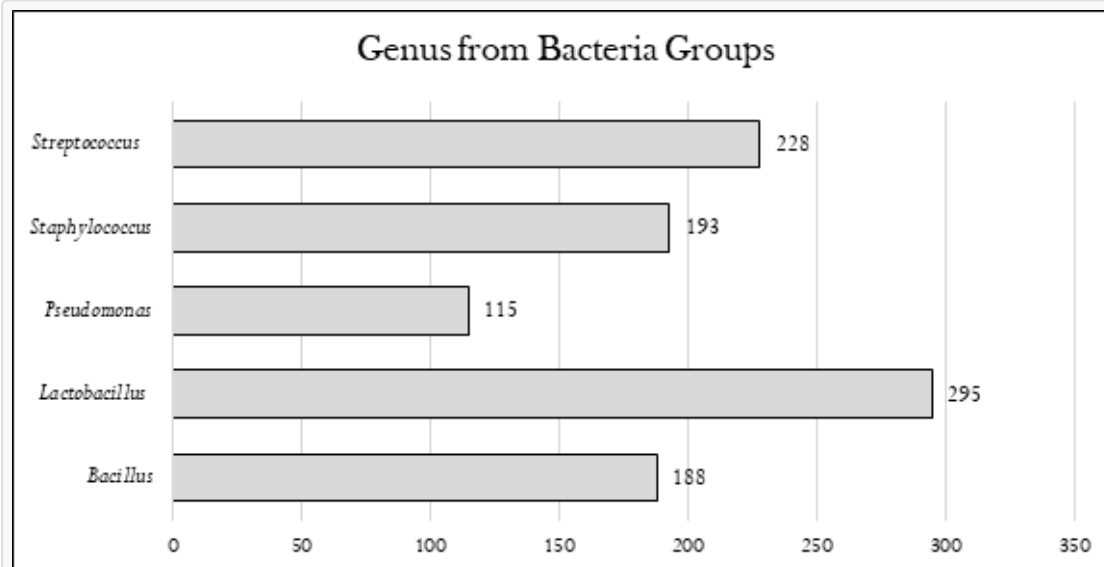


Figure 48. The number of isolates of the most identified group of bacteria from the territory of Indonesia

Living collections of Actinobacteria recorded in Indonesia are grouped into 25 families of 64 genera. The highest number of live collections is from the *Streptomyces* family as many as 1,820 isolates, *Actinoplanes* family as many as 422 isolates, 126 *Micromonospora* family as many as 126 isolates and *Nonomurae* family as many as 113 isolates. The highest distribution area of Actinobacteria group collection is originated from Java, Bali and Nusa Tenggara (Figure 49).

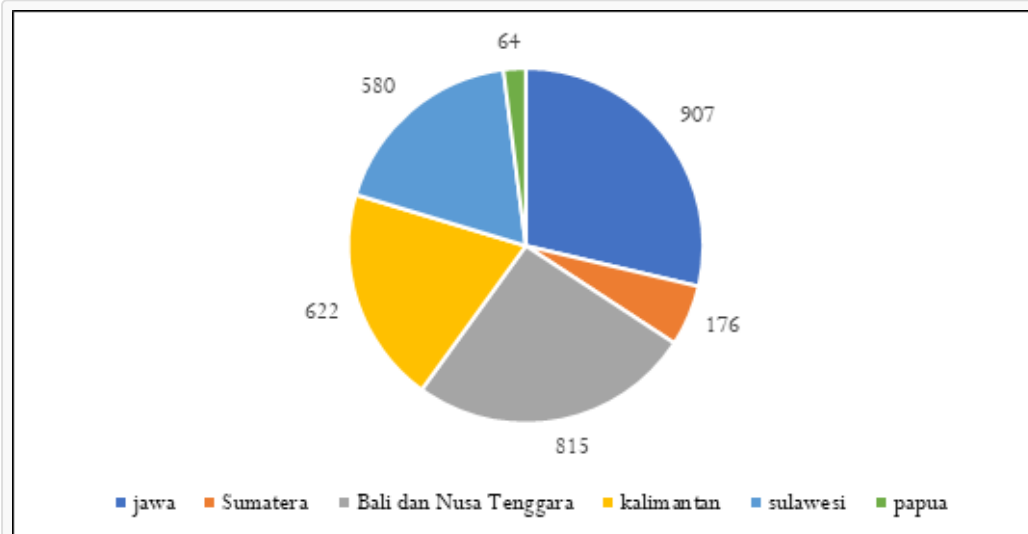


Figure 49. Diagram of the number of Actinobacteria isolates identified in Indonesia and stored in culture collection

Virus (Bacteriophage)

Until now, InaCC had deposited nine bacteriophages consisting of seven phages of *Escherichia coli* and two phages of *Lactobacillus*. *E. coli* bacteriophages were all isolated from rivers and ponds and replicated through lytic phase. Whereas *Lactobacillus* bacteriophages were isolated from lactic acid bacteria isolated from tauco and shrimp paste, which replicated through a lysogenic phase.

2. Marine Biodiversity in Indonesia

Indonesia marine biological richness and distribution

One of the centers of the diversity of marine life and the place of origin of marine biota in the world is around the Indonesian and Philippine seas. The number of species of marine biota in the world is estimated to be between 250,000-300,000 species. Every year there are around 1,300 – 1,500 new types of marine biota found in the world (Snelgrove, 2010 in Suharsono, 2014). Indonesia's sea area is believed to have the highest diversity in the world, especially for: sharks, reef fish, corals, sponges, foraminifera, eels, stomatopods, sea snakes and mangroves (Suharsono, 2014). The distribution of marine biota is caused by cross-Indonesian flows, seasonal flow patterns that occur due to the presence of west and east monsoons and tidal flow patterns (Suharsono, 2014). Data on the types of Indonesian marine biota are presented in Table 23.

Taxa	Number of species in the world	Number of species in Indonesia 2014 (NatRep 2014)	Number of species in Indonesia for 2018 record (Suharsono-2014)	Additional data of new species and new records other than Suharsono (2014)*
Protozoa/Plankton				
Foraminifera			250	
Plankton			66	
Porifera/sponge			262	
Cnidaria/coral		450		
Scleractinia/stony coral	11,000		569	
Non-scleractinia			8	
Octocorallia/soft coral			311	
Gorgonia/sea fans			271	
Annelida				
Polychaeta/sea worms		527	588	2
Crustacea	43,000			
Copepods		309	382	10
Alpheid			159	
Brachyura			443	3
Amphipods			250	
Isopodes			223	
Macrura			37	
Molluscs	40,000			
Gastropods			774	
Scaphopods			3	
Bivalves			215	
Cephalopods			33	
Echinoderms	7,000	557	651	
Fish		3,476	3,424	9
Marine mammals			364	

*References: Mulyadi, 2014; Rahayu and Ng, 2014; Allen et al, 2014; Peristiwady et al, 2014; Fahmi and White, 2015; Pamungkas, 2015; Allen et al, 2016; Mulyadi et al, 2017; Pamungkas, 2017; Gill, et al, 2017; Allen et al, 2017; Ardania et al, 2017.

Threats to species diversity

Threats to the diversity of marine biota in Indonesia are coming from natural and anthropogenic aspects. Natural factors that threaten marine biodiversity are caused by global climate change, such as bleaching, the explosion of predatory biota populations (pests and diseases), and natural disasters, such as, earthquakes, volcanic eruptions, floods and others. Anthropogenic factors include overfishing and damage to coral reef habitats, seagrasses and mangroves (Suharsono, 2014).

Coral

The order of scleractinia in the world consists of 15 families and 108 genera with around 828 species. Coral distribution in Indonesia consists of 82 genera with around 569 species (Figure 50). Endemic coral species in Indonesia with 4 species, with the distribution presented in Figure 51. The status of coral protection in Indonesia is based on the Decree of P.92/MenLHK/Setjen/ Kum.1/8/2018 from the Ministry of Environment and Forestry which includes only the genus *Anthipatharia* with more than 500 species with protected status. All types of stony corals (*Scleractinia*), *Anthipatharia* spp, *Melleporiidae* spp, *Tubiporidae*, *Stylateridae* and *Corallium* spp from the Mediterranean are included in the CITES Appendix II.

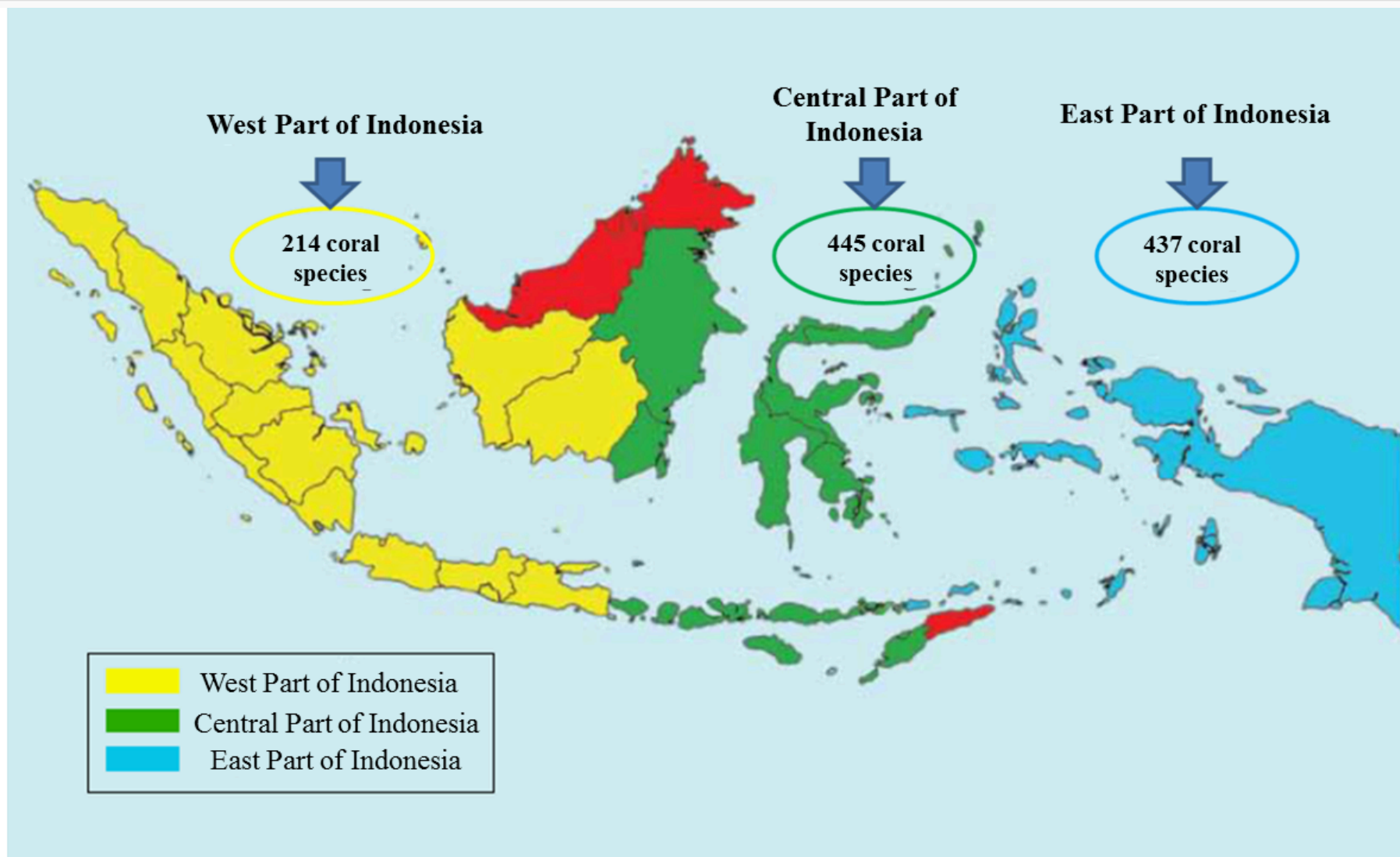


Figure 50. Map of coral distribution and number of species in each region of Indonesia per year (source: Status of Indonesian coral reefs-P20 LIPI, 2017)



Figure 51. Endemic coral distribution in Indonesia (source: Suharsono, 2014)

Crustacean

Class of Copepoda and Malacostraca are the two most intensively studied groups of Crustaceans in Indonesia. Of the two classes, the most studied orders are Stomatopoda, Decapoda and Amphipoda. The order of stomatopoda in Indonesia is recorded having 110 species out of 300 world species. Whereas the most studied from Order of Decapoda is the group of Hermit crab, which consists of the families of Coenobitidae, Diogenidae and Paguridae, with a total of around 102 species (Rahayu and Wahyudi 2007 in Suharsono, 2014;). The Crustacean genus that lives on land, including Birgus and Coenobita from the family Coenobitidae. The well-known land crustacean group is coconut crabs (*Birgus latro*) which is distributed around Sulawesi and North Maluku. This species is subjected to high utilization pressure as a food source, even though they are in a protected status.

Molluscs

Molluscs groups consist of the class of Gastropoda, Bivalvia, Cephalopoda, Scaphopoda, Polyplacopora, and Monoplacopora. Bivalvia includes all shellfish, e.g. tridacna, pearl oysters, and blood cockle. In the world, there are 10 types of tridacna, seven of which are found in Indonesia (*Tridacna gigas*, *T. derasa*, *T. squamosa*, *T. procea*, *T. maxima*, *Hippopus hippopus*, *H. porcellanus*);).

Some protected species of molluscs are *Tridacna* spp (Giant clam), *Trochus niloticus* (commercial top shell), *Turbo marmoranthus* (Turbo), *Charonia tritonis* (triton). While Tridacnidae and Strombus gigas are included in Appendix II CITES.

Echinoderms

The Echinoderms group consists of five classes, Crinoidea, Asteroidea, Ophiuroidea, Echinoidea and Holothuroidea. The most intensively studied class is Holothuroidea. Holothuroidea is divided into six orders, the most economically valuable order is Aspidochirotide. In this order, there are families of Holothuriidae and Stichopodidae. In Indonesian waters, there are more than 350 types of sea cucumber, of which 54 species are included in national and international trade (Setyastuti and Purwati, 2015). Genus Comanthus from Crinoidea class is often traded for ornaments in marine aquariums (Suharsono, 2014). Currently, echinoderms do not have protection status, both at the national and CITES levels.

Polychaeta

The status of polychaeta diversity in the 2014-2017 period is increasing by two species. The two new species, namely *Polymastigos javaensis* n.sp (Pamungkas 2015) and *Capitella ambonensis* (Pamungkas, 2017)

Bony Fish (Osteichthyes)

Until now, there have been around 4,000 fish species in Indonesia (Ambak et al. 2010). The status of fish diversity in Indonesian waters in the 2014-2017 period is 7 new species has been found and 2 new records of coral reef fish is made. These seven new species are *Sueviota bryozophila* (Teleostei: Gobiidae) from Ambon waters, *Pseudotrichonotus caeruleoflavus* (Teleostei: Pseudotrichonotidae) from southern Flores, *Vanderhorstia lepidobucca* (Teleostei: Gobiidae) from Lembah Strait, North Sulawesi, *Pseudochromis stellatus* (Teleostei: Pseudochromidae) from Batanta and Raja Ampat Black Stone, West Papua, *Upeneus farnis* n. sp. from Bitung, North Sulawesi, *Synodus nigrotaeniatus* (Teleostei: Synodontidae) and *Cymatognathus aureolateralis* (Actinopterygii: Perciformes) from the waters of the Lembah Strait, North Sulawesi (Allen et. al., 2014, 2016, 2017; Gill et. al., 2014; Uiblein and Peristiwady, 2017; Uiblein et. al., 2017).

Two new records species are: *Plectranthias retrofasciatus* (Teleostei: Serranidae) and *Plectranthias randalli* (Teleostei: Serranidae) from the coral area in Bitung North Sulawesi (Peristiwady et. Al., 2014).

Cartilaginous fishes (Condriichthyes)

The cartilaginous fishes group that gets the most attention is sharks and rays. The estimated number of shark and ray species in the world is 375 - 500 species, of which around 78 sharks and 56 stingrays are described from Indonesian waters (White et. Al., 2006). It is known that along the southern sea of Java there are as many as 69 types of sharks (Dharmadi et. Al., 2007).

Four species of Indonesian sharks (*Carcharinus longimanus*, *Spyrna mokkaran*, *Spyrna leuwini*, *Sphyrna zygaena*) have been included in the CITES Appendix II.

Anguilla (freshwater eels)

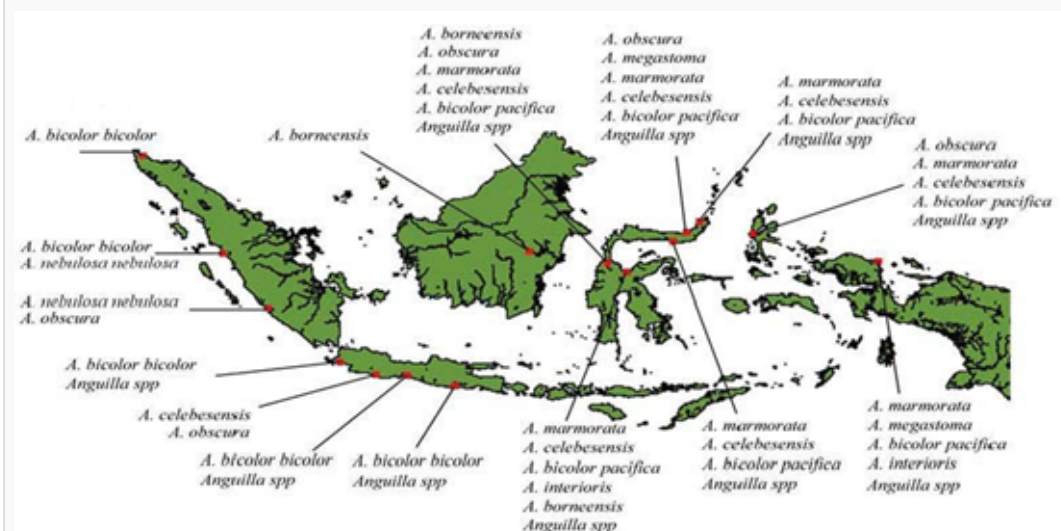


Figure 52. Distribution of Indonesian freshwater eels (source: Sugeha et al., 2008)

The number of species of freshwater eels (Anguillidae) throughout the world is 18, of which nine are found in Indonesian waters (*Anguilla nebulosa nebulosa*, *A. bicolor bicolor*, *A. interioris*, *A. marmorata*, *A. borneensis*, *A. bicolor pacifica*, *A. obscura*, dan *A. megastoma*) (Figure 52). The distribution of freshwater eels in Indonesia is: four types in western Indonesia, five in central Indonesia, and six in eastern Indonesia. *A. bicolor* is only found in central Indonesia, *A. bicolor bicolor* and *A. nebulosa nebulosa* are only found in western Indonesia, while *A. obscura* and *A. megastoma* are only distributed in eastern Indonesia (Sugeha et al. 2008). There are no Indonesian freshwater eels that are included in CITES Appendix II.

Marine mammals (Cetacean)

The group of marine mammals (Cetaceans) is known as migratory species. In Indonesian waters, there are 31 species recorded. In certain seasons, the whale crosses the Timor Strait in order to migrate from the Indian Ocean to the Banda Sea. The Cetacean order is divided into two sub-orders, namely Mysticeti and Odontoceti. The dolphins of the Delphinidae family in Indonesia have around 11 species that are scattered in almost all of Indonesia's marine waters. One species of dolphin that sometimes goes far upstream is the Irawadi dolphin or Mahakam dolphin (*Orcaella brevirostris*), on the Mahakam river. (Figure 53).

All Cetaceans are included in the CITES Appendix II and several whales, which are *Balaenoptera borealis* (Blue Whale), *Balaenoptera musculus*,

Megaptera novaeangliae (Humpback Whale), and *Balaena mysticetus* are included in CITES Appendix I. The Indonesian government includes all Cetaceans as protected animals.

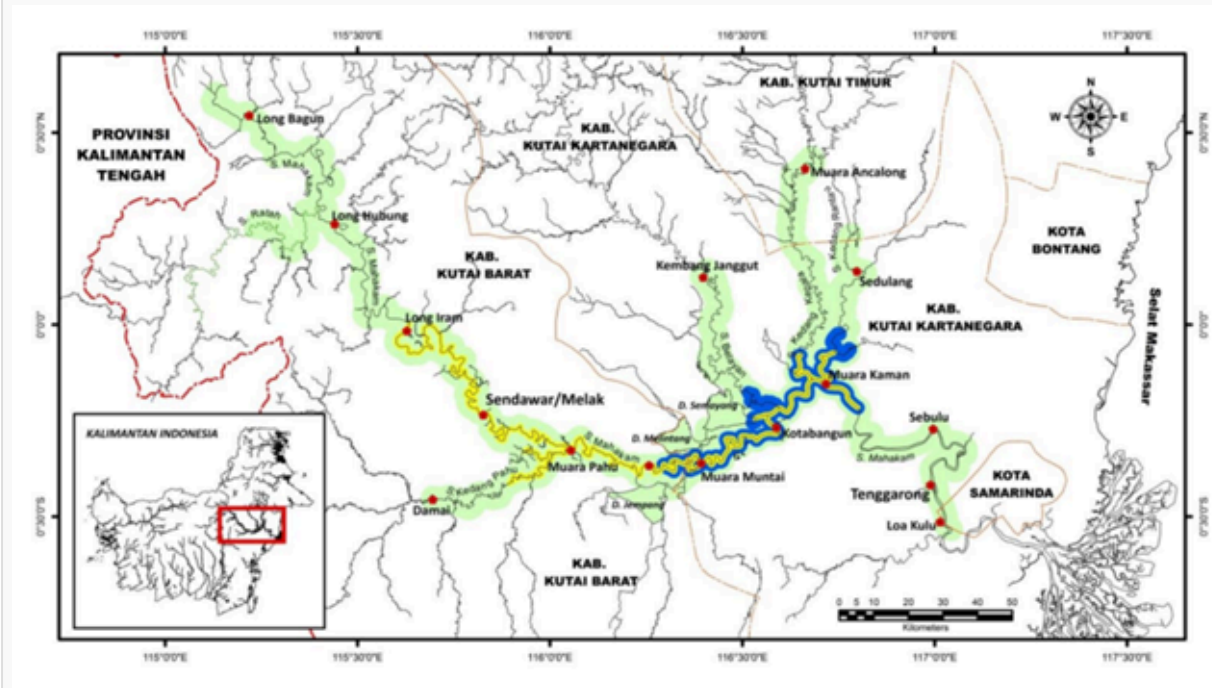


Figure 53. Distribution of Mahakam dolphins in the Mahakam River basin, East Kalimantan. Green shading is a historical and seasonal distribution; Yellow shading is distribution recorded from 2000-2007; Blue shading is the most recent distribution (Noor, 2016)

Algae

Algae (seaweed) are spread throughout the Indonesian sea waters, especially those with clear conditions, medium flow with the dead coral bottom. Some seaweed has a high tolerance and can live under conditions of low salinity, a rather cloudy place with a mud base.

The distribution of seaweed does not show a certain pattern, but there is a difference in dominance between seaweed living in the waters of the Indian Ocean and the Pacific Ocean (Atmadja, 1999). The difficulty in determining the pattern of distribution of seaweed is due to the very high dynamics of growth. Some types of seaweed that always become dominant in various waters in Indonesia include: *Acanthopora*, *Laurencia*, *Dictyota*, *Halimeda*, *Caulerpa* and *Sargassum* (Atmadja, 1999). Endemic seaweeds include *Euchema serra*, better known as "Baliweed", which is only found in southern Bali. Other species with limited distribution are *Tithanophora* sp., which is found in the Banggai Archipelago, Central

Sulawesi.

Seagrass

The diversity of seagrass species in the world is 60 species (2 families and 12 genera) (Kuo & McComb, 1989), where 15 species (2 families and 7 genera) are found in Indonesian waters (Hernawan et al, 2017; figure 54). From the distribution of species in Indonesia, the presence of seagrasses in the waters of eastern Indonesia tends to be found in unhealthy conditions (Figure 55).

Distribution of Seagrass Species in Indonesia

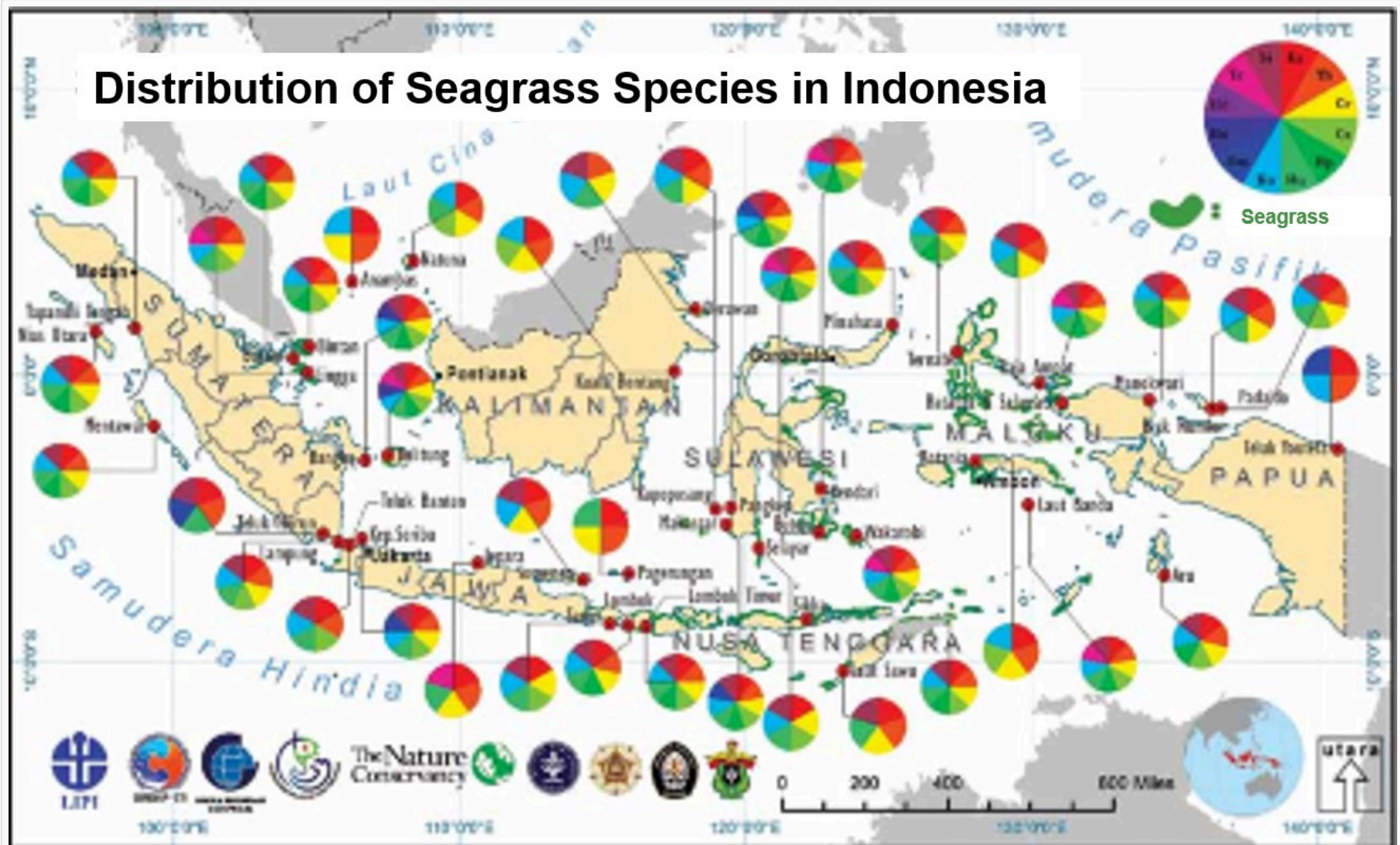


Figure 54. Distribution map of seagrasses in Indonesia (Source: 2017 Seagrass Status Book - P2O LIPI)

Indonesia Seagrass Status 2017

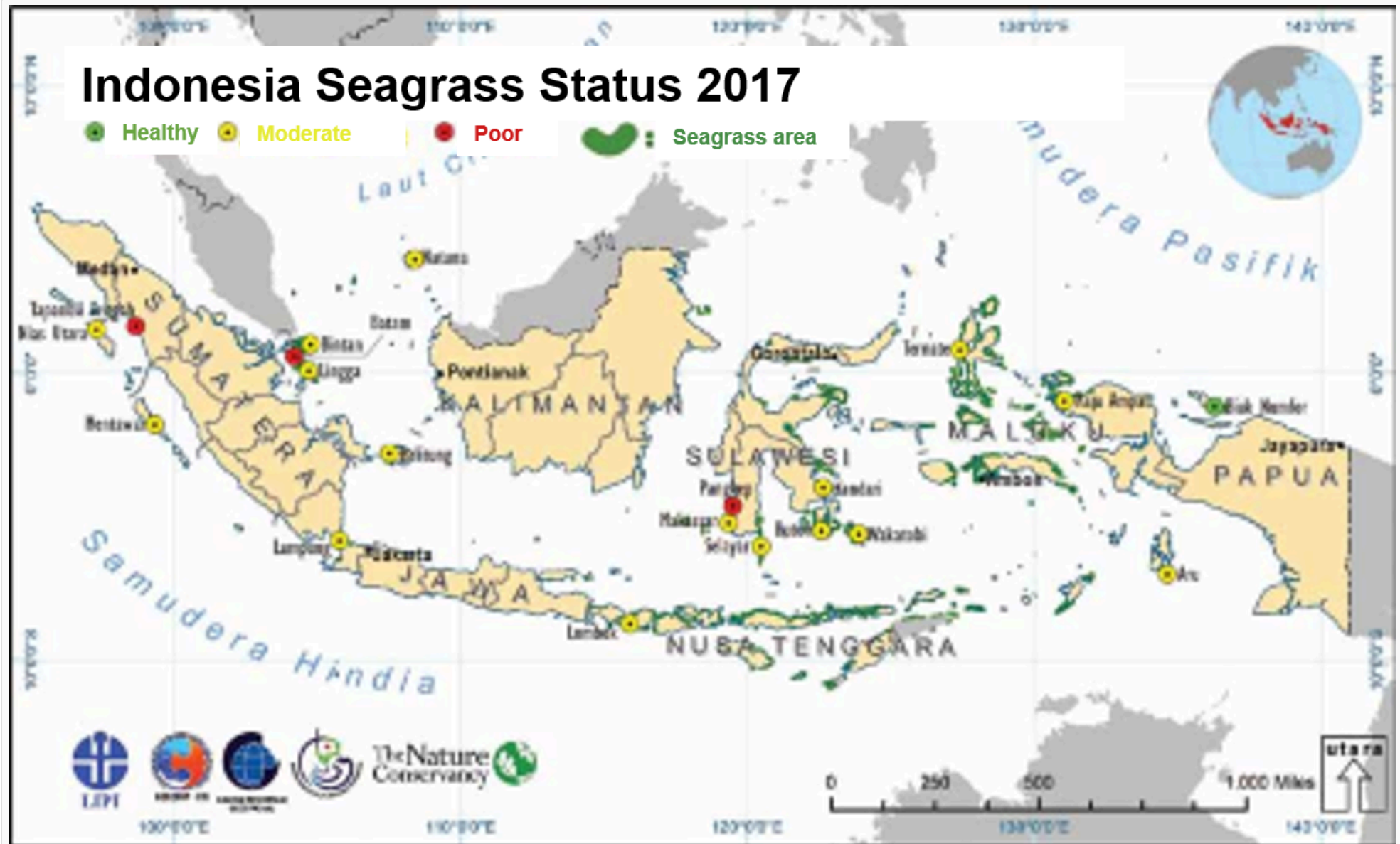


Figure 55. Map of Status of Indonesian Seagrass 2017 (Source: Seagrass Status Book 2017-P20 LIPI)

Mangrove

Mangroves can be differentiated into true mangrove and mangrove associates, which are other land plants associated with mangroves. Mangrove species in the world's mangrove forest ecosystem are around 75 species (41 families and 24 genera), 55 of which are in Indonesia with 157 species of mangrove associates (Kusmana, 2002 in Suharsono, 2014).

Deep-sea coral

Deep-sea corals are corals that live at a depth of 50 meters to more than 1,000 meters. These corals are mostly solitary and only a few forms branched colonies. Collection or sampling of deep-sea corals has been carried out when there were large expeditions, such as the Challenger Expedition, Karubar Expedition, Danish Expedition, Snellius I-II Expedition, Galathea Expedition, Siboga Expedition, and Coridon Expedition.

The deep-sea corals that have been collected so far come from the Sulawesi sea (mainly from the Makassar and Halmahera Strait), Seram Island, Banda Sea, Arafuru Sea to around the Sawu Sea, Flores Sea, Bali Sea and the Java Sea. Most vertical distribution of deep-sea corals is found at depths between 200-400 meters. Overall, the richness of deep-sea coral species in Indonesia is 174 species, with the highest distribution found in the Banda Sea (138 species), Kei Island (125 species), Makassar Strait (66 species), Halmahera and Seram (30 species), Flores (51 type), and Java Sea (20 species) (Chairns, 1997; Tomaschik et al, 1997).

Distribution map of several other types of fauna

Indonesia has conducted population studies and mapping of selected types of biodiversity. Among those described in this segment are the distribution of turtles (Figure 56) and endemic birds (Figure 57)



Figure 56. Map of turtle distribution in Indonesia from WWF Indonesia

Mapping of endemic bird species was recorded in 22 locations, mostly in Eastern Indonesia, while in Kalimantan, Sulawesi and Sumatra there were recorded from 1 location for each island (Figure 57).

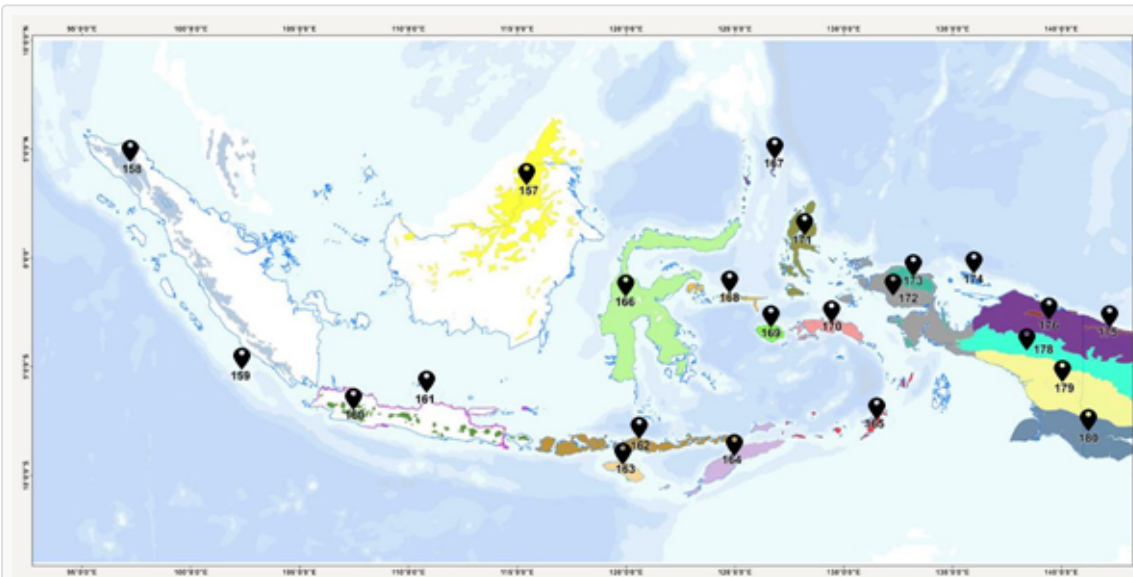


Figure 57. Location of endemic bird species in Indonesia

3. Maintenance of biodiversity data

3.1. The number of Indonesian biodiversity data that can be accessed globally

Indonesia realizes the importance of creating a database that can facilitate access to information with the development of the Indonesian Biodiversity Strategy and Action Plan 2003-2020. This is reinforced by the inclusion of a comprehensive and sustainable data mapping on biodiversity information in the revised 2015-2020 Indonesian Biodiversity Strategy and Action Plan. In order to achieve Aichi Target 19, in 2010, Indonesia has reported two activities carried out. The first activity was the establishment of the Indonesian Biological Diversity Clearing House Mechanism (BKKHI URL: <http://balaikliringkehati.menlhk.go.id/en/>) as a medium of information exchange in the field of biodiversity (biodiversity profile), laws, regulations, and species protection programs. BKKHI can be accessed through the portal address: <http://balaikliringkehati.menlhk.go.id/en/>. The second activity was the establishment of Indonesian Biodiversity Information Facilities (InaBIF: <http://inabif.lipi.go.id/>), as part of the Global Biodiversity Information Facilities (GBIF), to facilitate the exchange of biodiversity data and information that is integrated with and has interoperability between databases of various government institutions. InaBIF is one of the main nodes of BKKHI in Indonesia which supports Indonesia's status data. Since introduction in 2016, InaBIF has contributed 167,575 of data occurrences or about 10% of global data registered in GBIF (Figure 58).

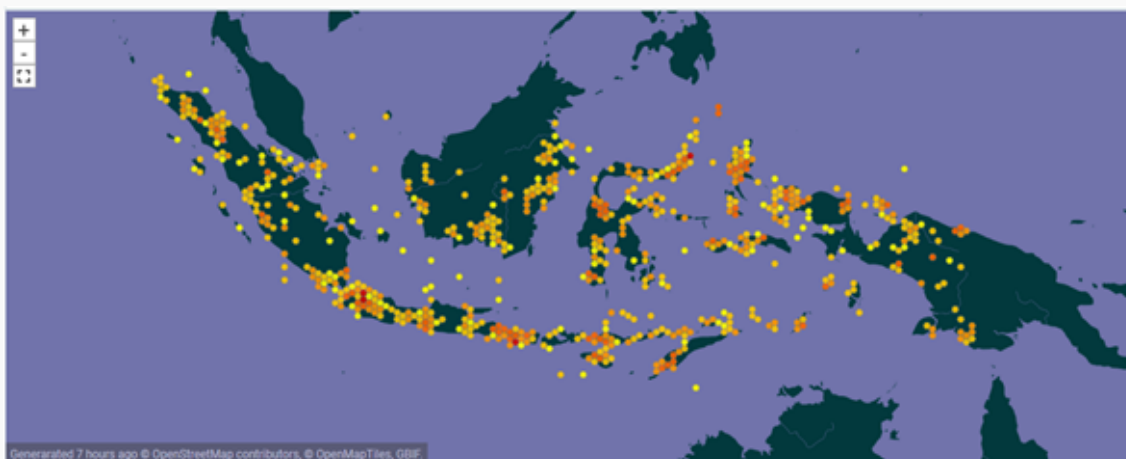


Figure 58. Distribution of biodiversity data from Government of Indonesia in GBIF

Until 2017 there have been 25 data nodes entered in InaBIF. The number of biodiversity data records that can be accessed through the InaBIF portal is 294,083 records (Table 24).

Table 24. Number of Indonesian biodiversity data

Biodiversity	Number of Species	Number of data records
Flora	41,892	201,243
Fauna	11,026	90,039
Microorganisms	665	2,801

The number of species of flora, fauna and microorganisms recorded in InaBIF are different from the number of flora, fauna and microorganisms reported in Terrestrial Biological Diversity (Segment 1.1). This is due to the data which has been entered from the InaBIF node still has some species names that have not been scientifically identified or is still mentioned as a synonym, so a further verification is still needed.

The data presented above are mostly terrestrial data. Currently, the Government of Indonesia is developing a database for marine biodiversity which will be presented in the Census of Marine Life Indonesia (COML-I). The database will contain a reference to the scientific collection of marine life in Indonesia.

3.2. Distribution map of several types of plants and animals

Information from the Indonesian flora depository shows that the distribution of dicot species can be found in almost all major islands. For ferns,

exploration in Java has largely been carried out, while the least exploration is in the Papua region (Figure 59). The highest presence of ferns is estimated in Papua. However, fern experts in the world state that the fern records in Papua still show an incorrect number of species. This is due to the lack of information and the lack of exploration of flora in the Papua region.

Based on the latest data on Indonesian flora, information on the types of fungi is still limited, therefore mushroom exploration throughout Indonesia is considered very necessary. Species exploration data will contribute to the finalization of the updated information. Exploration in Sumatra, Kalimantan, Sulawesi and Papua allows more discovery of new collections, new records and new types of fungi. The example of this mapping will become the basis for implementing the research on biodiversity by determining the chosen target location to get its biodiversity information done.

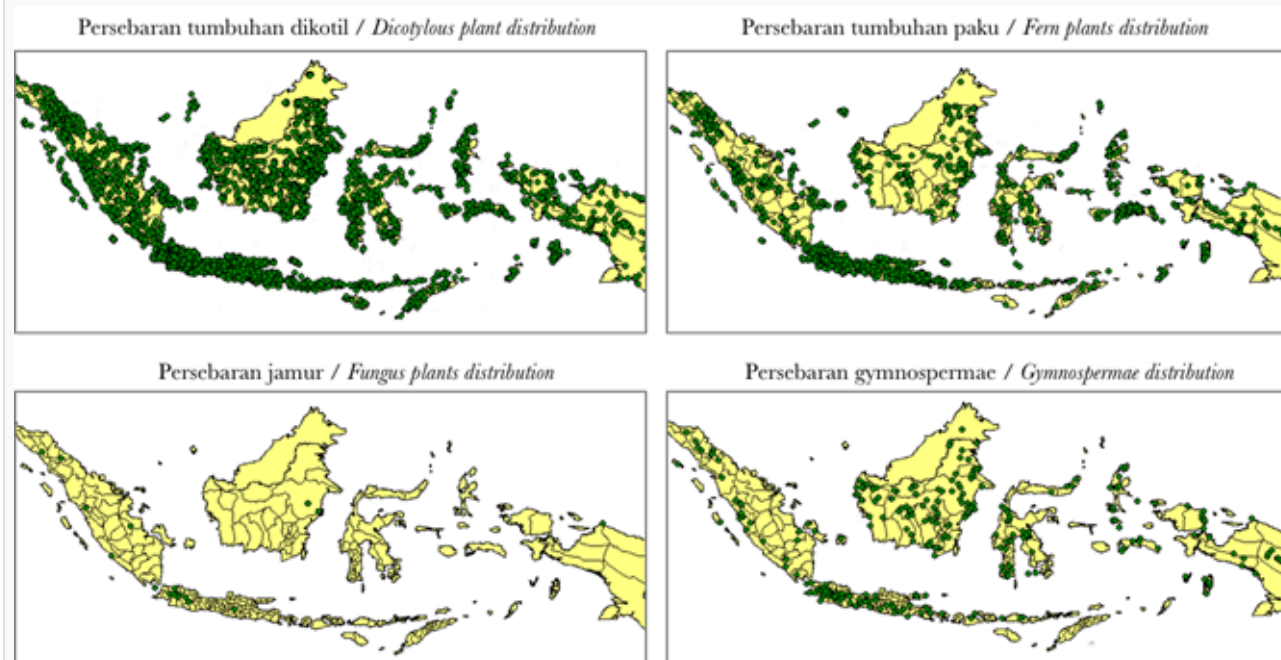


Figure 59. Flora distribution in Indonesia (Widjaya, et.al., 2014 & Widjaya & Maryanto, 2011)

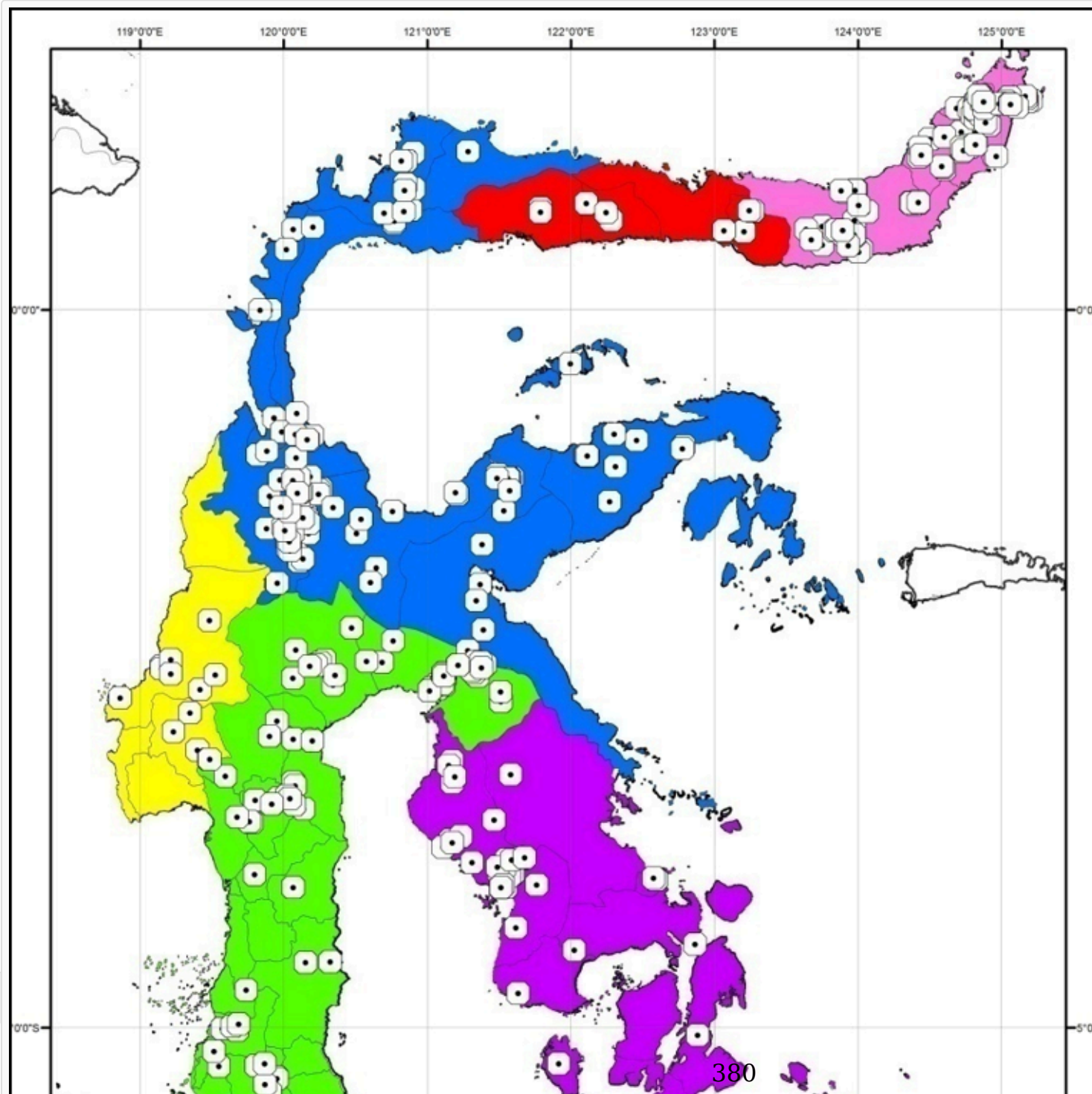
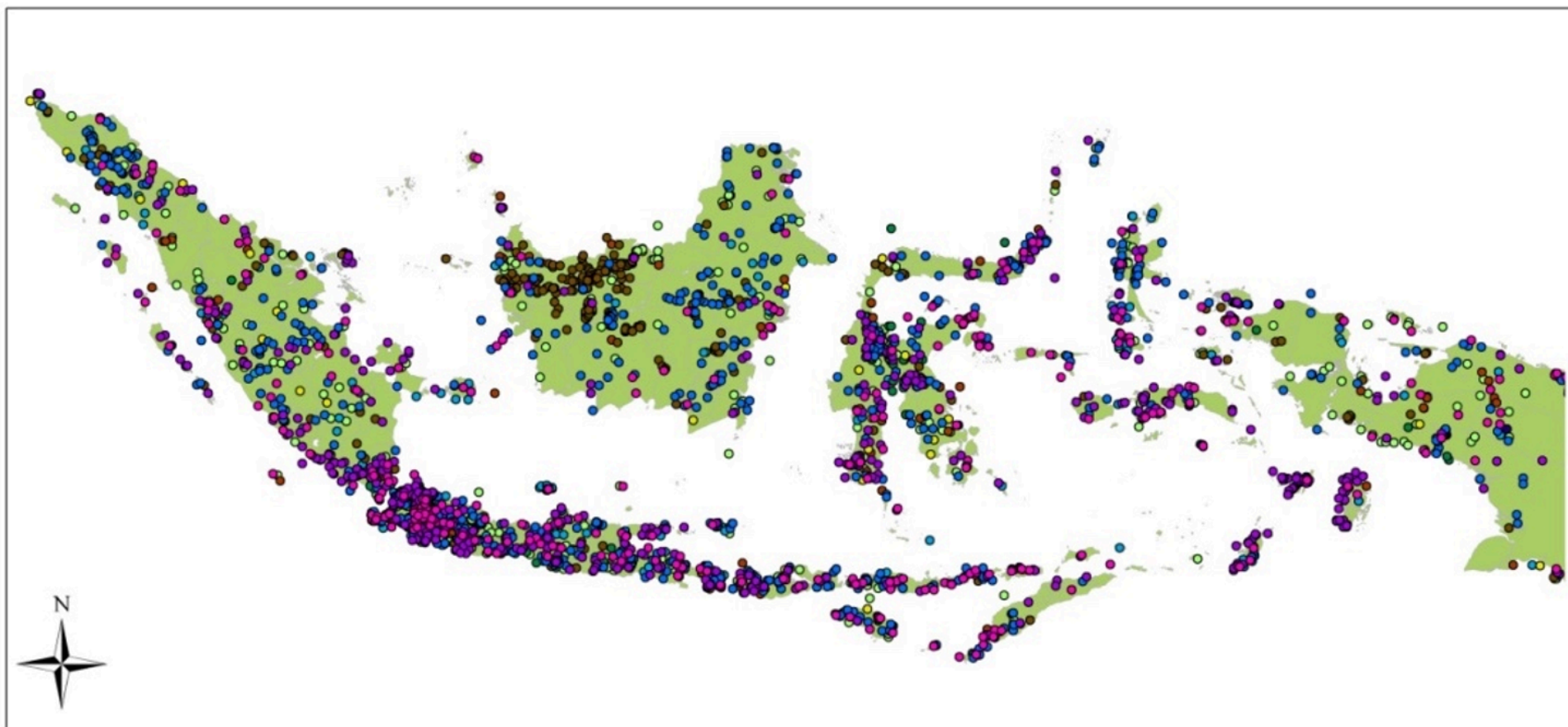


Figure 60. Distribution map of endemic flora species in Sulawesi

As well as being known as a country with high biodiversity, Indonesia is also known for its unique geology. The uniqueness of the geology causes high endemism of flora and fauna in Indonesia. The peculiarities of the characters possessed by each island cause a high number of endemic flora and fauna species, and almost every island has a very high species endemism for both flora and fauna (Figure 60).

Figure 61 shows the distribution of Indonesian fauna based on its taxon. Not differ than the distribution of flora, Java is an island with the most complete information on fauna compared to information on fauna biodiversity in eastern Indonesia, especially Papua, which has not yet been explored. Based on the data and information obtained from the study of the biodiversity of flora and fauna, the target area for the proper study of biodiversity information in the area of Eastern Indonesia and the outermost islands.



Legends:

- | | | | |
|------------|----------------|----------------|--------------------|
| ● reptilia | ● mamalia | ● ectoparasite | ● amphibia |
| ● pisces | ● insecta | ● crustacea | ■ Map of Indonesia |
| ● molusca | ● endoparasite | ● aves | |

Figure 61. Fauna distribution in Indonesia based on taxa

4. Number of specimen collection

Indonesia has a National Scientific Reference Center, namely Herbarium Bogoriense - for flora collections, Zoologicum Bogoriense Museum - for fauna collections, and Indonesian Culture Collection - for collections of microorganisms.

The flora collection is also stored in 32 herbaria throughout Indonesia which are managed by research institutions and universities¹⁴. Herbarium Bogoriense is the largest center of flora depository in Southeast Asia. The addition of the flora collection for the 2014-2017 period reached an average of 7,265 specimen numbers per year. As of the end of 2017, there were 945,465 specimens number recorded for flora specimen collection (Figure 62).

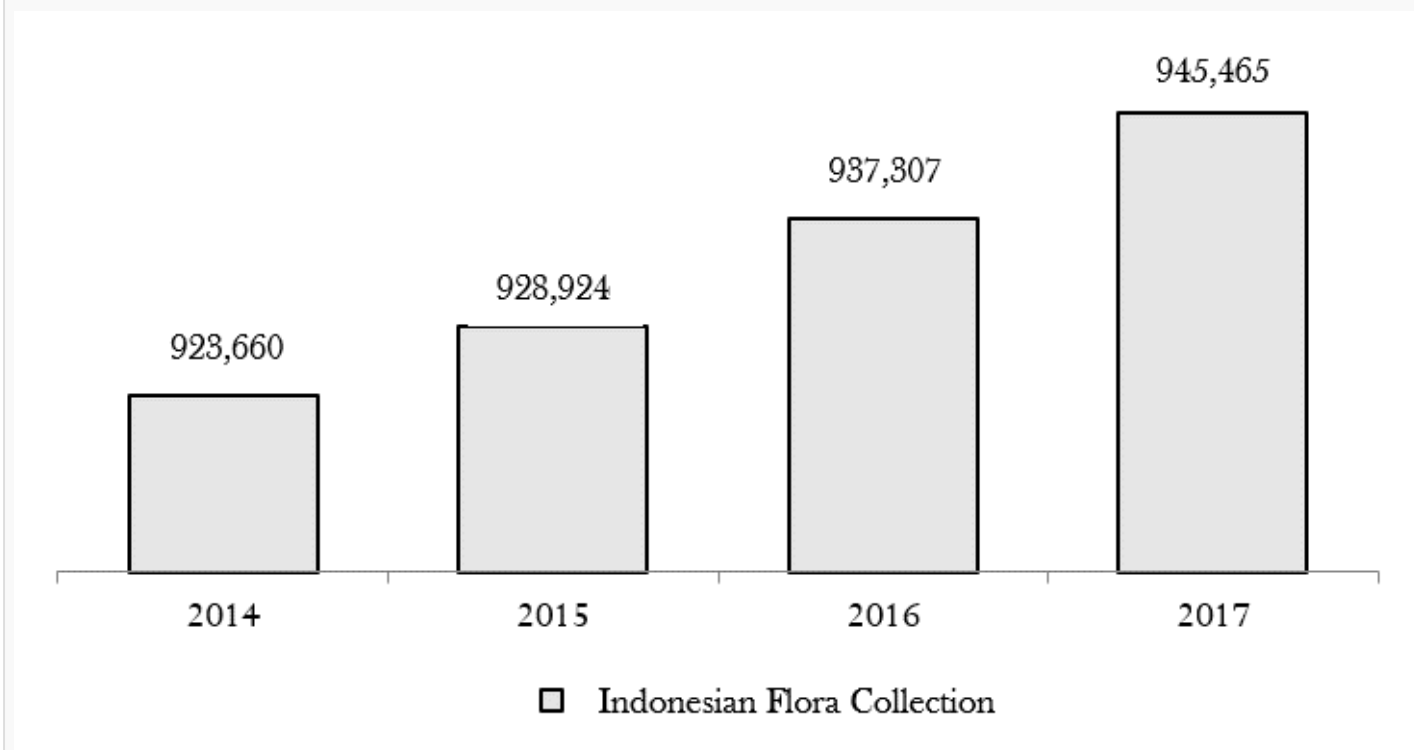


Figure 62. Addition of Indonesian flora collection number in National Flora Reference Center Herbarium Bogoriense

Collection of Indonesian fauna up to 2017 deposited in the National Fauna Reference Center- Zoologicum Bogoriense Museum has reached 2,759,462 specimens, with an average collection addition of 9,563 specimens per year (Figure 63).

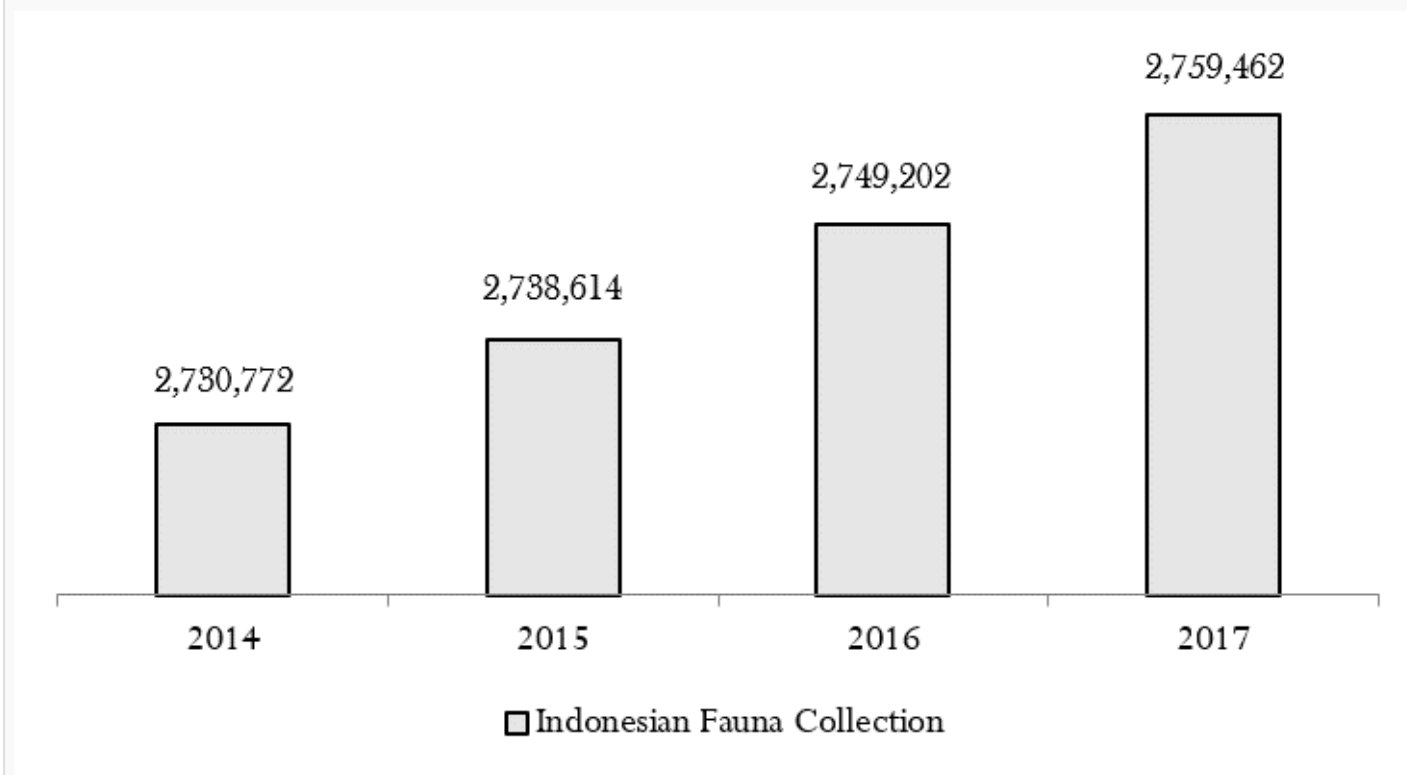


Figure 63. Addition to the number of Indonesian fauna collections in the National Fauna Reference Center

The most valuable collections from the national reference center are specimens which form the basis of the name of a species called the type specimen (holotype and its derivatives). The number of flora type specimen collection reached 17,494 and the fauna type specimen collection reached 11,182 specimens. In the fauna collection, the distribution of the highest type specimens was in the insect group, followed by Arthropods and molluscs (Table 25).

Table 25. Number of holotype collection deposited in National Fauna Reference Center

Taxa	Number of the fauna type specimen
Mammals	481
Bird	555
Amphibians	241
Reptiles	332
Fish	814
Molluscs	2,047
Nematodes	489
Arthropods (Crustacean, Acari, Arachnids, Collembola)	2,414
Insects	3,809
TOTAL	11,182

5. Number of flora, fauna, and microorganisms identified as new species

Until now, Indonesia has been consistent in exploring its biological diversity. New species identified from 1967 to 2017 are 567 new species of flora with details of 143 new species from the monocot group, 391 new species from the dicot group, 27 new species of macro fungi, and 6 new species of ferns¹⁵ (Figure 64). New species of fauna from 1967-2017 recorded is 456 species. The highest number of species was shown by insect groups, which is 83 species, followed by 82 species of fish, 72 species of crustaceans, 64 species of other arthropods (Arachnids, Acari, and Collembola), 62 species of amphibians and reptiles, 51 species of mammals, 35 species of worms (Nematodes and Polychaeta), 4 species of molluscs, and 3 species of birds.

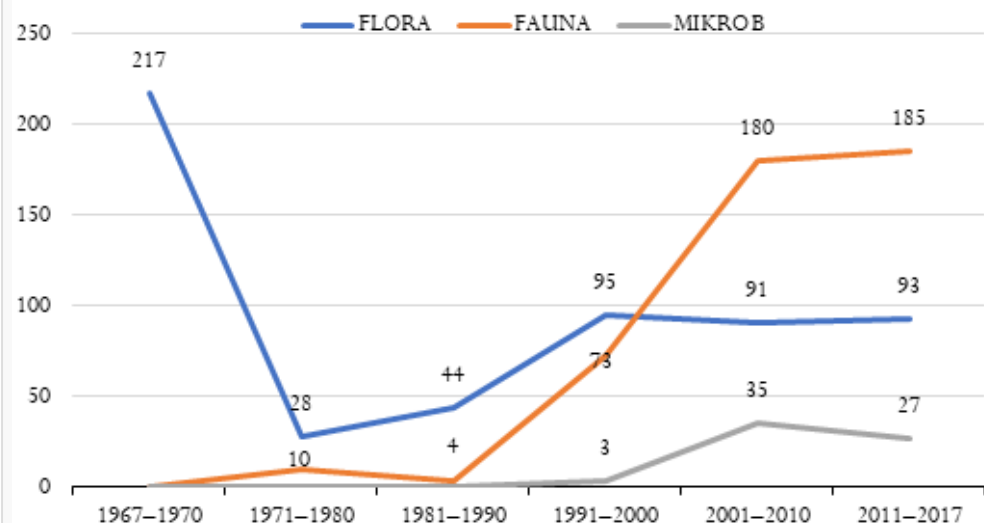


Figure 64. Number of new species identified in the six exploration periods respectively for flora, fauna, and microorganisms

Number of new microorganisms

Until 2017, 54 new species which are dominated by bacteria have been identified (Table 26).

Microorganism group	Number of new species from Indonesia 2017
Archaea	2
Fungi (mold and yeast)	20
Bacteria	32

6. Environmental Services and Ecosystem Function in Indonesia

The regulation of environmental services in Indonesia has been made to regulate the mechanism of utilization and payment. The basic regulations include: (1) Act No. 22 Year 1999 concerning Regional Governance, (2) Act No. 5 Year 1990 concerning Conservation of Natural Biological Resources and Ecosystems (KSDAHE), (3) PP No. 18 Year 2000 concerning authority Government and Province as Autonomous Region, (4) Act 41 Year 1999 concerning Forestry and Government Regulation and PP No. 6 Year 2007 regulating Forest Management and article on Management of Environmental Services, (5) Act No. 7 Year 2004 concerning water resources, (6) Act No. 34 Year 2000 on Regional Government Taxes and Retributions and (7) Act No. 23 Year 1997 concerning environmental management.

Based on the Millennium Ecosystem Assessment (MEA) definition of ecosystem services is the benefits that humans obtain from the existence of an ecosystem and become the basis for its assessment (Hein, et al. 2006). The benefits obtained can be either measurable value or immeasurable values, and have a reciprocal relationship with human activities both in terms of social and economic aspects. Some examples in Indonesia are: providers of food and medicine, protection from extreme disasters, climate and disease regulators and control, and protection from extreme disasters. The most important provider of ecosystem services is forests that provide basic benefits for life, both direct and indirect benefits. The results of the 2005 MEA study explained that two-thirds of the environmental services used by people are experiencing degradation that was faster than the recovery period. This condition can cause environmental services to gradually become scarce.

6.1. Water Management Environmental Services

Forests provide environmental services by reducing sedimentation and erosion, therefore it is important for providing water and maintaining their quality. Water is the main component of life, its use has been done commercially or directly used by residents around the water source. Some examples of Conservation Areas where water sources have been utilized by cooperating with the private sector and the Regional Government are in Gunung Ciremai National Park and Gunung Halimun Salak National Park in West Java. In Sulawesi, the community uses water and a hydroelectric power plant from the Lake Matano, and Towuti area. An example of Payment Ecosystem Services (PES) for watershed conservation was implemented by the Kuningan Regency Government and Cirebon City Government, which set a compensation mechanism of 1.75 billion/year with water yields of 43.48 million m³. This fund is used for the purposes of financing watershed conservation, especially the Paniis spring with an area of 645 ha for water conservation in the watershed area.

6.2. Utilization of Ecosystems and Biodiversity Environmental Services

Ecosystem services that are directly related to biodiversity are related to regulatory services, which will have an impact on the agricultural sector and plant conservation, including pollinators, animals as seed dispersers, and the role of microorganisms as a biological organic fertilizer material.

6.3. Pollinators Environmental Services

Ecosystem services from the aspect of agriculture involve many factors, namely land, water, biological diversity and air. Increased productivity as part of production ecosystem services can cause a reduction in regulatory services. If the regulatory and supporting services are getting worse, food production will be disrupted, for example, plant pollinators. Insects, birds, bats and other animals are pollinating agents that must be preserved and other benefits of these pollinators are allowing cross-pollination which increase the variability of the descendants of plants and crops. The types of pollinators that are known includes: *Apis spp.*, *Bombus rufipens* (Apidae), *Trigona spp.*, *Xylocopa spp.*, and bats on plants which produce fruit or seeds.

Monitoring and research are done on decreasing pollinator species and populations. This has caused a decrease in the frequency and intensity of pollination which directly results in the decline in fruit production in Indonesia (Amir et al. 2004, 2005; Kahono et al. 2012). Pollination of introduced plants of high economic value, for example in the oil palm plantation industry shows that pollination carried out by the beetle *Elaeidobius kamerunicus* has not significantly increased bunch productivity. About 35% of the fruit does not develop, which is an indicator of the palm oil not being pollinated (Kahono et al. 2012; Figure 65). Therefore, to increase palm oil production, there are needs to increase *E. kamerunicus* beetle population by maintaining a beetle breeding environment and increasing the role of local pollinators (Kahono et al. 2012;).

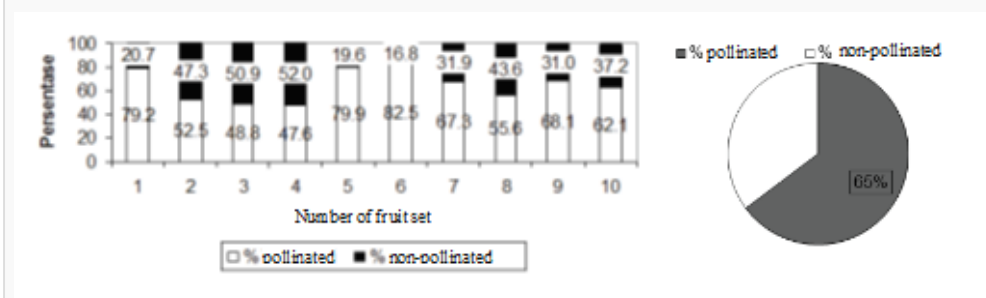


Figure 65. Percentage of fruit set in 10 oil palm fruit bunches (Left) and the proportion of pollinated and non-pollinated (Right)

Many studies have been carried out on the important role of pollinators in increasing production of agricultural crops as well as forest plants, following several studies conducted. Strawberry production depends on the pollination process, with the help of local honey bees (*Apis cerana javana* and *Trigona laeviceps*). In the smallholder strawberry farms of Oso Grande varieties in Serang village, Purbalingga Regency showed an increase in fruit production of 37% with the aid of *A. cerana* and 16.6% with the help of *T. laeviceps* (Widhiono et al., 2012). Whereas Partap (2006) found an increase in strawberry fruit production by 46% in plants pollinated assisted by *A. cerana*. Albano et al. (2009) also found an increase in the success of fertilizing strawberries by 33% in plants which pollinated were assisted by pollinating insects compared to plants that pollinated themselves. Bats are pollinators for forest plants and agricultural crops groups, evidence of the role of bats in pollinating flowers to produce fruit can be shown in mangrove areas that bloom throughout the year as a source of feed for bats. If the bat population decreases, agricultural yields around the area will decline and vice versa.

Some important ecosystems also provide important ecosystem services for humans. A simple example of utilizing ecosystems is fishing using simple fishing gear. To overcome ecosystem damage due to the utilization of destructive fishing gear, Indonesia has made regulations for its prevention.

Utilization of environmental services, seagrass ecosystems, and coral reefs is known to provide ecosystem services which become places for spawning, biota feeding and children rearing ground, protection of biota within them which are rich in species diversity (Hemminga & Duarte, 2003; Unsworth et al, 2007, Nybakken, 1992). One of the important animals is Dugong which can only eat seagrass, therefore dugong obtained a nickname of seagrass specialist (Sheppard et al, 2006). The coral reef ecosystem in Indonesia, which covers 18% of the world's coral reefs, has also big potential as a diving destination.

Other forms of environmental services that are utilized, starting from land to marine ecosystems, is shown in Table 27.

Table 27. Coastal ecosystem services from various sources

Ecosystem Services	Mangrove*	Seagrass*	Coral Reefs**
Nursery & feeding ground	✓	✓	✓
Spawning & rearing ground	✓	✓	✓
Biota shelter	✓	✓	✓
Nutrition provider	✓	✓	✓
Habitat for rare animals		✓	✓
Rich in biota species diversity	✓	✓	✓
Coastal protection	✓	✓	✓
Sediment trapping		✓	
Maintaining pH of seawater		✓	
Current reducer	✓	✓	✓
Maintain water clarity		✓	
Substrate stabilizer		✓	
Observe current flow		✓	
Block sedimentation flow	✓		
Protect from abrasion (ecological potential)	✓		
Source of fish		✓	✓
Source of crabs	✓	✓	
Source of invertebrate		✓	✓
Source of ornamental fish		✓	✓
Source of seeds	✓	✓	✓
Medicine	✓	✓	✓
Fertilizer		✓	
House roof/construction	✓	✓	
Charcoal and firewood	✓	✓	
Source of tannin	✓	✓	
Bioprospecting	✓	✓	✓
Place to put a trap		✓	✓
Boat berth	✓	✓	
Place for ship dock	✓	✓	
Ship flow	✓	✓	

Source: * Pramuji, 2017

6.4. Seed Disperser Environmental Services

Animal services in the seed dispersal process are quite large, but it is difficult to carry out its economic valuations. The process of seed dispersion is carried out by fruit-eating animals, including birds and mammals (Widjaya, 2014).

Examples of bats that are thought to help scatter seeds are lesser short-nosed fruit bat (*Cynopterus brachyotis*), Peter's fruit bat (*Cynopterus luzoniensis*), and southeastern short-nosed fruit bat (*Cynopterus nusatenggara*). In primates, for example, long-tailed macaque (*Macaca fascicularis*) and in carnivore groups, there is Asian palm civet (*Paradoxurus hermaphroditus*). The dispersal process is similar to a group of birds, namely through digestion and feces removal.

Main pressures on and drivers of change to biodiversity (direct and indirect)

Indonesia is one of the mega biodiversity countries that still faces challenges in exploring and utilizing its biodiversity potential to support sustainable community life in accordance with the objectives of the Sustainable Development Goals (SDGs), namely to improve human welfare by reducing the risk of damage to the environment.

Imbalances in human relations with the environment can damage ecosystems and ultimately have an impact on changes in biodiversity. Five (5) main pressures faced by biodiversity in Indonesia have been reported in the previous 5th National Report. These five challenges are still being faced by Indonesia. Detailed illustration of the main pressures can be seen in Figure 66.

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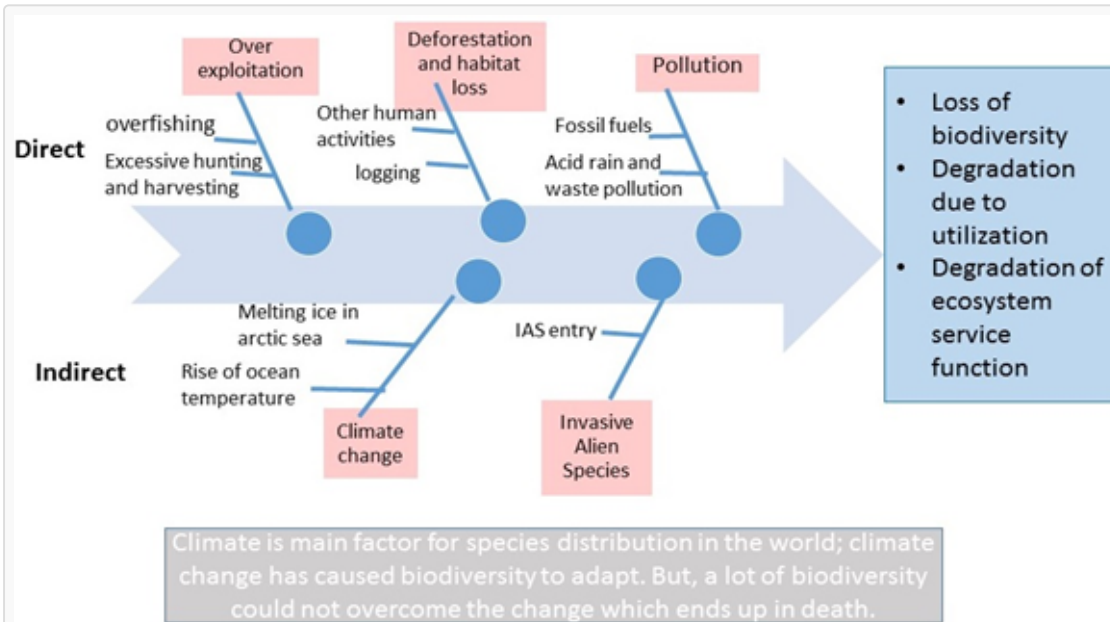


Figure 66. Direct and indirect pressure on biological diversity in Indonesia

Direct main pressure for biodiversity which has a direct influence on changes in the biodiversity structure, including:

1. Deforestation and habitat change

Deforestation is a change in the condition of land cover from forest to non-forest (including changes to plantations, settlements, industrial estates, etc.). In 2016, the area of forested land in Indonesia was 95,271.9 million ha or 50.74% of the total land area in Indonesia, which caused habitat changes.

Examples of habitat changes that affect biodiversity can be seen in bird species in West Java (Widjaja et al. 2014). West Java Regional Environmental Management Agency (BPLHD) in the areas of Gudawang-Bogor, Cibitung-Sukabumi, Salebu-Garut, Cikatomas-Tasikmalaya, Waled-Cirebon, Ujung Jaya-Sumedang, and Pangkalan-Karawang still found 126 species bird. From the data obtained, there were four types of bird recorded, namely *Aceros undulatus*, *Anthracoceros albirostris*, *Sturnus contra* and *Religiosa gracula* which had not been found in the lowlands outside the conservation area, while 77 other species were in rare condition. Thus, only 45 species of birds that can still survive outside the forest area.

Almost all endemic species of Indonesia such as *Treron oxyura*, *Loriculus pusillus*, *Sturnus melanopterus*, and *Padda oryzivora* and some endemic bird of Java islands, including *Alcedo coerulescens*, *Halcyon cyanoventris*, and *Megalaima javensis* have become rare outside conservation areas

(Widjaja et al., 2014).

According to Widiyati & Prihadi (2007), improper management of reservoirs have a negative impact on the balance biodiversity, which among others include loss of local fish species due to permanent changes in hydrology and river ecosystems, decreasing water quality, and inhibiting the flow of nutrients needed. Craig (2011) states that out of 66 cases of reservoirs in the world, 73% have a negative impact on the diversity of fish species and on the other hands, only 27% give positive impacts. The impact of reservoirs on fish communities in Indonesia has been reported by Kartamihardja (2008), that in a period of 40 years (1968-2007) after the Djuanda/Jatiluhur reservoir was inundated there was a decrease in the number of fish species from 31 species to 18 species. The types of fish that are prone to extinction due to the construction of reservoirs is due to loss of natural/migratory pathways, e.g., in eel (*Anguilla* spp.), As well as some species of the Cyprinidae family that commonly do potamodromous migration, namely migration in freshwater between upstream and downstream river (Widjaja 2014).

In addition to the causes of deforestation mentioned above, deforestation and habitat changes can also be caused by fires. The long dry season of 1997-1998 had caused major forest fires in Indonesia. Simbolon et. al. (2000, 2005) reported that in mixed dipterocarp forest, forest fires have destroyed biodiversity and affect the biological and ecological status of forests. Forest recovery processes can still occur (Figure 67) but it will be affected by changes in the environment after the fire. Isobe et al. (2009) reported that the composition of total bacteria and actinobacteria in soil communities in heavily burned, medium, and non-burned forest areas was similar only after eight and nine years of fire. These results confirm, even though almost a decade after forest fires, the impact of fires on the biodiversity of microorganisms still occurs, especially for ammonia oxidizing bacteria.



Figure 67. Changes in forest vegetation in the period of 3 years (a. 2001), 7 years (b. 2005) and 15 years (c. 2013) after fires in Bangkirai Hill, East Kalimantan. Source: LIPI Biology Research Center (Collaboration between Kagoshima University and Biology Research Center-LIPI).

In order to control forest and land fires, the Indonesian Government has issued Ministerial Regulation P.32/MenLHK/Setjen/Kum.1/3/2016 as standard norms and guidelines for planning, organizing, implementing, monitoring and evaluating forest and land fire control. The Ministry of Environment and Forestry reported that the number of NOAA-18/19 hotspots for non-conservation forest areas and land in the islands of Sumatra, Kalimantan and Sulawesi had decreased from 4,022 in 2016 to 1,809 in 2017 or decreased by around 56% (Statistics of Directorate General

Climate Change 2017).

2. Environmental pollution

Human activity can cause air, water, and soil pollution which ultimately has a negative impact on biodiversity. Examples of polluted environmental pollution have occurred and a number of efforts have been made to deal with them.

The biggest pollution according to Widjaja et al. (2014) is due to heavy metal contamination which contains real toxicity to microorganisms at high concentrations. Community monitoring and microorganism activity in Rancaekek (West Java) rice fields which are polluted by textile waste heavy metals show that the population and activity of microorganisms in the area near the source of contamination of the population is lower than in areas further from the sources of contamination. Gans et al. (2005) state that more than one million different bacterial genomes are found in natural (pure) soil, and this diversity is reduced to 99.9% as a result of heavy metal pollution.

The green revolution in the past has had a significant influence on agricultural management, which relies more on agrochemicals such as the use of inorganic fertilizers and pesticides (Widjaja et al., 2014). To overcome this negative impact, the use of biological organic fertilizer is one of the methods developed in Indonesia (Figure 68), and also the application of organic ingredients has been carried out in the planning system in the Ministry of Agriculture as an effort to improve land quality and increase productivity. By using the method of adding biological organic fertilizer, it can improve the chemical and biological properties of the soil, suppress disease, fertilize roots, and increase crop yields.



Source: Biology Research Center-LIPI

Figure 68. Biological Organic Fertilizers that have been applied in several locations in Indonesia

Marine debris in the form of large and micro-sized plastic waste has become a problem for the country with coastlines. In 2017, the Indonesian Government established a National Action Plan for handling waste in the sea with the establishment of an Alliance for Marine Plastic Solutions (AMPS). In Indonesia, microplastic pollution has been found at depths of more than 2,000m in the Sumatra region (Betts, 2008).

Marine debris in Indonesia

Marine debris groups in Indonesia can be categorized as large waste and microplastic waste. Some of the impact of microplastic on the health of marine waters including its impact on the condition of the coral. The impact on each type of coral will be different. In coral-building reefs, it can increase mucus production as a form of self-protection against microplastic entry. In addition, microplastic which enters the corals can damage the tissue, causing coral bleaching or even over-growth of the coral (Cordova and Wahyudi, 2016). For biota other than coral, the presence of microplastic can directly affect the digestive tract, hormone stability, fertility disorders, and nerve disorders in the brain (Cordova pers. Comm).

3. Overexploitation

Overexploitation greatly impacts the destruction and elimination of existing species and biodiversity. Excessive conversion of forest land to another land usage will cause ecological and ecosystem damage, thus affecting the carrying capacity of the environment, a disastrous consequence to the sustainability of biodiversity.

Excessive exploitation in the sea (overfishing) by using cantrang can cause damage to the bottom of the water resulting in a significant impact on the underwater ecosystem. Based on the results of the study in Brondong - Lamongan (IPB, 2009), only 51% of the cantrang catches the target fish, while 49% were non-target (BSSN, 2017). In order to deal with excessive use of natural resources, the Indonesian government, among others, has issued Minister of Marine Affairs and Fisheries of the Republic of Indonesia Regulation No. 2/ Permen-KP/2015, concerning Prohibition on the use of trawls and Seine Nets in the fisheries management area of the Republic of Indonesia (Figure 69), Presidential Instruction (Inpres) Number 8 Year 2015 concerning Delays in Granting New Permits and Improvement of Primary and Peatland Forest Management, and Presidential Instruction No. 8 Year 2018 concerning Delays and evaluation of licenses for oil palm plantations and increasing productivity of oil palm plantations.

Cantrang is Not Environmentally-Friendly

Cantrang has now been modified with the use of nets measuring up to tens to hundreds of kilometers with sinkers, and its machine-pulled operation has resulted in seafloor damage, as it sweeps corals and other marine biota

Small groups of living corals on the seafloor will be swept away. This will lead to the destruction of marine biota spawning location as well as marine habitat.



Vessels of 30 GTs and above are equipped with cold storage; they operate *cantrang* with a net rope length of 6,000 meter. From simple calculations, a net with a 6,000 meter circumference will sweep a total seafloor area of 289 Ha.



As a result, young marine biota may not mate and reproduce new individuals. This condition will deplete fish resource stock, thereby reducing catch.

Figure 69. Socialization of the prohibition on the use of cantrang in the world of fisheries

Source: BSSN, 2017

4. The entry of Invasive Alien Species

Invasive plants that have been widely known in Indonesia include common water hyacinth (*Eichhornia crassipes*), giant salvinia (*Salvinia molesta*), *Acacia nilotica* and passion fruit (*Passiflora ligularis*), and invasive plants of local species such as mentangan (*Merremia peltata*) and Langkap (*Arenga obtusifolia*). Knowledge of the dangers of invasive alien plants is growing rapidly which could show how big the impact of invasive plant species on production systems, the environment, health, and even public welfare in general. For example, *Liriomyza sativae*, *L. trifolii*, *L. huidobrensis*, and *L. bryoniae* (Tokumaru & Abe 2006), leaf pests causing damage to vegetable and nut crops. The other type is apple snail (*Pomacea insularum*) in Malaysia which has been very detrimental because it damaged dozens of hectares of rice fields. Monitoring of this species must be done so that it does not create the same problem as what happened with golden apple snails (*P. canalicollata*).

The growth of invasive plants is proven to damage the ecosystem. For example, the presence of invasive plants, such as *Acacia nilotica* in Baluran National Park. The plant stands in the way of grass and decreases forage production for herbivores and stimulates broadleaf bush vegetation. This plant disrupts and causes a deterioration in the existence of native Indonesian plants and animals such as bulls and wild water buffalo in Baluran National Park (Figure 70).

Other invasive species is *Salvinia molesta* which is one of the 100 dangerous Invasive Alien Species in the world which are found in many freshwater bodies in Indonesia, especially in the Freshwater Lake. The invasion of *Salvinia molesta* can change wetland ecosystems and cause loss of wetland habitat. *Salvinia molesta* prefers tropical, sub-tropical or warm temperate regions in the world and grows best in calm or slow-moving water bodies including slow gutters, ponds, lakes, rivers and canals. The invasion of *Salvinia* also poses a serious threat to socio-economic activities that depend on open, flowing and/or high-quality water bodies, including hydroelectric power, fishermen transportation, and ships.



Figure 70. Several types of invasive plants. A. *Acacia nilotica*, B. *Salvinia molesta* (Photo by Deden Girmansyah)

The impact of the presence of invasive species on decreasing biodiversity occurs in conservation areas such as Protection Forests, National Parks, etc. Some invasive plants have invaded several conservation areas and causing problems that need to be addressed immediately. Inventory of invasive plant species in Indonesia has been and continues to be carried out, especially in the National Park area. Inventory activities of invasive species in several National Park areas have been carried out by LIPI since 2009-2017 (Table 28).

Table 28. Number of invasive plant species from 2009-2017 in several National Parks

No	Location	Year	Number of IAS
1	Tanjung Puting NP	2014	30 species
2	Kerinci Seblat NP	2016	18 species
3	Gede Pangrango NP	2009-2012	8 species
4	Halimun Salak NP	2012	4 species
5	Gunung Merapi NP	2017	28 species
6	Bali Barat NP	2015	9 species

Source: LIPI (2017)

Control and eradication of IAS is also carried out on various invasive plant species such as: *Acacia nilotica* in Baluran NP), giant salvinia (*Salvinia molesta*) in Bromo Tengger NP, langkap (*Arenga obtusifolia*) in Ujung Kulon NP and Kirinyuh (*Austroeupatorium inulifolium*) in Danau Kelimutu NP. The effort to control *Acacia nilotica* has been and continues to be carried out in Baluran NP in a physical way, namely by cutting and digging the roots of trees, because the presence of *Acacia nilotica* has reduced the area of the savanna where the bull lives if left alone. Some control activities are carried out in the Baluran NP. (Figure 71).



Figure 71. Control activities of *Acacia nilotica* by Baluran National Park staff (<https://anzdoc.com/queue/pedoman-pengendalian-dan-restorasi-savanna-terinvasi-acacia-.html>)

Works on eradicating invasive plants in Bromo Tengger NP for *Verbena brassiliensis* and *Salvinia molesta*, by removing *Verbena brassiliensis* plant stems and burying them, while for *Salvinia molesta* is carried out by lifting all *Salvinia* plants in collaboration with the community and various groups that are concerned about environmental sustainability (Figures 72 and 73).



Figure 72. Staffs of the Bromo Tengger Semeru National Park assisted by nature lovers cleaning up IAS in the form of salvinia from Lake Ranupani (www.bromotenggersemeru.org)



Figure 73. Efforts to control *Verbena brassiliensis* by Bromo Tengger National Park staffs (www.bromotenggersemeru.org)

Langkap (*Arenga obtusifolia*) is a native plant of Indonesia and now grows rapidly and dominates the Ujung Kulon National Park which is a habitat for the Javan Rhino. The growth of langkap is very massive and narrows the habitat of the Javan rhinoceros. Langkap control is carried out by cutting trees and pulling out tree saplings. Even though it has not been a complete success, but the control effort has shown results. The following is a video link of one of the efforts to control fishing in Ujung Kulon National Park. <https://youtu.be/43jndoDshQ4>.

Apart from control and eradication activities, from the institutional side, the government has issued regulations in the form of Ministry of Environment and Forestry Regulation, namely Minister of Environment and Forestry Regulation No. P.94/MenLHK/ Setjen/KUM.1/2016 concerning Invasive Species. Referring to this regulation, there were about 187 invasive species that have entered Indonesia which consist of 122 plant species, 48 fish species, 7 mammal species, 4 molluscs species, 2 insect species, 2 reptile species, 1 amphibian and 1 fungi. Meanwhile, invasive species that have not yet entered Indonesia and need to be watched out consist of 132 species: 17 species of plants, 1 type of Algae, 101 species of fish, 3 species of insects, and 8 species of fungi. This regulation can be downloaded through the following link <http://ditjenpp.kemenkumham.go.id/arsip/bn/2016/bn1959-2016.pdf>.

IAS Fauna

IAS from the animal group that also disturbs the ecosystem is golden apple snails (*Pomacea canaliculata*) which become pests for rice farm which entered Indonesia around 1984 and spread widely in various types of water bodies such as swamps, lakes, rice fields, and ponds (Figure 74). The results of monitoring due to the spread of invasive snails *Pomacea canaliculata* in Rawa Pening conducted by Marwoto et al. (Person. Comm) showed that local snails *Pila ampullacea* and *P. virescens*, or commonly called gondang or kool snails, that had been found in Rawapening were extinct and only one survivor species left, *Pila scutata*.



Figure 74. Local snail eggs in Rawapening

A way to remove local snail eggs in Rawapening is through the removal of common water hyacinth using heavy equipment so that the number of hyacinth removed is larger and faster. These activities also indirectly reduce the number/kill the eggs of pomacea pest snails (Marwoto, Heryanto, Alfiah, 2018)



Figure 75. Two types of heavy equipment used to lift common water hyacinth in Rawapening

Another threat was the discovery of this invasive snail *Pomacea canaliculata* in ancient lake Lake Towuti and Matano in Malili, South Sulawesi which threatened the endemic snails in these lakes (Figure 76). The presence of invasive snail *P. canaliculata* on the border of Halimun Salak National Park which is densely populated with residential areas and in the Lake Gunting of Bogor Botanical Gardens needs to be observed because it threatens the existence of the local snail *Pila ampullacea* which until now is still in a good population condition only in the Bogor Botanical Gardens.



Figure 76. Shell variation of *Pomacea canaliculata*. Source: Marwoto, Isnainingsih, Joshi (2018)

The serious threat of IAS for the past 30 years is the freshwater snail *Pomacea canaliculata* which becomes a pest for rice seedlings. The status of the distribution of these snails in Indonesia has been mapped by Marwoto & Isnainingsih (2011) and Isnainingsih & Marwoto (2011) (Figure 77).

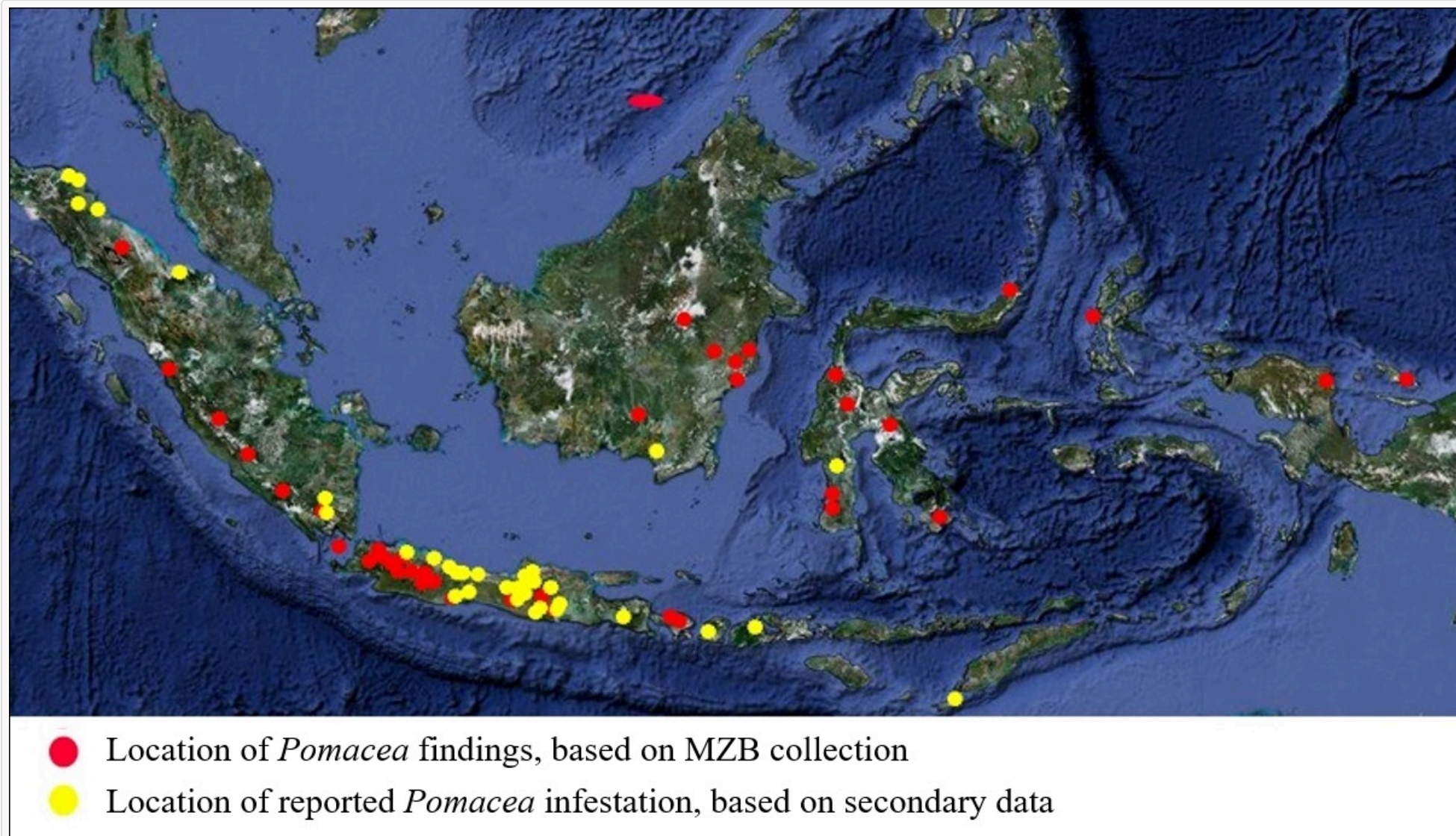


Figure 77. Distribution of *Pomacea canaliculata* in Indonesia based on MZB collection (●); based on secondary data (●) (Photo by: N. R. Isnaningsih & R. M. Marwoto). Source: Marwoto, Isnaningsih, Joshi (2018)

Terrestrial snail and slug which have the potential to become pests on agriculture, especially in Java, the vegetables being infested are cabbage, carrots, long beans, green beans, lettuce, and various types of orchids and cut flowers like dahlias, chrysanthemums, anthurium and roses (Mujiono; 2010; Figure 78). These types of land snails are: *Radybaena similaris*, *Subulina octona*, *Opeas gracile*, *Parmarion pupillaris* snail, *Deroceras laevae*, *Filicaulis bleekeri* which has the potential to infest horticultural plants such as vegetables, fruits and ornamental plants (Figure 79).



Figure 78. Left: *Bradybaena similaris* attacks the Cucumber plant (*Cucumis sativus*). Top right: Shells of *Subulina octona* (left) and *Opeas gracile* (right) with enlargement in the mouth part of the shell. Lower right: the leaves of the Orchid plant (*Vanda* sp.) which are perforated by the attack of 2 types of snails.



Figure 79. Left: *Parmarion pupillaris* attacking cauliflower plants (*Brassica oleraea botrytis* subvar. Cauliflora). Middle: *Deroceras laeve* attacking cabbage plant (*Brassica oleracea*). Right: *Filicaulis bleekeri* hiding in a soil basin near the white mustard root (*Brassica juncea*).

In 1993 there were 17 species of fish introduced into Indonesian freshwaters including *Carassius auratus* and *Cyprinus carpio*. After 20 years, the number of fish species introduced has increased by about 4 times. In 2014, the Ministry of Marine Affairs and Fisheries determined that 87 species of fish from 28 families were invasive. Lohan fish are gobiid fish predators (*Glossogobius matanensis*) endemic to Matano Lake, and aligator gar (*Atractosteus spatula*) found in the Jatiluhur dam. Janitor fish (*Pterygoplichthys spp*) have expanded on the Ciliwung River in Jakarta and Cisadane in Tangerang. There are only 2 types of invasive shrimp, namely *Macrobrachium lanchesteri* and lobster *Cherax quadricarinatus*. These two types of freshwater crustaceans have eliminated the Indonesian freshwater shrimp population *Macrobrachium sintangense* from Lido, Lake Bogor Regency. *M. sintangense* shrimp has also dominated, even its presence has become 100% in several small lakes which are included in the Ciliwung and Cisadane watersheds. With the issuance of government regulations on how to control the IAS, the main thing to do is the efforts to eradicate it.

5. Climate Change

Climate change is a long-term change in the distribution of statistical weather patterns over a period of time from decades to millions of years. This term can also mean changes in the average weather conditions or changes in the distribution of average weather events. Climate change can be regional or can occur in all regions of the Earth (global climate change). Global climate change is often associated with irregular climate dynamics from a hundred-year natural pattern. The case of La Nina and El Nino reflects the occurrence of climate change or shifts.

The impact of climate change causes many environmental problems, such as rising global temperatures, melting polar ice caps, rising sea levels,

unpredictable weather changes, the spread of diseases, agriculture, increasing acidity of seawater, mass extinctions etc. These environmental problems greatly affect biodiversity, both flora and fauna and ecosystems. The impact of climate change on biodiversity can be directly or indirectly. Some direct effects of climate change such as the influence on species distribution, phenological changes, changes in the interaction between species and species extinction rates.

Efforts made

In dealing with climate change, control efforts have been made through program policies, implementation of climate change controls, and implementation in the community. Some program policies that support climate change control are: Signing of a Letter of Intent or Lol on 26 May 2010 between the Indonesian government and Norway in order to reduce greenhouse gases by 41% through a REDD + scheme. To ensure the implementation of these activities then the REDD + task force was formed with the issuance of Presidential Decree No.19/2010 and South Kalimantan chosen as the pilot area for the implementation of this activity. As a pilot province, Central Kalimantan will be a laboratory for testing applications from five functional areas. For implementation at the provincial and central levels, the REDD + Task Force will establish institutions to monitor, coordinate and implement REDD + activities; and institutions to monitor, report and verify. In line with that, funding instruments will be established to ensure the availability of funds.

In addition, the government also issued presidential instruction No. 10/2011 on May 20, 2011, which binds Indonesia to postpone the issuance of new permits for two years for the use of primary natural forests and peatlands. This Presidential Decree will reduce the rate of greenhouse gas emissions due to the land clearing of primary forests and peat forests. The delay provides an opportunity to improve forest governance by creating a pause to improve forest governance by reviewing and improving the regulatory framework for land use permits and creating a database system with in-depth information on critical land so as to strengthen spatial planning, clearly establishing land for development, and support companies that move to critical land.

Government Regulation No. 37 Year 2012 concerning watershed management. Management of integrated watersheds is carried out by revitalizing riverbanks, so that riverbank functions can be restored. Planting suitable tree species will help restore the function of the riverbanks. One of the revitalization activities has been carried out by DKI province by revitalizing several watersheds that enter Jakarta. In addition, the revitalization of the Citarum River is also part of the watershed management activities (Figure 80).



Figure 80. Revitalization of Tondano watershed area (<https://foto.jpnn.com/>) and Citarum watershed area (<http://jabarekspres.com/2018/>)

Ministry of Environment and Forestry Regulation No. 33/2016 concerning Guidelines for Arranging Climate Change Adaptation Action.

This regulation aims to provide guidance for the government and regional governments in developing climate change adaptation actions and integrating them into development plans for a specific region and/or sector. One of the efforts of the Ministry of Environment and Forestry (KLHK), is to encourage active participation of the community and related parties in climate change adaptation and mitigation, namely through the Climate Village Program (ProKlim) which includes adaptation and mitigation activities <http://202.124.205.40/proklam/files/Activities-ProKlim.pdf>.

One example ProKlim activities that have been carried out is the development of climate village (Figure 81).



Figure 81. Hamlet III of Sumampir Village as a Climate Village, Purbalingga (<https://dlh.purbalinggakab.go.id/>)

Other activities related to climate change adaptation and mitigation are the resilience of ecosystems and landscapes including:

a. Ecosystem conservation and restoration

In situ conservation has been carried out by establishing various protected areas such as National Parks, Wildlife Reserves, etc. Meanwhile, existing conservation is carried out by building many Botanical Gardens throughout Indonesia under the coordination of the Bogor Plant Conservation Center. Restoration efforts were also carried out by the Bogor Plant Conservation Center.

b. Social forestry

It is a program initiated by the Ministry of Environment and Forestry (KLHK) with the aim of economic equality. Access to the management of forest areas is made in the village forest scheme (HD), community forestry (HKm), community plantations (HTR/IPHPs), customary/adat forests (HA), and forestry partnerships.

c. Protection of coastal areas

Coastal protection is carried out by planting various mangrove forests and establishing several coastal areas as protected areas.

d. Management of integrated watersheds

Management of integrated watersheds is carried out by revitalizing riverbanks, so that riverbank functions can be restored. Planting suitable tree species will help restore the function of the riverbanks. One of the revitalization activities has been carried out by DKI province by revitalizing

several watersheds entering Jakarta.

Answer from 5th National Report: The main factors affecting biodiversity loss and species extinction in Indonesia are habitat degradation and fragmentation, landscape changes, overexploitation, pollution, climate change, alien species, forest and land fires, and the economic and political crises occurring in the country.

Lowland forest, which is the most diverse area for biodiversity, is the most threatened forest due to the conversion of land use, moving farms, irreversible forest management, development of infrastructure, mining, fires and various illegal activities. Moreover, land clearance through the conversion of natural forest to oil palm plantation is a contributing factor to the damage in the forest area. In 2003, oil palm plantation constituted 5.25 million hectares and increased to 5.59 million hectares by 2005. It is predicted that the expansion of oil palm plantation will increase to 13.8 million hectares by 2020. The conversion of natural forest into oil palm plantation is a serious threat to biodiversity conservation because the conversion is often conducted in tropical lowland rainforest which is categorized as the type of ecosystem with the highest biodiversity.

Major disruption to the mangrove forest is caused by conversion into settlements, roads, ports and other infrastructure development. Illegal logging is also a factor that threatens the preservation of the mangrove forest. The main cause of damage and decreased quality of coral reefs is suspected to come primarily from inappropriate fishing methods, coral reef mining and sedimentation. Destructive fishing practices, such as the use of dynamite, the use of toxic cyanide, muro-ami fishing techniques and destructive fishing nets cause damage to coral reefs. Fishing boats, water sports and tourism activities also contribute to coral reef damage.

Implementation of the NBSAP

In 2013, the Government of Indonesia has renewed IBSAP for the period 2015-2020 and published the Indonesian Current Biodiversity Presentation document as a basis in preparing IBSAP improvements.

In 1993, the National Development Planning Agency produced the Biodiversity Action Plan for Indonesia (BAPI), which was then renewed in 2003 into "Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2003-2020. Currently, the action plan has been updated to become IBSAP 2015-2020 in accommodating newer issues in line with global and national dynamics, such as Biodiversity Action Plan 2020, Aichi Targets, economic contribution of biodiversity, and climate change. Other important issues finalized in the IBSAP 2015-2020 are: (1) Updates of current biodiversity data status; (2) Finalization of policy formulations and action plans, in the efforts to mainstream biodiversity management within the development planning system and enables an easier implementation, especially through decentralization and regional autonomy mechanisms; (3) Incorporating new elements, such as economic utilization of biodiversity for community welfare; and (4) Aligning to global agreements, for example to fulfill the targeted result of 10th COP CBD in Nagoya.

The purpose of the preparation of the IBSAP 2015-2020 document is to provide a national reference in the management and utilization of Indonesia's natural resources in accordance with applicable national legislative regulations. Substantially, the IBSAP 2015-2020 includes 8

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chapters which contain: (1) Introduction, which explains the background, objectives and expected outputs; (2) IBSAP Preparation Process, which starts from evaluating the implementation of the IBSAP 2003-2020, as well as approaches and processes in the preparation of the IBSAP 2015-2020; (3) Current Indonesian Biodiversity, which explains the current status of biodiversity, be it on ecosystems, species and genetics, with reviews of endemic flora-fauna with various challenges; (4) Utilization and Economic Contribution of Biodiversity, which outlines important values, economic contributions, and the role of local wisdom in the utilization of biodiversity complemented by the economic prospects of biodiversity and relevant challenges; (5) Biodiversity Management, which discusses the maintenance and preservation, protection and breeding, the relation of health and climate change, management of data and information, as well as various challenges in managing biodiversity; (6) Institutional and Biodiversity Management Resources, which contains regulations, management institutions - including Clearing Houses, human resources and funding, as well as various challenges; (7) Management Policies, Strategies and Action Plans on Biodiversity, which contain vision, mission, policies, strategies, national targets, as well as action plans for management of health, which are complemented by future policy directions for biodiversity management post-2020; and (8) Support for the implementation of IBSAP 2015-2020, which discusses mainstreaming, communication, education and public awareness, as well as monitoring and evaluation mechanisms. This document is also complemented by various lessons learned and best practices in the management of existing biodiversity.

Overall actions taken to contribute to the implementation of the Strategic Plan for Biodiversity 2011-2020

Based on the IBSAP formulated for the 2015-2020 period as an update for IBSAP 2003-2020, there is an action plan consisting of 4 themes to support the management mission and policy in terms of research, preservation and utilization, as well as improving the management capacity of 2015-2020; those are:

1. Action plan for research, data management, and documentation of biodiversity as well as ownership management that prioritizes the interests of the Indonesian nation and state (For groups of related activities: Table 7.1, p. 245, IBSAP 2015-202016).
2. Action plan for developing biodiversity benefits to support economic growth, national competitiveness and community welfare (For groups of related activities: Table 7.2, p. 246, IBSAP 2015-202016).
3. Biodiversity maintenance and conservation action plan to maintain its existence for Indonesian people and support the development of optimal benefits for the nation and state of Indonesia (For groups of related activities: Table 7.3, p. 247, IBSAP 2015-202016).
4. Action plan to increase the capacity of biodiversity management in a participatory and integrated manner (For groups of related activities: Table 7.4, p. 248, IBSAP 2015-2020).

Support mechanisms for national implementation (legislation, funding, capacity-building, coordination, mainstreaming, etc.)

Mainstreaming is one of the important elements in the National Development Plan. The principle of mainstreaming is one of the keys

to implementing development is reflected in the 2015-2019 National Development Plan (RPJMN) and the Government Work Plan (RKP) annually Mainstreaming in the National Development Plan between sectors, between the central government and regional governments, as well as other parties outside the government.

Mainstreaming natural resources management is defined as a strategy to integrate policy, programs, and activities into the planning, budgeting, implementation, monitoring, and evaluation by involving various relevant parties in order to ensure the implementation of the management of biodiversity. The mechanism for mainstreaming biodiversity management must support the 5 objectives of implementing the national development planning system, namely for:

1. Supporting coordination between development actors;
2. Ensuring integration, synchronization, and synergy between regions, between spaces, between times, and between government functions, as well as between central and regional governments;
3. Ensuring the linkages and consistency between planning, budgeting, implementing, and monitoring;
4. Optimizing community participation; and
5. Ensuring the achievement of efficient, effective, equitable and sustainable use of resources.

In general, several major ministries and government agencies (K/L) (Ministry of Environment and Forestry [KLHK], Ministry of Marine Affairs and Fisheries [KKP], Ministry of Agriculture, and Indonesian Institute of Sciences [LIPI] are the parties who play the biggest role in cross-cutting issues related to disaster management and climate change adaptation and mitigation. While the issue of poverty reduction, trade, and international cooperation involve other K/L and parties, such as the Ministry of Home Affairs, Ministry of Trade, Ministry of Industry, Ministry of Foreign Affairs, Ministry of Finance, research institutions, and industry sector.

Operationally, the management of biodiversity in question is management in the form of an action plan contained in the 2015-2020 IBSAP document. Where the 2015-2020 IBSAP document is an update to the IBSAP 2003-2020 document. Therefore, the mainstreaming of intended biodiversity management is also the mainstreaming of 2015-2020 IBSAP in the national development plan.

The 2015-2020 IBSAP programs and activities have been aligned with the programs and activities of government ministries or institutions in the 2015-2020 National Medium-Term Development Plan and the annual Government Work Plan. In addition, performance indicators and funding requirements are also prepared, including regulations that need to be prepared or refined so that the implementation of the biodiversity policy and action plan will run smoothly.

In this case, the Ministry of National Development Planning/Bappenas, the Ministry of Finance, the Ministry of Home Affairs; and the Ministry of Environment and Forestry as the national focal point in the management of biodiversity plays a role in mainstreaming the policy of biodiversity at the regional level especially in directing the substance and implementation of the management of biodiversity at the regional level (provinces, districts, and/or cities).

Mechanisms for monitoring and reviewing implementation

The Indonesian Biodiversity Strategy and Action Plan (IBSAP) was prepared for the 2015-2020 period as an update for the IBSAP 2003-2020. In the 2003-2020 IBSAP update process, one of the eight main problems was the absence of monitoring and evaluation institutions. The National Monitoring Target is carried out following the framework and mechanism of monitoring, evaluation and reporting (MEP) listed in the 2015-2020 IBSAP. Monitoring is coordinated by the CBD National Focal Point (NFP) supported by four ministries that are strongly relevant to Indonesia's biodiversity affairs, namely: Ministry of Environment and Forestry (KLHK), Ministry of Marine Affairs and Fisheries (KKP), Ministry of Agriculture (Mentan), and Indonesian Institute of Science (LIPI). NFP CBD is also assisted by a task force that can consist of representatives from government institutions, non-government institutions, universities, and/or practitioner.

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The IBSAP monitoring mechanism is also supported by the Government of Indonesia's monitoring system based on Presidential Regulation No. 29 Year 2014 concerning Government Agency Performance Accountability Systems (SAKIP). This system does not specifically monitor the achievement of national targets in IBSAP, but the data and information reported can be a picture of the achievements of each National Target. The final output instrument from SAKIP for monitoring National Targets includes reporting documents from government institutions that are commonly called Government Performance Reports (LKJ) and statistical reports of ministries or government agencies. A more complete explanation of MEP can be seen in details in Segment 8.3, p. 261 from the 2015-2020 IBSAP book

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