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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

Philippines

National Targets

TARGET 1: By 2028, the conservation status of nationally and globally threatened species in the country from 2016 levels is maintained or improved.

Rationale for the National Target

The Philippines is identified as one of the world's 17 most biologically rich countries. Its terrestrial and marine habitats are characterized by high endemism – nearly half of all its flora and fauna are unique to the 7,641 islands. However, it is also one of the hotspots for biodiversity loss, and ranks among the top ten countries with the largest number of species threatened with extinction (CI, 2013; DENR, 2015). Among the threats to biodiversity are habitat loss and degradation, overexploitation for trade or leisure, pollution, climate change and introduction of invasive alien species. On the other hand, the conservation and protection of threatened species delivers multiple benefits. Many wildlife species serve as indicators of ecosystem health, provide sources of food, pharmaceuticals and livelihood, and represent the country's cultural heritage. Thus, improving and maintaining the conservation status of terrestrial and aquatic flora and fauna should be regarded as a step towards preventing possible extinction and sustaining the ecosystem services that they provide.

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Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

- 5. Loss of habitats
- 11. Protected areas
- 12. Preventing extinctions
- 13. Agricultural biodiversity
- 14. Essential ecosystem services

Relevant documents and information

From 2013 to 2014, the Department of Environment and Natural Resources (DENR) through the Biodiversity Management Bureau (BMB) as the National Technical Focal Point for the Convention on Biological Diversity, conducted a multi-stakeholder process of formulating the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 through national and regional consultation-workshops. More than 800 individuals participated, representing nearly 200 organizations from national government agencies (NGAs), local government units (LGUs), academe and research, civil society organizations (CSOs), and the private sector. The PBSAP is the country's roadmap to conserve its biodiversity and achieve its vision - "By 2028, biodiversity is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all." It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 1. The interventions are meant to deliver key results to achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2015-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see attached PDP

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2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of attached PBSAP 2015-2028 Abridged Version).

Other relevant website address or attached documents

[BMB Website](#)
[NEDA Website](#)
[PBSAP 2015-2028_Abridged Version.pdf](#)

TARGET 2: By 2028, there will be no net loss in natural forest cover.

Rationale for the National Target

Forests are important ecosystems that serve as habitats for many terrestrial species and provide vital resources for our social, environmental and economic well-being. The forestry sector also directly and indirectly employs many Filipinos. However, the socio-economic contribution from forest resources has decreased due to massive deforestation in the past two decades (5NR, 2014). In the past five years alone, its contribution decreased from an average of 0.07% from 2003-2008 to an average of 0.04% at current prices from 2009-2013 (NSCB, 2013).

Perhaps, more importantly, forests sequester carbon and serve as a natural defense and protection against disasters brought about by landslides and storm surges. It is estimated that the Philippines has 664 million metric tons of carbon stocks in living forest biomass and that, in 2011, the country's forests sequestered 1.3 percent of the Philippines' greenhouse gas emissions (Global Forest Watch, n.d.).

Tracking changes in forest cover (from 2003 to 2010 to 2015) provides vital information for improved and more holistic management of forests across all scales of governance. Such knowledge can help spur action, cooperation and collaboration at the national and sub-national levels, as well as at the regional and global levels. Information on stock changes in forest ecosystem services could inform policy and program direction and prioritization, promote creation of new sources of conservation and management funds through payments for ecosystem services, and provide opportunities for private sector investment to complement public sector management.

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Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

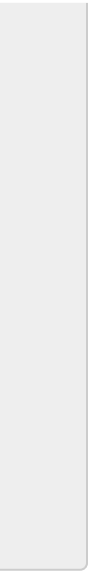
- 5. Loss of habitats
- 11. Protected areas
- 12. Preventing extinctions
- 13. Agricultural biodiversity
- 14. Essential ecosystem services

Relevant documents and information

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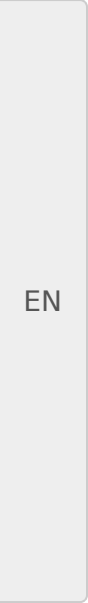
controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see PDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged Version).



TARGET 3: By 2028, there will be no net loss in presence and area distribution of live coral cover, mangroves, and seagrasses.

Rationale for the National Target

Fish is the second most important staple food of Filipinos. Coral reefs, seagrass meadows and mangroves help supply tons of edible and economically important fish every year. They provide temporary habitats for many aquatic animals and provide hatching sites and nursery grounds for many marine fishes. Potential threats to these resources include coastal developments that lead to increased sedimentation and nutrient inputs. This can lead to degradation and loss of habitats, which can have negative impacts on fisheries, which may in turn threaten food security. Loss of these habitats also reduces the natural coastal defense service they provide, and potential tourism revenues from diving operations. Conservation and protection of the remaining coral reefs, seagrass meadows and mangroves forests needs to be scaled up to address impending negative impacts such as extinction of associate species, reduced fishing production, and other activities and functions associated with the use of these resources.



Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

- 5. Loss of habitats
- 11. Protected areas
- 12. Preventing extinctions
- 13. Agricultural biodiversity
- 14. Essential ecosystem services

Relevant documents and information

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TARGET 4: By 2028, over 50% of genetic diversity of cultivated plants and farmed and domesticated animals and wild relatives will be conserved or maintained.

Rationale for the National Target

The PBSAP 2015-2028 identified agrobiodiversity as a new thematic focus and recognized the importance of genetic diversity in animals and plants.

The genetic diversity found in domestic animal breeds allows farmers to select stocks in response to changes in the environment, threats of disease, market conditions, and societal needs, all of which are largely unpredictable. Indigenous livestock breeds often possess valuable traits such as disease resistance, high fertility, good maternal qualities, longevity, and adaptation to harsh conditions and poor-quality feed, all desirable qualities for low-input, sustainable agriculture.

In the Philippines, over 3,000 plants are utilized for food, feed, shelter, fiber, fuel, medicine, ornamentals, and ornaments. Plant genetic resources are a vital element of our nation's cultural heritage. A vast number of plants are of significant cultural value to local communities, as a symbol in religion, folklore, rituals, and the arts.

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Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

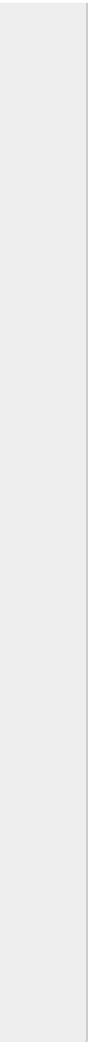
- 5. Loss of habitats
- 11. Protected areas
- 12. Preventing extinctions
- 13. Agricultural biodiversity
- 14. Essential ecosystem services

Relevant documents and information

From 2013 to 2014, the Department of Environment and Natural Resources (DENR) through the Biodiversity Management Bureau (BMB) as the National Technical Focal Point for the Convention on Biological Diversity, conducted a multi-stakeholder process of formulating the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 through national and regional consultation-workshops. More than 800 individuals participated, representing nearly 200 organizations from national government agencies (NGAs), local government units (LGUs), academe and research,

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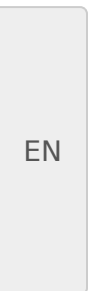
civil society organizations (CSOs), and the private sector. The PBSAP is the country's roadmap to conserve its biodiversity and achieve its vision - "By 2028, biodiversity is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all." It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 4. The interventions are meant to deliver key results to achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2025-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see PDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of the PBSAP 2015-2028 Abridged Version).



TARGET 5: By 2028, the population of migratory bird species identified in selected inland and coastal wetlands along the East Asian–Australasian Flyway (EAAF) will be maintained.

Rationale for the National Target

The Philippines is part of East Asian-Australasian Flyway and is an important staging and wintering area for migratory birds in search of food and temporary habitats. Many wetland areas in the country are temporary homes to these migratory species, and have been declared as either protected areas, critical habitats or wetlands of international importance that need protection and conservation.



Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

- 5. Loss of habitats
- 11. Protected areas
- 12. Preventing extinctions
- 13. Agricultural biodiversity
- 14. Essential ecosystem services

Relevant documents and information

From 2013 to 2014, the Department of Environment and Natural Resources (DENR) through the Biodiversity Management Bureau (BMB) as the National Technical Focal Point for the Convention on Biological Diversity, conducted a multi-stakeholder process of formulating the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 through national and regional consultation-workshops. More than 800 individuals participated, representing nearly 200 organizations from national government agencies (NGAs), local government units (LGUs), academe and research, civil society organizations (CSOs), and the private sector. The PBSAP is the country's roadmap to conserve its biodiversity and achieve its vision - "By 2028, biodiversity is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all." It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 5. The interventions are meant to deliver key results to achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2025-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current

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administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see aPDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged Version).

TARGET 6: By 2028, there will be a 5% increase in the proportion of green spaces in the five largest cities.

Rationale for the National Target

At present, about 45% of the Philippine population lives in cities. By 2050, the number is expected to increase to about 65%^[1]. The PBSAP 2015-2028 acknowledges the importance of ensuring livability in cities by identifying urban biodiversity as a new thematic focus. It recognizes the value of green spaces and the use of the City Biodiversity Index to measure biodiversity in cities. Green area accessibility has been linked to improved physical and mental health and reduced mortality. It also provides opportunities for recreation, relaxation, and community cohesion.

Urban biodiversity is a new concept in the Philippines, but some pockets of green space and landscapes have already been established and more are being established. Through synergism between and among different sectors, these urban green spaces can be improved so that urban residents can benefit from their ecosystem services and ultimately, enhance human well-being.

[1] De Vera, Ben 2017. World Bank: Filipinos living in urban areas to double to 102M by 2050. *Philippiner Daily Inquirer*, May 29, 2017. Accessed from <https://newsinfo.inquirer.net/900745/world-bank-filipinos-living-in-urban-areas-to-double-to-102m-by-2050#ixzz5ZBLgxwpN>

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Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

- 5. Loss of habitats
- 11. Protected areas
- 12. Preventing extinctions
- 13. Agricultural biodiversity
- 14. Essential ecosystem services

Relevant documents and information

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TARGET 7: By 2028, as a result of improved conservation, ecosystem services provided by key biodiversity areas will be enhanced.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

6. Sustainable fisheries
14. Essential ecosystem services

Relevant documents and information

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development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see PDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged Version).

TARGET 8: By 2028, fish stocks of economically important species will be maintained.

Rationale for the National Target

Fisher overcapacity has resulted in major overexploitation of Philippine reef fisheries. Demersal fish stocks are biologically and economically overfished in almost all areas other than Eastern Luzon, Palawan, and the Southern Sulu Sea (BFAR, n.d.).

Illegal, unreported and unregulated fishing (IUUF) is an aggravating factor, posing impediments to all attempts to manage fisheries resources and fish stocks in the country. The growing demand for fisheries resources, the increase in the numbers of fishers and vessels, and the improving efficiency of fishing gear drive the collection of these resources way beyond their capacity to recover. Moreover, the decline in the availability of fisheries resources increases competition and, thus, prods players to resort to illegal, and often, more efficient forms of fishing.

EN

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

6. Sustainable fisheries
14. Essential ecosystem services

Relevant documents and information

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TARGET 9: By 2028, there will be an annual increase of at least 5% in biodiversity conservation related jobs (ecotourism, sustainable agriculture, ecosystem restoration).

Rationale for the National Target

The conservation and sustainable use of biodiversity provides a vital source of livelihood for many Filipino. These can come from the practice of many sectors such as sustainable agriculture and fisheries, ecosystem restoration, and ecotourism. DENR AO 2013-19 defines ecotourism as a "form of sustainable tourism within a

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natural and cultural heritage area where community participation, protection and management of natural resources, culture and indigenous knowledge and practices, environmental education and ethics as well as economic benefits are fostered and pursued for the enrichment of host communities and satisfaction of visitors". These provide economic and social benefits through recreation, leisure and education (Sinha & Heaney, 2005).

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

14. Essential ecosystem services
16. Nagoya Protocol on ABS

Relevant documents and information

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TARGET 10: By 2028, the key threats to biodiversity will be reduced, controlled or managed.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

5. Loss of habitats
6. Sustainable fisheries
7. Areas under sustainable management
8. Pollution
9. Invasive Alien Species
10. Vulnerable ecosystems

Relevant documents and information

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is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all.” It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 10. The interventions are meant to deliver key results to achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2025-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines’ obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration’s 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see aPDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged Version).

TARGET 11: By 2028, there will be a 10% increase in agricultural areas devoted to all types of biodiversity-friendly agriculture.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

1. Awareness of biodiversity values
2. Integration of biodiversity values
3. Incentives
4. Use of natural resources
14. Essential ecosystem services

- 15. Ecosystem resilience
- 16. Nagoya Protocol on ABS
- 18. Traditional knowledge

Relevant documents and information

From 2013 to 2014, the Department of Environment and Natural Resources (DENR) through the Biodiversity Management Bureau (BMB) as the National Technical Focal Point for the Convention on Biological Diversity, conducted a multi-stakeholder process of formulating the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 through national and regional consultation-workshops. More than 800 individuals participated, representing nearly 200 organizations from national government agencies (NGAs), local government units (LGUs), academe and research, civil society organizations (CSOs), and the private sector. The PBSAP is the country's roadmap to conserve its biodiversity and achieve its vision - "By 2028, biodiversity is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all." It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 11. The interventions are meant to deliver key results to achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2025-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see PDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged Version).

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TARGET 12: By 2028, capacity for biodiversity conservation of public and private sector groups in terrestrial and marine

protected areas/key biodiversity areas will be strengthened.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

1. Awareness of biodiversity values
2. Integration of biodiversity values
3. Incentives
4. Use of natural resources
14. Essential ecosystem services
15. Ecosystem resilience
16. Nagoya Protocol on ABS
18. Traditional knowledge

Relevant documents and information

From 2013 to 2014, the Department of Environment and Natural Resources (DENR) through the Biodiversity Management Bureau (BMB) as the National Technical Focal Point for the Convention on Biological Diversity, conducted a multi-stakeholder process of formulating the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 through national and regional consultation-workshops. More than 800 individuals participated, representing nearly 200 organizations from national government agencies (NGAs), local government units (LGUs), academe and research, civil society organizations (CSOs), and the private sector. The PBSAP is the country's roadmap to conserve its biodiversity and achieve its vision - "By 2028, biodiversity is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all." It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 12. The interventions are meant to deliver key results to achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2025-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and

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controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see aPDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged Version).

TARGET 13: By 2028, 50% of local government units will have formulated and adopted the enhanced comprehensive land use plan using the revised Housing and Land Use Regulatory Board (HLURB) framework.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

1. Awareness of biodiversity values
2. Integration of biodiversity values
3. Incentives
4. Use of natural resources
14. Essential ecosystem services
15. Ecosystem resilience
16. Nagoya Protocol on ABS
18. Traditional knowledge

Relevant documents and information

From 2013 to 2014, the Department of Environment and Natural Resources (DENR) through the Biodiversity Management Bureau (BMB) as the National Technical Focal Point for the Convention on Biological Diversity, conducted a multi-stakeholder

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process of formulating the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 through national and regional consultation-workshops. More than 800 individuals participated, representing nearly 200 organizations from national government agencies (NGAs), local government units (LGUs), academe and research, civil society organizations (CSOs), and the private sector. The PBSAP is the country's roadmap to conserve its biodiversity and achieve its vision - "By 2028, biodiversity is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all." It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 13. The interventions are meant to deliver key results to achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2025-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see PDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged Version).

TARGET 14: By 2028, 1 million hectares of degraded ecosystems will be restored and/ or will be under various stages of restoration.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

1. Awareness of biodiversity values
2. Integration of biodiversity values
3. Incentives
4. Use of natural resources
14. Essential ecosystem services
15. Ecosystem resilience
16. Nagoya Protocol on ABS
18. Traditional knowledge

Relevant documents and information

From 2013 to 2014, the Department of Environment and Natural Resources (DENR) through the Biodiversity Management Bureau (BMB) as the National Technical Focal Point for the Convention on Biological Diversity, conducted a multi-stakeholder process of formulating the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 through national and regional consultation-workshops. More than 800 individuals participated, representing nearly 200 organizations from national government agencies (NGAs), local government units (LGUs), academe and research, civil society organizations (CSOs), and the private sector. The PBSAP is the country's roadmap to conserve its biodiversity and achieve its vision - "By 2028, biodiversity is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all." It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 14. The interventions are meant to deliver key results to achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2015-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the

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DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see PDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged Version).

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TARGET 15: By 2028, there will be at least 10 nationally recognized agricultural heritage systems.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

1. Awareness of biodiversity values
2. Integration of biodiversity values
3. Incentives
4. Use of natural resources
14. Essential ecosystem services
15. Ecosystem resilience
16. Nagoya Protocol on ABS
18. Traditional knowledge

Relevant documents and information

From 2013 to 2014, the Department of Environment and Natural Resources (DENR) through the Biodiversity Management Bureau (BMB) as the National Technical Focal Point for the Convention on Biological Diversity, conducted a multi-stakeholder process of formulating the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 through national and regional consultation-workshops. More than 800 individuals participated, representing nearly 200 organizations from national government agencies (NGAs), local government units (LGUs), academe and research, civil society organizations

(CSOs), and the private sector. The PBSAP is the country’s roadmap to conserve its biodiversity and achieve its vision - “By 2028, biodiversity is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all.” It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 15. The interventions are meant to deliver key results to achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2025-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines’ obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration’s 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see PDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged Version).

TARGET 16: By 2028, there will be improved conservation management of caves.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

1. Awareness of biodiversity values
2. Integration of biodiversity values
3. Incentives
4. Use of natural resources
14. Essential ecosystem services
15. Ecosystem resilience
16. Nagoya Protocol on ABS
18. Traditional knowledge

Relevant documents and information

From 2013 to 2014, the Department of Environment and Natural Resources (DENR) through the Biodiversity Management Bureau (BMB) as the National Technical Focal Point for the Convention on Biological Diversity, conducted a multi-stakeholder process of formulating the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 through national and regional consultation-workshops. More than 800 individuals participated, representing nearly 200 organizations from national government agencies (NGAs), local government units (LGUs), academe and research, civil society organizations (CSOs), and the private sector. The PBSAP is the country's roadmap to conserve its biodiversity and achieve its vision - "By 2028, biodiversity is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all." It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 16. The interventions are meant to deliver key results to achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2025-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see aPDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged

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Version).

TARGET 17: By 2020, relevant biodiversity conservation policies to address existing gaps are in place.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

1. Awareness of biodiversity values
2. Integration of biodiversity values
3. Incentives
4. Use of natural resources
14. Essential ecosystem services
15. Ecosystem resilience
16. Nagoya Protocol on ABS
18. Traditional knowledge

Relevant documents and information

From 2013 to 2014, the Department of Environment and Natural Resources (DENR) through the Biodiversity Management Bureau (BMB) as the National Technical Focal Point for the Convention on Biological Diversity, conducted a multi-stakeholder process of formulating the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 through national and regional consultation-workshops. More than 800 individuals participated, representing nearly 200 organizations from national government agencies (NGAs), local government units (LGUs), academe and research, civil society organizations (CSOs), and the private sector. The PBSAP is the country's roadmap to conserve its biodiversity and achieve its vision - "By 2028, biodiversity is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all." It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 17. The interventions are meant to deliver key results to

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achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2025-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see PDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged Version).

TARGET 18: By 2028, there will be a 10% annual increase from the 2015 baseline in the number of schools, peoples' organizations, media organizations, local government units, private companies, policy makers, government offices that are aware and supportive of biodiversity, its importance, threats, and benefits of protecting it.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

1. Awareness of biodiversity values
2. Integration of biodiversity values
3. Incentives
4. Use of natural resources
14. Essential ecosystem services
15. Ecosystem resilience
16. Nagoya Protocol on ABS

18. Traditional knowledge

Relevant documents and information

From 2013 to 2014, the Department of Environment and Natural Resources (DENR) through the Biodiversity Management Bureau (BMB) as the National Technical Focal Point for the Convention on Biological Diversity, conducted a multi-stakeholder process of formulating the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 through national and regional consultation-workshops. More than 800 individuals participated, representing nearly 200 organizations from national government agencies (NGAs), local government units (LGUs), academe and research, civil society organizations (CSOs), and the private sector. The PBSAP is the country's roadmap to conserve its biodiversity and achieve its vision - "By 2028, biodiversity is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all." It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 18. The interventions are meant to deliver key results to achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2025-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see PDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged Version).

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TARGET 19: By 2028, there will be a 10% increase in total area from 2015 levels of terrestrial including inland wetlands protected areas managed through the National Integrated Protected Areas System (NIPAS) and other conservation

measures (Indigenous Community Conserved Areas, Local Conservation Areas, Critical Habitats) that overlap with key biodiversity areas.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

1. Awareness of biodiversity values
2. Integration of biodiversity values
3. Incentives
4. Use of natural resources
14. Essential ecosystem services
15. Ecosystem resilience
16. Nagoya Protocol on ABS
18. Traditional knowledge

Relevant documents and information

From 2013 to 2014, the Department of Environment and Natural Resources (DENR) through the Biodiversity Management Bureau (BMB) as the National Technical Focal Point for the Convention on Biological Diversity, conducted a multi-stakeholder process of formulating the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 through national and regional consultation-workshops. More than 800 individuals participated, representing nearly 200 organizations from national government agencies (NGAs), local government units (LGUs), academe and research, civil society organizations (CSOs), and the private sector. The PBSAP is the country's roadmap to conserve its biodiversity and achieve its vision - "By 2028, biodiversity is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all." It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 19. The interventions are meant to deliver key results to achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2025-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the

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PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see PDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged Version).

TARGET 20: By 2028, there will be a 20% increase from 2015 levels in the coverage of established marine protected areas/ sanctuaries across various aquatic habitats.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

1. Awareness of biodiversity values
2. Integration of biodiversity values
3. Incentives
4. Use of natural resources
14. Essential ecosystem services
15. Ecosystem resilience
16. Nagoya Protocol on ABS
18. Traditional knowledge

Relevant documents and information

From 2013 to 2014, the Department of Environment and Natural Resources (DENR) through the Biodiversity Management Bureau (BMB) as the National Technical Focal

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Point for the Convention on Biological Diversity, conducted a multi-stakeholder process of formulating the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 through national and regional consultation-workshops. More than 800 individuals participated, representing nearly 200 organizations from national government agencies (NGAs), local government units (LGUs), academe and research, civil society organizations (CSOs), and the private sector. The PBSAP is the country's roadmap to conserve its biodiversity and achieve its vision - "By 2028, biodiversity is restored and rehabilitated, valued, effectively managed, secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all." It has nine strategic priorities -three direct interventions and 6 indirect interventions- with 113 actions translated into 20 national targets with respective indicators that conform to the global Aichi Biodiversity Targets, which includes this particular target-Target 20. The interventions are meant to deliver key results to achieve the 20 national targets and contribute to the overall human well-being (see page 86 of PBSAP 2025-2028 Full Version). In June 2016, the DENR issued Department Administrative Order (DAO) No. 2016- 12 adopting the PBSAP and authorized the BMB to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR. The PBSAP integrates the Philippines' obligations under the CBD into the national development and sectoral planning frameworks, and contributes to achieving the current administration's 10-point agenda which are reflected in the Philippine Development Plan (PDP) 2016-2022 (see PDP 2016-2022) . It likewise contributes to achieving the Sustainable Development Goals (see page 18 of PBSAP 2015-2028 Abridged Version).

Section II. Implementation measures, their effectiveness, and associated obstacles and scientific and technical needs to achieve national targets

Conserving biodiversity

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

Section 22 of Republic Act (RA) 9147 or Wildlife Resources Conservation and Protection Act provides that the Secretary of the Department of Environment and Natural Resources (DENR), the Department of Agriculture (DA) or the

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Palawan Council for Sustainable Development (PCSD) shall determine whether any wildlife species or subspecies is threatened, and classify the same as CR, EN, V or other accepted categories. This determination shall be based on best scientific data and with due regard to internationally accepted criteria, including but not limited to: a) present or threatened destruction, modification or curtailment of habitat or range; b) over-utilization for commercial, recreational, scientific or educational purposes; c) inadequacy of existing regulatory mechanisms; and, d) other natural or man-made factors affecting the existence of wildlife. It also provides for a regular review and updating of the list, provided that the species listed as threatened shall not be removed therefrom within three years from its initial listing.

In addition, four criteria established by the International Union for the Conservation of Nature (IUCN) were also used to assess the conservation status of Philippine wild plant species. These IUCN criteria are: a) perceived/observed population size reduction; b) species' geographic range (extent of occurrence and/or area of occupancy); c) small population size and continuing decline in such population; and, d) very small or restricted population.

Threatened Terrestrial Fauna

In 2004, Department Administrative Order (DAO) 2004-15 was issued by the Secretary of the DENR Establishing the List of Terrestrial Threatened Species and their Categories, and the List of Other Wildlife Species pursuant to Republic Act No. 9147. The DAO listed 145 threatened wildlife (24 CR, 28 EN, 84 VU, and 9 Other Threatened Species Category). In 2016, 92 threatened species listed in Appendices I and II of the Convention on International Trade in Endangered Species (CITES) of Flora and Fauna were added, consistent with the Amendments to these Appendices, which were adopted by the Conference of the Parties at its 17th meeting in Johannesburg, South Africa. The species listed in DAO 2004-15 and those included in 2016 CITES Appendices I and II comprise the baseline of 2016, as defined in this target and indicator (see Table 1).

In 2017, a proposed Updated National List of Threatened Philippine Fauna and Their Categories was endorsed to the DENR Secretary. The list updates DAO 2004-15 but this update has yet to be officially recognized by the DENR. The addition of invertebrates in the 2017 updated list has significantly increased the number of threatened species. From 237 species, the proposed list now includes 1,106 species, with 784 invertebrate species, which were not included in DAO 2004-15. Most of the vertebrates that were added to the updated list were birds.

Pending approval by the DENR Secretary of the updated list, however, the species listed in DAO 2004-15 and those included in CITES Appendices I and II as of 2016 prevails. Figure 1 shows the number of threatened fauna and their conservation status in 2014, 2016 and 2017 while Figure 2 shows the distribution of species across the conservation categories in 2014, 2016, and 2017.

Figure 3 shows that most of the species maintained their conservation status, some improved (*Archboldomys luzonensis*, *Gallucolumba crinigera*, *Rhyacornis bicolor*, *Pelochelys cantorii*, *Platymantis negrosensis*, *Platymantis subterrestris*), and some worsened (*Acerodon jubatus*, *Penelopides panini*, *Prioniturus verticalis*, *Hypsipetes siquijorensis*, *Dermochelys coriacea*, *Platymantis insulates*). The full list of species whose conservation status improved, maintained, and worsened is attached as Table 2.

Conservation programs for specific threatened species continue to be implemented by government and/or by civil society organizations, academe and the private sector. These include conservation programs for priority

species like the Philippine eagle (*Pithecophaga jefferyi*), Philippine Cockatoo (*Cacatua haematuropygia*) Tamaraw (*Bubalus mindorensis*), Philippine tarsier (*Tarsius syrichta*), Philippine Crocodile (*Crocodylus mindorensis*), Giant Golden-crowned Flying Fox (*Acerodon jubatus*), Sulu hornbill (*Anthracoceros montani*), Walden's hornbill (*Rhabdotorrhinus waldeni*), Visayan Spotted Deer (*Rusa alfredi*) and migratory species like marine turtles and Dugong (*Dugong dugon*). Other conservation programs include those of the Tarictic Hornbill (*Penelopides panini*), Negros Bleeding Heart (*Gallicolumba keayi*), Cebu Cinnamon (*Cinnamomum cebuense*), Philippine Brown Deer (*Rusa marianna*), and the Visayan Warty Pig (*Sus cebifrons*).

Philippine eagle sightings in the wild were recorded at 39 in 2013 to 24 in 2017, while captive-bred Philippine eagles released to the wild from 2000 to 2016 totaled 28. The Tamaraw Conservation Program regularly monitors the tamaraw population in Mt. Iglit-Baco National Park. Figure 4 shows an increasing trend in tamaraw population over a 10-year monitoring period. The Katala Foundation Inc. estimates that around a third to half of the remaining wild population are found in Rasa Island (Narra), Dumaran Island (Dumaran), Pandanan and Bugsuk Islands (Balabac), all in Palawan Province. Cockatoo populations are reportedly stable or increasing in all sites, however, law enforcement needs to be strengthened and development pressures on these areas need to be addressed.[1] In 2015, the PCCP was chosen as one of the ten Galing Pook Awardees in local governance practice.[2]

Stakeholders from Negros Island reported that reforestation activities have resulted in an increase in the population of the Cebu Cinnamon. Local community ordinances for the protection of wildlife have also been enacted in 15 barangays, while partnerships with local government units (LGUs), NGOs, and the academe have also strengthened efforts in wildlife conservation. Stakeholders from the Autonomous Region in Muslim Mindanao (ARMM) spotted six bird species that were thought to be extinct in Maguindanao Marsh. Regional consultations echoed the need for scientific expertise, including taxonomists to aid in the identification of species, wildlife rescue centers for the rehabilitation of confiscated wildlife and equipment to support biodiversity assessments and monitoring. The lack of baseline data on the population and conservation status of species also remains a challenge.

Threatened Flora

In 2007, the DENR established the National List of Threatened Philippine Plants and their Categories through DENR Administrative Order (DAO) No. 2007-01, with the expert assistance of the Philippine Plant Conservation Committee (PPCC), which was created under DENR Special Order No. 2003-32. A total of 526 threatened plants (99 CR, 187 E, 176 V and 64 Other Threatened Species category) were included in this list.

Following the reconstitution of the PPCC in 2013 through DENR Special Order No. 2013-71, the DENR-BMB and the PPCC updated DAO 2007-01. Using the criteria provided under Section 22 of RA 9147 and the IUCN criteria, and based on a participatory assessment and validation process involving experts and public consultations, a total of 984 plant species were identified as threatened (179 CR, 254 E, 406 V and 145 as Other Threatened Species Category). The list was formally recognized in 2017 through DAO 2017-11 updating the National List of Threatened Philippine Plants and their Categories.

Table 3 shows that, since 2007, there has been a significant increase in the total number of threatened plants in the Philippines, with 458 new plant species included in the updated list compared to 526 species in 2007. From this

updated list, 737 or 75.7% are endemic, and 95 are newly discovered species that occur in low populations and have restricted range (small island endemics).

In 2007, there were more plant species listed as endangered than in any of the other categories. This changed in 2017 when most plant species are now listed as vulnerable, a drastic increase from 176 species in 2007 to 406 species in 2017 (Figure 5).

The increase in the number of endangered and critically endangered species is a cause for alarm as 75% of plant species in the list are endemic to the Philippines. Together, endangered and critically endangered species account for 49% of all endemics (Figure 6). Vulnerable species account for 39% of endemics, with the potential to become endangered and critically endangered if conservation efforts are not strengthened.

The *Rafflesia lobata*, *Rafflesia speciosa*, Red Lauan (*Shorea negrosensis*), and White Lauan (*Shorea contorta*) are some of the flora endemic to the Philippines with continuing conservation programs. Genetic and ecological studies on species are recommended to ensure that invasive flora do not compete and decimate endemic species. DENR Regional Offices have delineated areas for production forests to keep invasive but economically important species such as Mahogany (*Swietenia* sp.) from encroaching on the natural habitats of endemic species.

The Energy Development Corporation (EDC) has entered into partnership with the DENR-BMB for the Adopt-A-Wildlife Species Program to implement the BINHI Tree for the Future Project. Ninety-six (96) priority threatened species benefit from the Program through the following: 1) Species Rescue and Protection - this includes actual inventory of mother trees, and sourcing of seeds, seedlings and wildlings; 2) Vegetative Material Reproduction (Propagation) - this includes species propagation and development of a propagation protocol for every priority species; 3) Establishment of future mother trees (Tree planting) - this includes planting of quality seedlings in different partner schools and institutions to develop new mother trees; and, 4) Advocacy - this includes gathering all information for public sharing through books, websites and other Information, Education and Communication materials.

For the year 2017, the Project targeted 10 species for inventory and geo-tagging, namely: Bagadlau (*Xanthostemon philippinensis*), Mapilig (*Xanthostemon bracteatus*), Mangkono (*Xanthostemon verdugonianus*), Palawan mangkono (*Xanthostemon speciosus*), Sierra madre mangkono (*Xanthostemon fruticosus*), Malabayabas (*Tristanopsis decorticate*), Dalingdingan (*Hopea foxworthyi*), Yakal Malibato (*Shorea malibato*), Samar gisok (*Hopea samarensis*), and Yakal kaliot (*Hopea malibato*).

Threatened aquatic wildlife

In 2017, nine sub-committees of the PARLC were created by DA-BFAR to address the conservation status of specific aquatic groups, namely: 1) marine bony fishes: pelagic; 2) marine bony fishes: demersal and seahorses; 3) freshwater bony fishes; 4) cartilaginous fishes; 5) cetaceans (Order Cetartiodactyla); 6) invertebrates; 7) aquatic snakes; 8) ornamental aquatic organisms; and, 9) aquatic plants. These sub-committees are in the process of reviewing and recommending species for inclusion in the Philippine National Red List of Threatened Aquatic Species which will serve as a guide for the country's conservation management efforts.

FAO 233-2010 also identified economically important aquatic organisms. Bivalves, octopus, and squid (Phylum Mollusca) were most represented in the list, followed by bony fishes (Phylum Chordata), distributed across 20 different

families (Figure 7).

National Target(s)

TARGET 1: By 2028, the conservation status of nationally and globally threatened species in the country from 2016 levels is maintained or improved.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 1. Figures, Tables, and Footnotes.pdf](#)

Other relevant website address or attached documents

[Galing Pook Awards 2015 - Philippine Cockatoo Conservation Program](#)

Conserving biodiversity

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

In the Fifth National Report to the CBD, the Philippines reported that forestry statistical data of 2003 and 2010 showed an increase in open forest cover as well as mangrove cover and a decrease in closed forest cover. The increase in open forest cover and decrease in closed forest cover indicate that the forest ecosystem continues to be threatened by human activities, such as logging (both legal and illegal), kaingin or slash and burn agriculture and forest fire.

Data from the National Mapping Resource and Information Authority (NAMRIA) indicate that the total forest cover decreased by 4.59% in 2010 and increased by 2.53% in 2015 (Figure 1).

Within forestlands, there was a general increase in forest cover while within alienable and disposable lands, there was a general decrease in forest cover (Figure 2).

The overall increase in forest cover within forestlands may be attributed to the ongoing implementation of the National Greening Program (NGP), discussed more extensively under Target 14 on restoration of degraded habitats. According to Presidential Executive Order (EO) 26 issued in 2011, the NGP seeks to plant some 1.5 billion trees covering about 1.5 million hectares for a period of six years from 2011 to 2016. In 2015, EO 193 expanded the coverage of the NGP to include all remaining unproductive, denuded and degraded forestlands, and extended the period of implementation from 2016 to 2028.

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The top nine provinces with the highest forest cover in 2010 and 2015 (Palawan, Isabela, Cagayan, Agusan del Sur, Surigao del Sur, Quezon, Apayao, Aurora, Bukidnon) remain the same except for Nueva Vizcaya. The forest cover of Nueva Vizcaya decreased by more than 11,000 hectares and was replaced by Eastern Samar for the 10th spot (Figure 3). In terms of forest cover density (percentage forest cover vs. land area), the top ten provinces in 2010 are Aurora, Apayao Surigao del Sur, Nueva Vizcaya, Palawan, Benguet, Tawi-tawi, Eastern Samar, Quirino, and Mountain Province. In 2015, forest cover density in Nueva Vizcaya decreased and Tawi-tawi was dropped from the top ten list, to be replaced by Abra (Figure 4). As of 2015, approximately 2.5 million hectares of forestland are found within declared protected areas (PA), while 3.9 million are within identified key biodiversity areas (KBAs).

In terms of regional distribution of forestland cover (closed, open and mangrove) within protected areas in 2010 and 2015, Region 4B has the most forestland cover followed by Regions 2 and 8. In terms of closed forest, there are more areas of closed forest in Region 2 followed by Region 4B and Region 3 in 2010 and 2015 (Figure 6). However, closer monitoring of forest cover in some areas is needed in order to stem any decline in cover. For example, there is a marked decrease in closed forest in Region 2. Evidence has to be established whether the decrease of more than 11,000 hectares of forest cover in Region 2 can be attributed to loss of forest cover within protected areas that are part of Nueva Vizcaya.

Independent reforestation activities organized by local communities, civil society organizations, private groups, and the academe supplement the reforestation activities of the National Greening Program. The intensified enforcement of national and local forest laws, deputation of Bantay Gubat, and regular conduct of biodiversity assessments through the LAWIN Forest and Biodiversity Protection System and the Biodiversity Monitoring System has also improved the management and protection of forests.

However, stakeholders reported that insufficient amount of resources for the routine monitoring and management of forested and reforested areas remains a challenge. Slash and burn practices and timber poaching also continue despite regulations. Nevertheless, local communities are enhancing their forest protection campaigns to increase community awareness and encourage the collaboration of local government units to improve forest protection initiatives.

National Target(s)

TARGET 2: By 2028, there will be no net loss in natural forest cover.

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

Measure taken has been partially effective

Relevant websites, links, and files

Conserving biodiversity

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

Coral cover

The Philippines is known to hold the third largest reef area in the world, about 22,500 square kilometers, representing 9% of the total coral reef area globally[1] It is also well-known for its species-rich coral reefs.

The 5th National Report to the Convention on Biological Diversity, citing available literature, reported an increasing trend of poor reefs with less than 1% of reefs in excellent condition. Coral cover in the Visayas and Sulu Seas decreased while coral cover in the West Philippine Sea, South Philippine Sea, and Celebes Sea regions increased from 2005 to 2010.[2]

Nationwide assessments of coral reefs have been conducted in the early 70s. However, information needs to be updated. The Coral Reef Visualization and Assessment (CoRVA) and National Assessment of Coral Reef Ecosystems (NACRE) Projects were initiated in 2014 to address this need. CoRVA is a project under the Sustainable Coral Reef Ecosystems Management Program which was later succeeded by the Coastal and Marine Ecosystems Management Program of the Department of Environment and Natural Resources (DENR). It is conducted within National Integrated Protected Areas System (NIPAS) sites and aims to evaluate the impact of fish sanctuaries within NIPAS sites, assess and describe coral reef and seagrass environments, and monitor coastal benthic habitats.[3][4] The National Assessment of Coral Reef Ecosystems (NACRE) of the Department of Science and Technology aims to map the distribution of coral communities in representative sites around the Philippines and assess these communities through common metrics such as hard coral cover, biodiversity, and resilience to threats like coral bleaching. It also aims to establish a monitoring system that quantifies changes in coral reef structure and creates projections of the future state of coral reefs.[5]

The CoRVA and NACRE Projects are timely in order to update information, establish a "statistically valid national framework" on coral reef assessment, and provide an accurate estimate of coral cover and change over time.[6] Methodologies used for both assessments have already been standardized, but the issue of scale and "categorization of results-conditions" need further discussion.

CoRVA assessments are still ongoing and the results will be shared after project

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completion in 2019. On the other hand, initial findings from the SHINE: Coral Reefs Project conducted from 2015 to 2017 in 166 stations (108 in Luzon, 31 in Visayas, and 27 in Mindanao) across six biogeographic regions are shown in Figures 1A and 1B. Figure 1A shows the current state of coral reefs using the Gomez et al. (1981) scale which encompasses all benthic categories, including soft corals, where: Excellent (>75% LCC); Good (50-75% LCC); Fair (25-50%); and Poor (0-25%). Using this scale, none of the 166 stations showed LCC in the Excellent category. More than 90% were in the poor and fair categories. Average hard coral cover was only 22%. While these values indicated a decline in local reef conditions in the last four decades, they are not comparable with previous assessments due to the differences in geographic scope and survey methods.[7] Figure 1B shows the comparison between the results of the first national assessment (1976-1981) using the Gomez et al scale and the latest national assessment (2015-2017) using the Licuanan et al scale for live hard coral cover (LCC) estimates: Excellent (>44% LCC); Good (34-44% LCC); Fair (22-33% LCC); Poor (0-22% LCC).[8]

Data gathered from the CoRVA and SHINE assessments, once reconciled, may be established as baseline data to measure progress towards zero net loss in the presence and area distribution of live coral cover by 2028. However, additional efforts are still needed to cover other sites in the country.

Mangroves

Data from the National Mapping Resource and Information Authority (NAMRIA) showed that the mangrove forest cover increased from 247,362 hectares in 2003 to 310,531.469 hectares in 2010 but decreased to 303,402.939 hectares in 2015 (Figure 2).

Within forestlands, there was an increase in mangrove cover from 23,591 hectares in 2010 to 215,969 hectares in 2015. Within alienable and disposable lands, there was a decrease in cover from 107,002 hectares in 2010 to 87,700 hectares in 2015 (see Figure 2 under Target 2). In terms of the distribution of mangrove cover within protected areas, Region 4B had the most mangrove cover followed by Regions 13 and 8 in 2010 and 2015 (see Figure 6 under Target 2).

In 2014, the Philippine government included the Mangrove and Beach Forest Development Project (MBFDP) as a component program under the National Greening Program (NGP). This is in recognition of the important role of mangrove and beach forests as natural defenses against storm surges and as protection to coastal communities, following the devastation brought by Super Typhoon Haiyan to the Visayas region in 2013. Stakeholders from local government units (LGU), civil society organizations (CSOs), and the private sector participated in the implementation of the MBFDP in disaster-affected areas. This Project also emphasized the importance of mapping and collecting baseline data in target sites (Region 4A, 4B, 5, 6, 7, 8, 9, 10, 11 and 13) as basis for future impact assessments. A total of 50,000 hectares of mangroves and beach forests are targeted for development, planting, and enrichment.[9] Information on mangrove restoration is further discussed under Target 14. Data on mangrove cover from NAMRIA, the MBFDP and other coastal assessments, once consolidated, may be established as baseline data to

measure progress related to zero net loss in presence and area distribution of mangroves by 2028.

Seagrasses

Seagrasses serve as ecological service providers and biological watchdogs. Widespread loss of seagrasses and changes in its distribution signify a loss of important ecosystems services. Seagrass ecosystems are the least studied compared to other coastal habitats, and there are many parts of Southeast Asia where their existence remains unknown.[10]

Recent updates show that Southeast Asia contains 29% of the world's seagrass species, with 21 seagrass species in nine genera and four families. The Philippines has the highest seagrass diversity in Southeast Asia, with 18 species found in 529 sites in the country from 1983 to 2012.[11] It also has the largest seagrass extent, with seagrass meadows constituting at least 24% of its territorial waters. Eastern Philippines is known to have 11 seagrass species in 7,158.9 square kilometers of seagrass areas. Most of the studies are from only two biogeographic areas and only on 10% of seagrass flora.[12]

The 2014 Report on the State of the Coral Triangle Initiative cited 2004 data estimating a total of 978 square kilometers of seagrass beds from 96 sites[13] and ongoing assessments being conducted by the UP-MSI Seagrass Laboratory. The status of seagrass as a resource for protection and conservation is yet largely unknown and major developments and habitat destruction continue to pose as major long-term threats to this ecosystem. Other factors that cause severe impacts on seagrass ecosystems are pollution (sewage, industrial), fisheries overexploitation, and siltation or sedimentation. There is little appreciation for seagrasses, insufficient number of trained seagrass researchers, limited and uncoordinated research continue to be challenges to effective seagrass conservation and management.[14] Beyond this, there is also a need to link policy, science, and practice in the management of this resource.[15]

At present, there is lack of updated data on the status and distribution of seagrasses on all 529 sites that have been identified. Continuous assessment and monitoring needs to be done in order to track progress towards seagrass conservation and management and to ensure there will be no net loss in the presence and area distribution of this resource.

The establishment of marine protected areas (MPAs) and marine protected area network (MPANs) through local declarations has significantly contributed to the protection of coral, mangrove, and seagrass ecosystems. More CSOs, private groups, and members of the academe have partnered with local communities to conduct assessments and mapping of live coral cover, seagrass, and mangroves. However, there is difficulty in consolidating data because of differences in scales of measurement. The DENR and the Department of Agriculture- Bureau of Fisheries and Aquatic Resources are

currently addressing individual monitoring and evaluation systems, and establishing standards in evaluating seagrass conditions.

National Target(s)

TARGET 3: By 2028, there will be no net loss in presence and area distribution of live coral cover, mangroves, and seagrasses.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 3. Figures and Footnotes.pdf](#)
[6NR_PH_Coastal Resources Map.jpg](#)

Conserving biodiversity

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

One of the two new focus areas in the PBSAP 2015-2028 is the conservation of agricultural biodiversity[1], which hopes to address food security and genetic diversity of crops, livestock and poultry. However, data concerning agricultural biodiversity is scant and fragmented. In 1998, the Biodiversity of Livestock and Poultry Genetic Resources in the Philippines was published by the University of the Philippine at Los Banos and the Philippine Council for Agriculture, Forestry and Natural Resources to provide vital information in the management, improvement and conservation of domestic animal genetic resources, and to promote awareness and understanding of diversity within and between species, and ecosystems in local animal production.[2] The 4th National Report to the CBD mentioned the Philippine Animal Genetic Resource Report published by the Bureau of Animal Industry in 2003, which stated that surveys on breed characterization have been conducted for most livestock and poultry present in the country, however these are limited in scope and irregular in frequency. It also mentioned the Country Report on the State of Plant Genetic Resources for Food and Agriculture published in 2007 which stated that there are 173,205 accessions of ex situ germplasm collections in the Philippines, which have been assembled and maintained by 45 government and civil society organizations since the 1990s.[3] However, these Reports have not been updated since. There are also published lists and records of cultivars that are currently kept in ex-situ collections of various institutes such as the National Plant Genetic Resources Laboratory, the Philippine Rice Research Institute, Philippine Coconut Authority, Department of Agriculture (Bureau of Plant Industry, National Tobacco Administration) and State Universities and Colleges. Yet, a national record of in-situ locations or coverage areas of specific wild crop relatives, cultivars and landraces is lacking.

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Notwithstanding this state, several efforts have addressed the conservation of agricultural biodiversity. These include the Philippine Native Animal Development Program mandated by the Department of Agriculture in 2010, which serves as a centralized gene pool for pigs and poultry. The 2017 Country Report to the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) also reflected continuing efforts relevant to the conservation of plant genetic resources as well as gaps in compliance, including the lack of survey and inventory of plant genetic resources for food and agriculture. There is no current law to implement the Treaty, although there are existing laws and policies that apply to plant genetic resources. An Executive Order entitled “Providing for the Collection, Characterization, Conservation, Protection and Sustainable Use of Plant Genetic Resources for Food and Agriculture, Appropriating Funds Therefor and for Other Purposes” has been proposed for approval of the President.[4] In the 17th Congress, House Bill 2163 or the Philippine Genetic Resources and Access and Benefit Sharing Bill has been filed, seeking to address the issue of benefit sharing arising from the use of genetic resources and associated traditional knowledge. The UNDP/GEF Biodiversity Partnerships Project, implemented by the Department of Agriculture and the Department of Environment and Natural Resources, also supported a sub-project on Integrating the Conservation of Plant Genetic Resources for Food and Agriculture into Decentralized Landscape Management for Food Security and Biodiversity Conservation in Critical Eco-regions of the Philippines from 2014 to 2016. The sub-project contributed to the conservation of traditional varieties of rice, sweet potato, yam and taro in selected sites in Antique, Davao Oriental, Iloilo and Quirino Provinces, the preparation of strategic action plans for their conservation, and the establishment of models of community-based genebanks.[5] Participating stakeholders in the regional consultations reported that the establishment of these community-based gene banks were often in partnership with local universities, which conduct germplasm studies. The Capiz State University in Western Visayas has collected germplasm from 50 upland rice varieties, sweet potatoes, and cassava for research, the Visayas State University in Eastern Visayas has collected germplasm from several dipterocarp species. Other noteworthy efforts to promote locally-farmed crops and the planting of indigenous trees include the booming (purple yam) industry in Bohol, identification of sweet potato varieties that have higher resistance to pests and diseases in Negros Oriental, and the establishment of arboretums in Negros Island and some provinces in SOCCKSARGEN and Northern Mindanao. Despite these accomplishments, stakeholders from consultations reported that data on the diversity and conservation status of plants and domesticated animals need to be improved.

National Target(s)

TARGET 4: By 2028, over 50% of genetic diversity of cultivated plants and farmed and domesticated animals and wild relatives will be conserved or maintained.

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

Measure taken has been partially effective

Relevant websites, links, and files

Conserving biodiversity

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

Many waterbird species migrate annually along established flyways to spend the northern winter in the southern hemisphere. One of these migration flyways is the East Asia-Australasian Flyway (EAAF) which extends from northern Arctic Russia and North America to southern Australia and New Zealand, passing by much of eastern Asia, Southeast Asia, including the Philippines, and western Pacific.

The entire Philippines is part of the EAAF, with inland and coastal wetland sites that are monitored annually through the Asian Waterbird Census (AWC). The AWC is conducted during the second and third weeks of January in identified AWC sites in the Philippines. As of 2017, there are 317 bird monitoring sites in the Philippines (Figure 1).

Of all the regions in the Philippines, Region 6 (Western Visayas) consistently had the greatest number of bird monitoring sites from 2014 to 2017. This was followed by Region 1 (Ilocos Region) and Region 4A (CALABARZON). Other regions such as Region 8 (Eastern Visayas), Region 9 (Zamboanga Peninsula), Region 11 (Davao Region), and Region 12 (SOCCSKSARGEN), missed the conduct of the AWC in certain years.

Migratory birds in the AWC are classified into 11 informal groups, namely: 1) cormorants and darters (CD); 2) cranes (CR); 3) finfoot and jacanas (FJ); 4) geese and ducks (GD); 5) grebes (GR); 6) gulls, terns, and skimmers (GT); 7) herons and egrets (HE); 8) pelicans (PE); 9) rails, gallinules, and coots (RG); 10) storks, ibises, and spoonbills (SI); and, 11) shorebirds and waders (SW). Of the 170 species that are being monitored in the Philippines, only 91 species were consistently observed from 2014 to 2017. Unidentified birds classified under the informal groupings of HE, GT, GD, and RG were consistently observed as well (Figure 2).

From 2014 to 2017, SW, HE, GD, RG, and GT had the most number of recorded species and the highest population counts. Shorebirds and waders had the most number of species followed by herons and egrets, geese and ducks. Pelicans, storks, ibises, and spoonbills were not recorded in any of the years (Table 1).

The top five birds in the AWC are the Little egret, Intermediate egret, Philippine duck, Black-winged stilt, and the Whiskered tern (Table 2). All of these species are listed as of Least Concern in the IUCN Red List, with the exception of the Philippine duck which is listed as Vulnerable and is endemic to the Philippines. As more monitoring sites were added, there was also an increase in the

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number of species recorded. However, AWC data in 2016 show a dip in the number of monitoring sites; nevertheless, there was still an increase in the number of species recorded from 2015 levels (Figure 3). The full list of AWC monitoring sites and species recorded during the AWC from 2014 to 2017 are seen in Tables 3 and 4, respectively.

Some of the key inland and coastal wetland sites that are constantly monitored in this flyway are:

Olango Island Wildlife Sanctuary (OIWS)

The Olango Island Wildlife Sanctuary is a key biodiversity area located in the Olango Island Group in Lapu-lapu City, Cebu Province, Central Visayas. It was declared as a protected area through Presidential Proclamation 903 in 1992 and declared as the first Ramsar site (Wetland of International Importance) in the country in 1994. It is also recognized as an Important Bird Area for birds and waterfowls. It is known to host the greatest number of migratory birds in over 1,000 hectares of sandflats and mangroves in the island.

From 2014 to 2016, the OIWS saw a steady increase in the population of migratory bird species. However, between 2016 and 2017, population numbers took a significant dip. This may be attributed to ongoing activities such as mangrove cutting, poor solid waste management, wetland conversion, pollution, unsustainable use of resources and increasing population that threaten the island sanctuary.

Naujan Lake National Park (NLNP)

The Naujan Lake National Park was proclaimed as a protected area by Presidential Proclamation No. 282 in 1956. Like the OIWS, it is a wetland of international importance and is listed as a Ramsar Site in 1999 because of its roles as an important wintering area for migratory birds.

From 2014 to 2017, the NLNP saw a decrease in the population count of migratory species. According to the Office of the Park Superintendent, the low count may be probably due to the high mobility of ducks and an incomplete survey coverage of the NLNP. The Mindoro Biodiversity Conservation Foundation, Inc. added that the MBCFI has been encouraging nearby residents to practice sustainable agriculture and proper waste management to help increase the number of migratory birds in the future. Despite the low counts, however, sightings of new species such as spotted garneys (*Spatula querquedula*) and Eurasian wigeons (*Anas penelope*) were noted.

Negros Occidental Coastal Wetlands Conservation Area (NOCWCA)

In 2016, the Philippines designated NOCWCA as the seventh Ramsar Site in the country. It lies along 110 kilometers of coastline on Negros Island and covers seven municipalities and 52 barangays. From 2014 to 2016, there were no population count records for NOCWCA. In 2017, 25,645 birds were counted at the site. In 2018, notable bird species were sighted for the first time. These include the Eurasian Oystercatcher (*Himantopus ostralegus*), Black Noddy (*Anous worcesteri worcesteri*), and the critically endangered Spoonbill Sandpiper (*Calidris pygmea*). This is also the first time that the Spoonbill Sandpiper was sighted in the Philippines.

Tubbataha Reefs Natural Park (TRNP)

According to UNESCO, the Tubbataha Reefs Natural Park is a unique example of an atoll reef with a very high density of marine species, with the North Islet serving as a nesting site for birds and marine turtles. Due to its pristine coral reefs, lagoons, and coral islands, the TNPR has been officially designated as a Particularly Sensitive Sea Area (PSSA) by the International Marine Organization (IMO) to protect it from international shipping impacts. In 1993, Tubbataha Reef was declared as an UNESCO World Heritage Site. In 2008, it was recognized as one of the new seven Wonders of Nature and, in 2010, it was officially declared as a protected area under the National Integrated Protected Areas System through Republic Act 10067.

From 2014 to 2017, there has been an increase in the population count of migratory bird species in TNPR. There was, however, a slight dip in population number between 2015 and 2016. The Tubbataha Management Office shared that the effects of climate change have caused the hectarage of Bird Islet to decrease from 1.5 has to 1.1 hectares. Bird Islet is the last intact and primary habitat for seabirds in the Philippines. The erosion of Bird Islet may account for the steady dip in migratory bird population counts in TRNP.

TRNP was included in the East Asian Australian Partnership in 2015. Over 20,000 birds visit its two islets each year. It is the primary breeding ground of six bird species, namely: Red-footed Booby (*Sula sula*), Brown Booby (*Sula leucogaster*), Great crested Tern (*Thalasseus bergii*), Sooty Tern (*Onychoprion fuscatus*), Black Noddy (*Anous minutus*), and Brown Noddy (*Anous stolidus*). Stakeholders from the regional consultations shared that the fluctuating number of birds spotted during the AWC may be attributed to the lack of taxonomists and inadequate equipment and infrastructure (i.e. spotting scopes, high-resolution cameras and lenses, boats, watchtowers) during monitoring. As older birders retire, younger staff still need to be properly equipped to undertake the annual census. However, the lack of a knowledge transfer mechanism has made this challenging. Stakeholders also reported that continued land conversion and the non-implementation of no-build zones and easements in coastal areas could eventually lead to the decline in water bird populations.

Nevertheless, birders remain hopeful as migratory bird population counts improve. Representatives from Negros Oriental shared that more sites have been identified for the AWC in the province. In Northern Samar, the population of migratory birds spotted in Nalukban Marshland has maintained. The province is hoping to have the marshland declared as a Ramsar site. In the Sibugay Wetlands of Zamboanga Peninsula, birders spotted eight birds with tags. This is significant as bird branding keeps track of a bird's movement and life history.

National Target(s)

TARGET 5: By 2028, the population of migratory bird species identified in selected inland and coastal wetlands along the East Asian-Australasian Flyway (EAAF) will be maintained.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 5. Table 3 - AWC monitoring sites from 2014 to 2017.xlsx](#)
[Target 5. Figures, Tables, and Footnotes.pdf](#)

Conserving biodiversity

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

At the global arena, attention to urban biodiversity was highlighted with the adoption of the City Biodiversity Index (CBI), also known as the Singapore Index on Cities’ Biodiversity in 2010. The CBI is a self-assessment monitoring tool that measures biodiversity in cities and identifies interventions to improve biodiversity conservation efforts. More than 70 cities piloted the index, including three cities in the Philippines: Quezon City, Iloilo City, and Puerto Princesa City. Unfortunately, there are no available records of the CBI results of these cities, although case studies highlighted the efforts of Quezon City on its open spaces as part of park development, and of Iloilo City in revitalizing the Iloilo River through multi-stakeholder collaboration and integration. Overall, however, there is slow uptake of the CBI in the country.

Given that almost two-thirds of the population in the Philippines will be living in urban areas by 2030, the need to address urban biodiversity—its conservation and restoration—as a backbone for valuable ecosystem services in urban- and peri-urban areas becomes even more critical. At the national consultation for the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028 in November 2013, it was apparent that the scope of biodiversity in the city is not as clearly defined as biodiversity in non-urban areas. The status, trends, and threats to urban biodiversity are also not well known and understood. Unlike other ecosystems such as forests, agriculture, coastal and marine, urban areas—whether metropolitan areas, cities or towns—do not appear exclusively in biodiversity literature nor feature prominently in conservation discussions. The PBSAP identified urban biodiversity as one of its new priority thematic areas. Efforts in response to this target and indicator have been started through some current actions such as the Green Building Code adopted by some Local Government Units (LGUs), which puts value on green spaces. BERDE (Building for Ecologically Responsive Design Excellence), a green building rating system developed by the Philippine Green Building Council, recognizes the value of land and ecology, and puts premium on respect and

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sensitivity to ecology and heritage. The Enhanced CLUP Guidelines Volume 2 issued by the Housing and Land Use Regulatory Board (HLURB), discussed more extensively under Target 13, provides guidelines for mainstreaming biodiversity into local development planning. The Local Government Support Fund also provides assistance to cities that are part of “Green, Green, Green Program” of the Philippine Department of Budget and Management. The Program intends to provide start-up funds for city governments to establish pocket forest parks, arboretum and botanical gardens, or enhance public parks to serve not only as green open spaces for aesthetics and relaxation but more importantly as natural catchment and flood mitigation measures. This Program provides opportunity for the DENR-BMB to influence the selection of proposals submitted by city governments by including of urban biodiversity as one of the criteria for the selection and funding of proposals. The National Urban and Housing Development Framework (2017-2028) identified sustainable urban environment as one of its key framework principles, and recognized the need to protect ecosystems and urban biodiversity. It also recognized the value of urban green spaces, and the essential roles of local governments in the protection and management of green spaces. Further, a guideline on Public Parks and Open Spaces has also been recently developed for the planning, design and development of sustainable public open spaces.

The DENR- Biodiversity Management Bureau (BMB) has also embarked on activities to address this new focus area. From 2014 to 2017, it engaged in various public information campaigns and technical discussions to highlight the importance of urban biodiversity and to reintroduce the use of the CBI to assess and monitor the state of urban biodiversity in cities. In 2017, it drafted a Technical Bulletin prescribing procedures for the assessment of urban biodiversity to guide DENR Offices in assisting LGUs in assessing biodiversity in built-up areas .

The DENR-BMB, in collaboration with its Regional Offices and the LGUs of Quezon, Manila and Caloocan in Metro Manila, Cebu and Davao, is currently engaging the five largest cities in the country in the assessment of biodiversity and the application of the CBI in these cities. The results of these assessments are expected to help set the baselines for monitoring of progress towards increasing by 5% by 2028, the proportion of green spaces in these cities. Green space refers to “land that is partly or completely covered with grass, trees, shrubs, or other vegetation. Green space includes parks, community gardens, and anthropogenic green spaces such as roof garden, roadside planting, private gardens, and urban parks.” There are already existing green spaces in these cities, however there is a lack of data on the total area of green spaces to total land area.

Other cities have reported various green spaces in their areas and efforts to green their cities. Parish and school-based pocket forests, vegetable gardens, herbaria, greenbelts and roadside planting, vertical gardens, tree parks, and replacement of exotic tree species with endemic species are among the approaches done to green urban areas. Information on green space needs to

be reflected in the land use and development plans of cities and municipalities, if we are to measure progress in increasing the proportion of green spaces. The CBI can be used as a monitoring tool to measure and monitor green spaces. However, green space as defined in BMB Technical Bulletin 2018-02 needs to be clearly understood due to the broad coverage of “land that is partly or completely covered with grass, trees, shrubs, or other vegetation”. Stakeholders also identified the need for technical training on biodiversity and the use of the CBI, the use of endemic and/or indigenous species in urban parks, and incentives for development projects that allocate green spaces. In summary, baseline information on the total area of green spaces in the five largest cities needs to be established in order to monitor any increase in green spaces. The use and adoption of the CBI also needs to be closely monitored, starting with those city who have piloted its use (Quezon City, Iloilo City and Puerto Princesa City) and in the cities of Manila, Caloocan, Cebu and Davao.

National Target(s)

TARGET 6: By 2028, there will be a 5% increase in the proportion of green spaces in the five largest cities.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 6. Footnotes.pdf](#)

Other relevant website address or attached documents

[National Urban Development Housing Framework 2017-2022 \(Abridged\).pdf](#)
[Public Parks and Open Spaces - A Planning and Development Guide.pdf](#)
[Technical Bulletin. Procedures in the Conduct of Assessment of Urban Biodiversity.pdf](#)

Improving ecosystems services

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

For Target 7, Indicator A: Amount of estimated carbon stocks in forest areas in the Philippines

As anthropogenic emissions of carbon dioxide continue to increase, the protection of forest ecosystems becomes even more crucial. Forests sequester

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carbon dioxide from the atmosphere, effectively improving air quality and lowering temperatures. In the Philippines, the DENR - Forest Management Bureau reports that nearly 250 million tons of carbon is stored in the country's forests (Table 1).

The implementation of the Philippine Master Plan for Climate Resilient Forestry Development (PMPCRFD) 2015-2028 is expected to contribute to the reduction of carbon emissions and carbon sequestrations. Net carbon benefits from avoided deforestation and new plantations as a result of the implementation of the PMPCRFD is estimated as 302,278,878 million tons.

In 2017, the Philippines' acceded to the Paris Agreement to the UN Framework Convention on Climate Change and committed to shift toward low carbon development through its Nationally Determined Contribution (NDC). The forestry sector contributes from 28% to 35% of the country's mitigation targets primarily through forest protection and management, followed by forest restoration and rehabilitation, and biochar technology.

Various assessments related to carbon data have also conducted by national government agencies, academic and research institutions, and individual experts in various sites, inside and outside protected areas and key biodiversity areas. These data need to be captured, consolidated and mapped, so that forest carbon stocks are monitored accordingly.

National Target(s)

TARGET 7: By 2028, as a result of improved conservation, ecosystem services provided by key biodiversity areas will be enhanced.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 7A. Table and Footnotes.pdf](#)

Improving ecosystem services

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

For Target 7, Indicator B: Number of irrigation systems and water systems for domestic use that are sourced from KBAs and volume and quality of water from these sources

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The Philippines is abundantly endowed with water resources – 421 principal rivers, 18 priority river basins, 216 lakes, and 36,389 km of extensive coastline. These are sources of ecosystems provisioning services, particularly water for various uses, including for irrigation and domestic water systems. The PBSAP 2015-2028 cited reports of substantial groundwater resources along rivers and lakes, however, these resources are threatened by many factors such as deforestation and pollution, which contribute to depletion and degradation of groundwater resources, respectively. The recharge extraction potential of groundwater from these principal rivers and 18 priority river basins is estimated at 20,200 MCM per year.

Many key biodiversity areas (KBAs) are sources of irrigation water. The Philippines has 74 national irrigation systems that are sourced from 44 KBAs. The National Irrigation Administration (NIA) designs, constructs, and oversees the operation and maintenance of all national irrigation systems. The NIA - Upper Pampanga River Integrated Irrigation Systems (UPRIIS) that is sourced from the Casecnan Protected Landscape in Eastern Luzon has the largest service area with 35,118 hectares. Meanwhile, the Bonot-Bonot River Irrigation System (RIS) that is sourced from the Rajah Sikatuna Protected Landscape in Bohol has the smallest service area with 54 hectares (Table 1). There is, however, lack of data on the volume and quality of irrigation water originating from these KBAs.

Figure 1 shows the intersection of these irrigation systems with KBAs and the 18 major river basins in the Philippines. Many of the KBAs are also located within the 18 major river basins, which are a priority of government intervention for integrated river basin management and development.

In terms of domestic water systems, there is also no available data on the number, volume and quality of water originating from these KBAs.

National Target(s)

TARGET 7: By 2028, as a result of improved conservation, ecosystem services provided by key biodiversity areas will be enhanced.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 7B. Tables, Figures, and Footnotes.pdf](#)

Improving ecosystem services

Target 7, Indicator C: Number of sites in KBAs that serve as ecotourism destinations

The Department of Environment and Natural Resources (DENR)-Department of Tourism (DOT) Memorandum Circular 98-02 defines ecotourism as “low-impact, environmentally sound and community-participatory tourism activities in a given natural environment that enhances the conservation of physical and cultural diversity, promotes environmental understanding and education, and yields socio-economic benefit to the concerned community”. This definition was further refined in the National Ecotourism Strategy and Action Plan 2013-2022 and reinforced with DENR Administrative Order 2013-19. Said DAO described ecotourism as a “form of sustainable tourism within a natural and cultural heritage area where community participation, protection and management of natural resources, culture and indigenous knowledge and practices, environmental education and ethics as well as economic benefits are fostered and pursued for the enrichment of host communities and satisfaction of visitors”.

The DENR and DOT, in collaboration with multi-stakeholder groups, have committed to safeguard the country’s natural and cultural heritage, and to share tourism benefit to host communities. These are embodied in the National Ecotourism Strategy and Action Plan 2013-2022 which prioritizes the design and implementation of product development programs targeting ecotourism at key natural heritage sites, and encouraging entrepreneurial communities to implement projects that provide sustainable benefits to their constituents.

Several sites in 59 priority protected areas that are within Key Biodiversity Areas (KBAs) have been identified as ecotourism destinations (Table 1). A map of these destinations is seen in Figure 1. All of these PAs and KBAs are within the Tourism Clusters and Tourism Development Areas (TDA) as identified under the National Tourism Development Plan (NTDP) 2011-2016 and its successor plan NTDP 2016-2022. The cluster destination and TDA strategy uses a spatial development approach that considers market demand, inclusive growth, respect for local boundaries and jurisdictions, and investments. It also provides for prioritization of sites, products and activities.[1]

Based on consolidated reports from protected areas from 2014 to 2017, a total 7,953,553 local and foreign visitors visited, generating a total income of PhP 181,934,966.27 (Figure 2). There were more local tourists than foreign tourists, which could indicate a strong interest of locals in ecotourism. resources.

However, these numbers can be considered as initial results only and may not be reflective of the actual number of visitors and income generated since not

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all protected areas report data regularly. There needs to be a more systematic and standard capture and reporting of visitor data across protected areas to avoid inconsistencies and gaps, and enable full consolidation of data.

Ecotourism success stories were also shared during the regional consultations on the preparation of this Report. In Negros Oriental, communities on Apo Island worked together to implement the Apo Island Community-Based Ecotourism. The local government unit (LGU) shared that ecotourism as a community-based effort gave the communities a sense of ownership and responsibility over Apo Island. This sentiment was echoed by stakeholders from Region 5 who shared that ecotourism activities in Bulusan Lake in Sorsogon and Buntod Reef Marine Sanctuary and Sandbar in Masbate City also provided the residents of these areas alternative sources of livelihood and increased their incomes. Another noteworthy project was the Spark Samar initiative which was launched in 2015 by the Samar province LGU. Spark Samar is a sustainable tourism campaign that showcases the natural resources of the province such as caves and river rapids and the works of artisan banig weavers.

Despite these successes, stakeholders recognize that much can still be done to boost the ecotourism industry. Technical support for ecotourism development plans, especially on payment for ecosystem services, is highly needed. This includes scientific research (hydrological assessment, biodiversity assessment, carbon stock assessment, wastewater management, among others), capacity building and trainings for tour guides, and marketing campaigns. Partnerships with the private sector, academe, civil society organizations, and continued support and funding from the government are also needed.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 7C. Figures, Tables, and Footnotes.pdf](#)

Improving ecosystems services

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

For Target 7, Indicator D: Number of IP communities with identified sacred places and/or Indigenous Community Conserved Areas ICCAs within Key Biodiversity Areas (KBAs)

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An Indigenous Community Conserved Area (ICCA) is defined as a globally applicable governance type for areas and territories under customary management. ICCAs are defined by the International Union for Conservation of Nature (IUCN) as “natural and/or modified ecosystems containing significant biodiversity values, ecological services and cultural values, voluntarily conserved by indigenous peoples and local communities, both sedentary and mobile, through customary laws or other effective means”. [1] ICCAs may be sacred spaces or ritual grounds, such as sacred forests and mountains, indigenous territories and cultural landscapes or seascapes; territories and migration routes of nomadic herders or mobile indigenous peoples; sustainably managed wetlands, fishing grounds and water bodies; or particularly sensitive ecological settings, such as sacred areas on the mountain and hilltops. [2] ICCAs in the Philippines include sacred sites and natural features, indigenous territories, cultural landscapes and seascapes. They are the repository of the country's natural wealth and biological resources, and provide resources and livelihood, and a variety of environmental services. [3] The indigenous ways of life, sustainable use of natural resources, and close interactions with the environment have all contributed to biodiversity conservation in their areas. [4]

Nearly 80% or 1.44 million hectares of all officially recognized ancestral lands/ domains and indigenous territories in the Philippines are located within critical watersheds and protected areas, and 29% of KBAs are within ancestral lands/ domains [5]. Figure 1 shows the overlap of ICCAs, Protected Areas and Key Biodiversity Areas.

Under the UNDP/GEF-DENR Project on Expanding and Diversifying the National System of Terrestrial Protected Areas in the Philippines (NewCAPP) implemented by the Department of Environment and Natural Resources from 2010-2015, new conservation areas such as ICCAs were recognized as an opportunity to accelerate expansion of terrestrial systems in the country. A rapid survey of ICCAs done in 2011 listed 197 ICCAs in 14 ecosystem types in the country subject, however, to further validation. [6]

Under this Project, six ICCA pilot sites covering a total of 80,000 hectares were established. These include: 1) Menuvu tribe in Mt. Kalatungan National Park, Bukidnon; 2) Ayta tribe in Cabangon, Zambales KBA; 3) Buhid Indigenous Peoples in Mts. Iglit Baco National Park/Mindoro KBA; 4) Banao and Balatok tribes in Banao Watershed (Balbalasang-Balbalan National Park in Cordillera Administrative Region); 5) Dumagat Remontados in Mts. Irid Angelo in Region 4A; and, 6) Mamanwa Indigenous Peoples in Surigao (Mt. Hilong Hilong KBA). A total of 50,006 hectares of ICCAs were documented with 9,297 hectares from three sites (Mt. Kalatungan, Mt. Hilong-hilong, and Cabangon) formally registered at the global ICCA registry of the UNEP-WCMC as of 2015. [7]

Building on the gains of NewCAPP, a follow through project, the UNDP/GEF-

DENR Project on Strengthening National Systems to improve Governance and Management of Indigenous Peoples Community Conserved Territories and Areas (Philippine ICCA Project) is being implemented by the DENR from 2015 to 2019. The Project intends to strengthen the conservation, protection and management of KBAs in the country by institutionalizing ICCAs as a sustainable addition to the national protected area estate.

As of 2018, a total of 283,184.324 hectares have been documented with additional 17,961 hectares from two sites (Caraga and Mts. Iglit-Baco) formally registered with the global ICCA registry.[8]

Table 1 shows the list of ICCAs in the Philippines as of June 2018.

Stakeholders from the regional consultations highlighted the importance of the triple bottom line effect - economy, environment, and community - when ensuring that the rights of indigenous peoples are respected. Local communities are keen on working with indigenous peoples and forging partnerships, but ongoing boundary conflicts have made it difficult to pursue initiatives that benefit the local governments, communities and indigenous peoples. It is hoped that coordination among the members of the National Commission on Indigenous Peoples (NCIP), concerned Local Government Units and indigenous peoples will lead to the speedy conciliation, processing and issuance of Certificates of Ancestral Domain Titles. Information sharing and coordination with the NCIP also needs to be improved so that indigenous peoples may be provided with other livelihood interventions.

National Target(s)

TARGET 7: By 2028, as a result of improved conservation, ecosystem services provided by key biodiversity areas will be enhanced.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 7D. Figures, Tables, and Footnotes.pdf](#)

Improving ecosystems services

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

The fisheries sector provides significant contribution to the economy through employment, export revenues, and food to support a burgeoning population.

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However, the country's fisheries resources continue to face degradation and depletion. In order to address this threat, there is a need to strike a balance between environmental sustainability and economic viability, and develop and implement proactive interventions based on evidence presented from national and local stock assessments.

In 2009, the 4th National report to the CBD published the first map of fisheries exploitation ratio in major fishing grounds. The map was generated by the National Stock Assessment Program (NSAP) of the Department of Agriculture-Bureau of Fisheries and Aquatic Resources - National Fisheries Research and Development Institute (DA-BFAR-NFRDI) from its monitoring of commercial and municipal landings at strategic ports in major fishing grounds nationwide. The assessment showed that 10 out of 13 major fishing grounds in the country experienced overfishing. High extraction patterns were observed in Lingayen Gulf, Babuyan Channel, Northern Zambales, Lagonoy Gulf, Sorsogon Bay, Visayas Sea, Camotes Seas, Honda Bay, Hinatuan Passage and Davao Gulf.[1][2] Knowledge of the status of these areas are important for policy and decision-makers, and more importantly for fisherfolks and fishing enterprises so that they can respond accordingly.

In 2017, the BFAR-NFRDI published the NSAP: Philippine Capture Fisheries Atlas which provides evidence-based data on the location, distribution, abundance, size and species composition of major capture fisheries resources in major fishing grounds (Figure 1). Using 2014 data, the NSAP recorded actual total catch production of aquatic species clustered by groups, namely: oceanic tuna, neritic tuna, small pelagic species, other pelagic species, other large pelagic species, demersal species, sharks and rays and invertebrates. Exploitation values were also generated using the NSAP landed catch, effort and length data for 2015 and the Food and Agriculture Organization- International Center for Living Aquatic Resources Management (FAO-ICLARM) Stock Assessment Tool.

Actual catch showed a total of 1,657,576 metric tons (mt), with Region XII (566,131 mt) Region VI (283,855 mt) and Region IX (190,820) as the top three regions for actual catch (Figure 2). Actual total effort in terms of the number of boats landed showed more landings in Region V (128,085), Region IV-A (89,556) and Region III (67,197) (Figure 3). Catch per unit effort (kg/day/boat) showed more catch in Region 1 (4.165), Region IV-B (2,060) and Region VII (2,005) (Figure 4). NSAP records indicated that some typhoon path areas (Batanes, Northern Philippines), areas with armed conflicts (Jolo, Sulu), and areas with seasonal fishing closure (Northern Palawan, Davao Gulf and Zamboanga Peninsula) generally showed better stock status compared to the other fishing grounds in the country. A full report on the abundance and biomass of fish species recorded per is reflected in the 2017 NSAP: Philippine Capture Fisheries Atlas.[3]

Exploitation rates of selected species in various fishing grounds using 2015

baselines were also used as reference points to assess, monitor and evaluate the status of fish stocks relative to fishing pressure. The results suggest that most of the Philippine traditional fishing grounds continue to be exposed to unsustainable fishing practices, brought about by increasing fishing effort and more efficient fishing gears.[4]

The conduct of stock assessment programs, strict enforcement of open and closed season in fishing, and establishment of no fishing zones in marine sanctuaries are just some of the efforts aimed at maintaining the country's economically important fish stocks. However, stakeholders report that despite the observance of these activities and regulations, illegal fishing practices continue. Several communities are also unable to conduct regular stock assessments.

Insufficient budget allocation for the integration of fisheries resources management into national and provincial development plans has made it difficult to monitor fish catch and landing sites. Management programs among LGUs with common fishing grounds also need to be harmonized.

National Target(s)

TARGET 8: By 2028, fish stocks of economically important species will be maintained.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 8. Footnotes.pdf](#)

Other relevant website address or attached documents

[National Stock Assessment Program: The Philippine Capture Fisheries Atlas](#)

Addressing human well-being

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

Republic Act No. 10771 or the Philippine Green Jobs Act was enacted in 2016 to affirm labor as a primary social economic force in promoting sustainable development and to promote the rights of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature. As defined by the Act, "green jobs refer to employment that contributes to conserving or restoring the quality of the environment, be it in the agriculture, industry or

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services sector. Specifically, but not exclusively, these include jobs that help to protect ecosystems and biodiversity, reduce energy, materials and water consumption through high efficiency strategies, decarbonize the economy, and minimize or altogether avoid generation of all forms of waste and pollution.”

Biodiversity conservations-related jobs have been identified in several sectors, particularly those related to ecosystem restoration, ecotourism, and sustainable agriculture. However, calculating the number of people employed in biodiversity conservation-related jobs remains challenging. There is a need to define biodiversity conservation-related jobs, decide on a fair income for these jobs, and identify the data sources for baseline data.

Based on available data, information on jobs generated through the National Greening Program (NGP), the Biodiversity Partnerships Program (BPP), and the Coastal and Marine Ecosystems Management Program (CMEMP) are presented here.

The DENR-FMB reported that from 2014 to 2017, a total of 3,420,383 jobs have been generated and 474,426 persons have been employed by the NGP (Figure 1).

In the ecotourism and other resource-based industries, a total of 1,335 persons were employed across 15 terrestrial and marine protected areas, based on 2015 data.[1] These jobs include tour-guiding (658) and provision of transport services (677), either on full time or part time basis.

Under the UNDP/GEF-DENR BPP, partner government agencies, private sector, and civil society organizations provided assistance to community organizations and opened networking opportunities for biodiversity-friendly enterprises (BDFE) through trade shows and fairs.[2] In Cagayan Province, the Department of Trade and Industry (DTI) supported the Bakong Enterprise of the Laguna de Cagayan Handicrafts Organization through skills training and the provision of handloom machines. The bakong plant (*Hanguana malayana*) is considered a pest in the Laguna de Cagayan Lake, but residents have found a way to use plant fibers to craft baskets, gift items, and housewares.[3] The products of Bakong Enterprise have since made their way to various trade expos and fairs through Manila FAME (a premier trade show for buyers who want to source high-quality, design Philippine products), the BPP Investment Forum, and the International Food Exhibition (IFEX). More details on other successful BDFEs are found in Annex 1. However, data available does not indicate the number of jobs generated or persons employed.

CMEMP is another DENR project that championed BDFEs and implemented within National Integrated Protected Areas System (NIPAS) areas. Jobs generated were in the manufacturing, service, and ecotourism sectors. The products from these BDFEs range from textiles, food products, pharmaceuticals, and handicrafts (Annex 2).

Biodiversity conservation-related jobs and sources of data need to be clearly defined. A database on baselines and annual increases in the number of people employed in biodiversity conservation-related jobs also needs to be established and monitored closely. There are many agencies and sectors involved in the generation of these jobs (Department of Environment and Natural Resources, Department of Tourism, Department of Agriculture (DA)-Bureau of Fisheries and Aquatic Resources, DA- Agricultural Training Institute, Department of Trade and Industry, Department of Labor and Employment, Local Government Units, private sector). Their roles and responsibilities have to be clearly defined too.

National Target(s)

TARGET 9: By 2028, there will be an annual increase of at least 5% in biodiversity conservation related jobs (ecotourism, sustainable agriculture, ecosystem restoration).

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 9. Figure and Footnotes.pdf](#)

Reducing threats to biodiversity

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

For Target 10, Indicator A: Number of invasive alien species (IAS) hotspots
One of the major drivers of biodiversity loss in the Philippine is the introduction and spread of invasive alien species (IAS), defined as “species introduced deliberately or unintentionally outside their natural habitats where they have the ability to establish themselves, invade, out-compete natives and take over the new environments”[1]. If left unchecked, IAS can decimate or diminish populations of native species.
IAS like the janitor fish (*Pterygoplichthys* spp.), knifefish, (*Chitala* sp.), giant catfish and black bass, marine toad (*Bufo marinus*), American bullfrog (*Rana catesbeiana*), leopard frog (*Rana tigrina*), water fern (*Salvinia* sp.), water hyacinth (*Eicchornia crassipes*), and golden apple snail (*Pomacea canaliculata*) have been recorded in inland wetland areas. In terrestrial areas, buyo-buyo (*Piper aduncum*), a highly aggressive shrub that invades agricultural areas and natural forests, mahogany (*Swietenia microphylla*), Yemane (*Gmelina arborea*), coronitas (*Lantana camara*), and hagonoy (*Chromolaena odorata*), have been recorded.[2] Experimental control of *P. aduncum* has also been initiated in the priority pilot area in Allah Valley Watershed Forest Reserve in Lake Sebu. Results have shown that the application of low concentration chemicals coupled with restoration were more effective in eradicating *P. aduncum* in the area.[3]

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Some protected areas have already been affected by the introduction of IAS. In Naujan Lake National Park, the Nile tilapia (*Oreochromis niloticus*) is believed to have displaced the native species mullet/banak (*Liza froscheli*). In Mt. Isarog Natural Park, its inland wetland areas have also been invaded by exotic species such as tilapia and hito which have displaced endemic species such as talusog and kauli and caused a decline in their annual catch. [4]

From 2011 to 2016, the Philippines received technical assistance under the UNEP/GEF Project on Removing Barriers to Invasive Species Management in Production and Protection Forests in Southeast Asia. The aim of the project was to manage Philippine forests and biodiversity by reducing the negative environmental, economic, and human health consequences of IAS. One of the major results of this project was the establishment of a national policy and institutional framework for managing IAS in the country. In 2016, the Philippines released its National Invasive Species Management Strategy and Action Plan (NISSAP) 2016-2026 to serve as a roadmap in preventing the introduction and spread of invasive species and in reducing their impacts on biodiversity.

Six protected areas (Bataan National Park, Agusan Marsh Wildlife Sanctuary, Sibalom Natural Park, Samar Island Natural Park, Mts. Banahaw-San Cristobal Protected Landscape, and Mt. Hamiguitan Range Wildlife Sanctuary) were surveyed for IAS and served as pilot sites for the prevention, control, and management of IAS. Thirty nine invasive species were documented inside and around these PAs (Table 1).

Stakeholders from the regional consultations reported that, among individuals that work in the environment sector, there is an awareness of the impact that IAS can have on native species. However, majority of the members of local communities remain unaware of these impacts and continue to plant and culture species such as mahogany and tilapia because of their economic importance. Furthermore, the lack of baseline data on IAS in some of the regions has made it challenging to assess the extent of the impact of these IAS. This has consequently made it difficult to develop targeted and impactful initiatives that address IAS.

Despite these hurdles, awareness of the impact of IAS continues to grow. In Negros Occidental, the replacement of invasive and non-native tree species with endemic species is already underway, while several provinces in Ilocos Region have also begun to gather baseline data on IAS. It was noted that all stakeholders during the consultations cited that technical experts on IAS for baseline data gathering, awareness campaigns, and strong enforcement action is needed to successfully address the problem of IAS.

It is hoped that the full implementation of the six strategies of the NISSAP 2016-2026 (Policy and Institutional Support, Leadership and Coordination, Research and Information Management, Education and Public Awareness, Training and Capacity Building, and International Cooperation) will prevent, detect early, eradicate, and control IAS, and restore affected habitats.

For Target 10, Indicator B: Number of coastal and fresh surface water systems in KBAs that pass the minimum criteria for water quality under the provisions of DAOs 34 and 35

Republic Act 9275 or the Philippine Clean Water Act of 2004 tasks the Department of Environment and Natural Resources (DENR) and the National Water Resources Board (NWRB) to identify water quality management areas (WQMA) using the appropriate physiographic units such as watershed, river basins, or water resources regions.[5]

The designation of WQMAs ensures that the water quality of water bodies and

their tributaries meet the Water Quality Guidelines or Criteria appropriate to the water body's classification. The DENR-Environmental Management Bureau (EMB) classifies these water bodies according to their beneficial use and differentiates between the usage of fresh and marine water bodies (Tables 2 and 3). The water quality is assessed based on the set beneficial use as defined in DENR Administrative Order (DAO) No. 2016-08 (Water Quality Guidelines and General Effluent Standards).

These classifications categorize the water bodies while considering the existing and most beneficial future use of the water bodies and the lands bordering them for residential, agricultural, aquacultural, commercial, industrial, navigational, recreational, wildlife conservation and aesthetic purposes, among others. On the other hand, beneficial use considers the advantages of the use of the environment to public or private welfare, safety, and health. These include the use of water for domestic, municipal, irrigation, power generation, fisheries, livestock raising, industrial, recreational, and other purposes.[6]

The DENR-EMB has implemented various programs with objectives to improve the water quality of water bodies thereby increasing its benefits to the consuming public. Two of these programs are the Sagip Ilog Program and the Adopt-an-Estero Waterbody Program.

The Sagip Ilog Program aims to improve the water quality of 19 priority rivers in the country by ensuring that Biological Oxygen Demand (BOD) and Dissolved Oxygen (DO) levels comply with DAO No. 34 or the Revised Water Quality Criteria. However, as of 2016, only 6 out of the 19 priority rivers or 31% passed the 5.0 mg/L Dissolved Oxygen (DO) criterion while only 7 or 37% passed the 7.0 mg/L BOD criterion (Table 4).[7]

On the other hand, the Adopt-an-Estero Waterbody Program encourages private establishments/institutions, NGOs, or industry associations to enter into a Memorandum of Agreement (MOA) and serve as the major actor in cleaning esteros in the Philippines. Donor partners may select an estero or waterbody of their choice and may collaborate with other establishments to clean the entire stretch of the estero. The DENR-EMB reported that, from 2012 to 2016, 89 waterbodies had shown water quality improvements in terms of DO and 68 had shown water quality improvement in terms of BOD. As of 2016, sixty four (64) new esteros/waterbodies (4 in each region) were adopted, bringing the total number of adopted esteros to 456.[8]

Aside from these adopted esteros, as of 2018, the DENR-EMB has also already classified 791 water bodies, and targets to classify 228 more water bodies. It is expected that there will be 1,019 water bodies classified by the end of 2019. Additionally, there are 37 officially designated Water Quality Management Areas (WQMAs), including the areas within the jurisdiction of the Laguna Lake Development Authority (LLDA) which was designated as one management area by virtue of the Clean Water Act. The River Basin Control Office (RBCO) also identified 18 priority river basins in the country. These river basins cover a total area of 108,678 km² equivalent to 36.2% of the total land area of the Philippines (Table 5, Figure 1).[9]

At the local level, stakeholders reported that much can still be done to improve the water quality of water bodies in the regions. This is because monitoring of water bodies is irregular as monitoring activities have yet to be institutionalized. There is also a need for tools and experts in geomatics to aid monitoring activities. However, there are certainly efforts to ensure that water quality in the regions are maintained or improved. Stakeholders from Negros Oriental shared that a Septage Treatment Facility has been established in Dumaguete and Bayawan with plans for more of these facilities to be

constructed in other LGUs. DENR-EMB-Region 5 also shared the region's identified WQMAs and the ongoing ambient water quality management programs these areas (Figure 2).

For Target 10, Indicator C: Number of agricultural, including fisheries, expansion hotspots in KBAs

There is no data available to determine the number of agricultural, including fisheries, expansion hotspots in Key Biodiversity Areas.

For Target 10, Indicator D: Number of energy production and mining hotspots in KBAs

The Philippines is rich in mineral resources and is a significant producer of gold, copper, nickel and chromite, and of non-metallic and industrial minerals such as marble, limestone, clay, feldspar and aggregates. However, mining has historically been associated with negative environmental impacts that threaten ecosystems integrity and human health, if not managed responsibly.

The country's mineral resources are in areas that are also rich in biological resources that sustain lives and livelihoods. Mining claims and rights overlap with defined areas for PAs, ancestral lands, and conservation areas, and are thus in conflict with prescribed land uses and management objectives.[10]

In 2012, Executive Order 79 was passed providing guidelines to ensure environmental protection and responsible mining, and identified areas closed to applications for mineral contracts, concessions, and agreements. Areas closed to mining applications include: a) areas expressly enumerated under Section 19 of Republic Act (RA) No. 7942; b) protected areas categorized and established under the National Integrated Protected Areas System (NIPAS) under RA No. 7586; c) prime agricultural lands, in addition to lands covered by RA No. 6657, or the Comprehensive Agrarian Reform Law of 1988, as amended, including plantations and areas devoted to valuable crops, and strategic agriculture and fisheries development zones and fish refuge and sanctuaries declared as such by the Secretary of the Department of Agriculture (DA); d) tourism development areas, as identified in the National Tourism Development Plan (NTDP); and, e) other critical areas, island ecosystems, and impact areas of mining as determined by current and existing mapping technologies, that the DENR may hereafter identify pursuant to existing laws, rules, and regulations, such as, but not limited to, the NIPAS Act.[11]

Figure 3 shows the location of mining tenements that intersect with protected areas and Key Biodiversity Areas (KBAs) but does not indicate if these are hotspot areas.

Stakeholders from the regional consultations, however, reported that in some protected and locally conserved areas, local resolutions have been passed opposing magnetite mining, among others. In addition, mining activities (including small-scale mining) have also affected river bodies and coastal areas. Stakeholders recommended to strengthen enforcement and monitoring, provide technical experts, adequate funds and equipment to address concerns associated with mining operations.

In 2017, discussions began on integrating biodiversity in mining operations. Through a series of experts' meetings and workshops participated in by academic institutions and relevant government agencies such as the DENR-Mines and Geosciences Bureau, Biodiversity Management Bureau and Environmental Management Bureau, it was recommended that biodiversity concerns should be addressed at all stages of mining operations - from prospecting, exploration, development, exploitation and rehabilitation/reclamation. A DENR Administrative Order has been drafted on Enhancing Biodiversity Protection and Conservation on Mining Operations to ensure the

inclusion of appropriate biodiversity protection, conservation and restoration measures in the Environmental Compliance Certificate (ECC), Environmental Work Program (EWP), Environmental Protection and Enhancement Program (EPEP) and Final Mine Rehabilitation/Decommissioning Plan (FMR/DP) or any environmental and social development program or plan, of all existing mining applications and approved mining tenements, patents, permits and contracts. Aside from mining, energy production activities and infrastructure have also been reported within protected areas and KBAs. Based on initial data from the DENR- Biodiversity Management Bureau, hydro-electric and coal-fired power plants are present within the Upper Agno River Basin Protected Landscape, Case nan Protected Landscape, Masinloc Oyon Bay Marine Reserve, Pantabangan-Carranglan Watershed Forest Reserve, and Great and Little Sta Cruz Island Protected Landscape and Seascape. There is also no indication whether these areas are also hotspots. However, this list is still incomplete and is being updated.

Stakeholders from the regional consultations, however, reported that the construction of renewable energy resources (e.g. hydropower, wind turbine) have disturbed species and habitats, and recommended to conduct studies on the impact of wind turbines on avifauna. They also recommended to strengthen enforcement and monitoring to address concerns associated with energy development.

A comprehensive database on energy and mining developments within protected areas and KBAs and associated costs and benefits is needed to inform decision-making and subsequent actions.

For Target 10, Indicator E: Number of fuelwood collection hotspots that source raw materials from sustainable sources

For Target 10, Indicator F: Number of illegal cutting of trees hotspots

For Target 10, Indicator G: Number of illegal logging hotspots

Forests are among the most valuable natural resources in the Philippines, providing a variety of goods and ecosystems services such as food, water, wood, recreation, livelihood, and climate regulation. They also serve as home to many plants and animals, and to some 12-15 million indigenous peoples.[12] The forest industry's contribution to the country's Gross Domestic Products in 2017 was recorded at 0.01% and 0.04% at current and constant 2000 prices, respectively, compared to 0.04% and 0.08% at current and constant 2000 prices, respectively, in 2014.[13]

Philippine forest biodiversity, however, continues to face threats, particularly from habitat loss and land use conversion, including overexploitation (legal and illegal logging, mining, wildlife hunting).[14] Pressures from population growth are also expected to increase the demand for forest resources such as fuelwood, wood, major and minor forest products, to meet domestic needs and livelihoods of communities. The increase in fuel prices is likewise expected to increase demand, particularly for fuelwood.[15]

In addressing these threats, the Department of Environment and Natural Resources (DENR) has collaborated with various stakeholders such as Local Government Units, civil society organizations and local communities. These stakeholders participate in forest management programs such as the National Greening Program and other similar programs, in management bodies such as the Watershed Management Councils, Multi-sectoral Forest Protection Committees, Anti-illegal Logging Task Force, Protected Area Management Boards, co-management steering committees, and many others[16], and in law enforcement to help reduce, control and manage pressures on forest biodiversity.

The DENR- Forest Management Bureau (FMB) reported that from 2011 to 2017, the total number of illegal logging hotspots has decreased from 197 in 2011 to 22 in 2017 (Table 6).

Based on consolidated regional reports submitted to FMB, these illegal logging hotspots were recorded in specific provinces and municipalities in Regions I (Pangasinan), II (Isabela, Cagayan), III (Aurora), IV-B (Palawan), VI (Iloilo, Capiz), XI (Davao Oriental, Compostela Valley) and XIII (Agusan del Sur, Agusan del Norte, Surigao del Sur). The number of hotspots decreased from 12 provinces and 31 municipalities in 2011 to 2014, to nine provinces and 22 municipalities in 2017. Hotspots in the provinces of Iloilo, Capiz and Agusan del Norte were reportedly neutralized.[17] Observed and recorded apprehensions by the DENR using LAWIN Forest and Biodiversity Protection System (LAWIN) showed that as of June 2018, a total of 17,861 board feet of wood were seized (7,348 board feet in 2017 and 10,513 board feet in 2018) in these hotspots, including in the Cordillera Administrative Region, Regions 8 and 12. Over and above this total, there were also 4,296 pieces of wood seized with no declared volume recorded.[18] Data on hotspots for fuelwood collection and illegal cutting remain lacking. Figure 4 shows the location of illegal logging hotspots and their overlap with protected areas and Key Biodiversity Areas.

LAWIN is a monitoring and reporting system that was launched in 2016 through the assistance of the USAID-funded Project on Biodiversity and Watershed Improved for Stronger Economy and Ecosystem Resilience. It uses open-source technology, CyberTracker and SMART (Spatial Monitoring and Reporting Tool), to collect and generate information on the state of a forest ecosystem in terms of forest condition, threats and wildlife. These provide decision-makers with a basis for identifying and implementing adequate responses for addressing threats.[19] Aside from DENR staff, environmental law enforcers from mainstream law enforcement agencies such as the Philippine National Police and multi-sectoral groups such as the Multi - sectoral Forest Protection Committee, Municipal/City or Provincial Anti - Illegal Logging Task Forces, and site-based Environmental Law Enforcement task forces can also be deputized as patrollers and can record observations and evidences, etc. in the CyberTracker app.[20] Data from LAWIN are currently being used by DENR to respond to observed threats.

In protected areas, the Biodiversity Monitoring System (BMS) is being used to collect manual data on natural biological resources and their uses. In 2018, the integration of LAWIN and the BMS was pilot-tested in Bataan Natural Park. Currently, the operations manual of the electronic BMS is being formulated to be incorporated in the existing LAWIN operations manual to guide DENR staff involved in the conduct of LAWIN and electronic BMS patrols. A Technical Bulletin is being drafted in order to institutionalize the integration of the electronic BMS with the LAWIN system and the adoption of the electronic BMS to better monitor biodiversity and threats in protected areas.

Results of stakeholder consultations reveal that there are many interventions, albeit fragmented, to reduce and control threats from illegal fuelwood collection, illegal logging, and illegal cutting of trees. Some stakeholders report that agroforestry and production areas for charcoal and fuelwood have been allocated and developed, law enforcement efforts have been strengthened and intensified, multi-stakeholder partnerships have been forged, and communities have been informed and empowered. Some development partners have also contributed to protect Philippine forests from threats by supporting projects that improve the management of forest land and building community-level enterprises. Pursuant to its mandate, however, DENR continues to lead these

efforts in collaboration with its many partners.

But more needs to be done. Stakeholders also identified obstacles to monitoring and addressing threats. These include lack of manpower, including enforcers to patrol forest areas; lack of logistics for enforcement such as vehicles for mobility; lack of technical experts such as on species identification; and, insufficient funds. In addition, there is a need to improve data capture and information management in relation to hotspots of illegal fuelwood collection and illegal cutting of trees.

For Target 10, Indicator H: Number of hotspots for hunting and poaching of wildlife

Republic Act No. 9147 or the Wildlife Resources Conservation and Protection Act was passed in 2001 to conserve the country's wildlife resources and their habitats for sustainability. The Act has made it unlawful to willfully and knowingly exploit wildlife resources through several actions, such as: collecting, hunting or possessing wildlife, their-by products and derivatives, trading and transporting wildlife, unless covered by appropriate permits allowable by law. It has also set penalties for illegal acts ranging from fines ranging from Php10, 000 to Php1 million and/or imprisonment from six months to 12 years.[21]

Despite the passage of the law and issuance of relevant policies, rules and regulations, threats to wildlife resources continue. The government has stepped up its wildlife law enforcement action through inter-agency collaboration in the law enforcement chain, which led to significant curtailment of illegal activities on wildlife throughout the country. However, there is yet room for improvement. A Wildlife Law Enforcement Action Plan (WildLEAP) 2018-2028 has been formulated through a multi-stakeholder consultation process, to fight against illegal activities against wildlife, especially for those species falling under the jurisdiction of the DENR. It sets out to clarify roles and responsibilities of local and national agencies in addressing poaching, smuggling and illegal trade of threatened flora and fauna, especially of endemic species.[22]

As the country guards against encroachment of poachers within its territory, it also has to guard its many seaports and airports against illegal wildlife trade (IWT). IWT has also been identified as a direct threat to populations of wild fauna and flora, contributing to biodiversity loss in the country. The Philippines is a known transshipment and destination point for IWT. Figure 5 shows the wildlife crime hotspots in the Philippines. These hotspots include major poaching sites and flora confiscations sites; major destination, transshipment and confiscation sites of wild fauna; and primary transshipment points and confiscation sites of wild fauna from Indonesia.

Recent developments have also led to the creation in 2016 of an Intergovernmental Task Force on Illegal Taking and Trade of Migratory Birds, which aims to end the illegal killing, taking and trade of migratory birds along the East Asian-Australasian Flyway, the Philippines included. Other recent initiatives addressing poaching and illegal wildlife trade are the USAID-funded Protect Wildlife Project (2016-2021) and the ADB/GEF-DENR Project on IWT: Combatting Environmental Organized Crime in the Philippines (2018-2021). Protect Wildlife is addressing human-induced threats such as poaching and trafficking of wildlife, destructive fishing practices, and loss of habitats from widespread conversion of forests, wetlands, and mangroves to settlements and agricultural lands in Palawan, Zamboanga City, South Cotabato and Tawi-Tawi. The IWT Project, on the other hand, will combat environmental organized crime in the Philippines through legal and institutional reform, capacity building in the

law enforcement chain, and demand reduction measures in Metro Manila, Butuan and Cebu.

For Target 10, Indicator 1: Number of hotspots of illegal fishing practices

One of the key threats to biodiversity is illegal fishing[1] which is believed to be widespread, but its actual magnitude remains to be quantified[2]. Illegal fishing refers to activities that are: a) conducted by national or foreign vessels in waters under the jurisdiction of the Philippines without its permission, or in contravention of its laws and regulations; b) conducted by vessels flying the flag of the Philippines or other States that are parties to a relevant regional fisheries management organizations (RFMO) but operate in contravention of the conservation and management measures adopted by that organization (by which the said States are bound) or relevant provisions of the applicable international law; or, c) in violation of national laws or international obligations, including those undertaken by the Philippines and other cooperating States to a relevant RFMO.[3] This definition follows that of Illegal, Unreported, Unregulated Fishing (IUUF) in the International Plan of Action (IPOA) to Prevent, Deter, and Eliminate IUUF. The IPOA-IUU is a voluntary instrument that applies to all States and entities and to all fishers, and aims to prevent, deter and eliminate IUUF by providing all States with comprehensive, effective and transparent measures by which to act, including through appropriate RFMOs established in accordance with international law.[4]

The Philippine Fisheries Code prohibits acts related to fishing and exploitation of aquatic resources such as unauthorized fishing (fishing without license, lease or permit); poaching; fishing using explosives, noxious/poisonous substances and electricity; use of fine mesh nets; use of active gear in municipal waters, bays and other fishery management areas; coral exploitation and export; fishing using methods and gears destructive to coral reefs; illegal use of superlights; fishing in fishery reserves, refuges and sanctuaries; and fishing/taking of rare, threatened or endangered species.[5]

The Philippine government has continued to make progress to deter and prevent IUUF through its pursuit of legal, administrative and budgetary reform to address IUUF and its drivers. In 2013, it adopted the National Plan of Action (NPOA) through Executive Order No. 154 signed by then President Benigno Aquino Jr. which created the Inter-agency Philippine Committee against IUUF mandated to ensure the implementation of the NPOA-IUU, to provide policy guidance and to develop capacity-building programs. Initiatives under the NPOA-IUUF are aligned with international and regional agreements and plans such as the IPOA-IUUF. Other reforms include acquisition of a fully functional vessel monitoring system and patrol crafts to aid in fisheries monitoring control and surveillance.

The Department of Agriculture-Bureau of Fisheries and Aquatic Resources also uses the Visible Infrared Imaging Radiometer Suite (VIIRS) Night Light Boat Detection as a tool for combatting illegal fishing and protecting marine biodiversity. VIIRS of the National Oceanic and Atmospheric Administration (NOAA) is a satellite sensor that can detect fishing boats that employ lights to attract catch. Data collected by VIIRS are essential for those working on fisheries management, enforcement, monitoring, and surveillance. These data have been used to examine the effectiveness of seasonal fishery closures in the Philippines.

In 2015, Republic Act (RA) 10654 or an Act to Prevent, Deter and Eliminate

IUUF was passed, amending the Philippine Fisheries Code of 1998 or RA 8550. The amended Fisheries Code added IUU fishing as an offense and increased the sanctions and penalties for violations.

Figure 6 shows the hotspot areas of illegal fishing in 2016, particularly intrusion of commercial fishing vessels in municipal waters, hulbot-hulbot operations, blast/cyanide/electro fishing and poaching. These hotspot areas serve as the baseline of anti-IUUF operations of the Department of Agriculture- Bureau of Fisheries and Aquatic Resources who is mandated to prevent, deter and eliminate IUUF. Currently, the DA-BFAR is updating its list of hotspot areas. Stakeholders in the regional consultations shared that inter-agency collaboration for enforcement and visibility of law enforcers are important to address IUUF, however more manpower (enforcement officers), logistical support (e.g. patrol boats, two-way radios) and capacity building are needed. Some stakeholders reported that illegal fishing is still present but reduced.

For Target 10, Indicator J: Number of hotspots for residential and commercial development in KBAs

There is no data available to determine the number of hotspots for residential and commercial development in Key Biodiversity Areas.

National Target(s)

TARGET 10: By 2028, the key threats to biodiversity will be reduced, controlled or managed.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 10. Figures, Tables, and Footnotes.pdf](#)

Other relevant website address or attached documents

[The FORIS Project.pdf](#)

[National Invasive Species Strategy and Action Plan \(NISSAP\) 2016-2026.pdf](#)

Addressing drivers of threats to biodiversity

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

Biodiversity-friendly agricultural practices (BDFAPs) within the context of protected areas (PAs) and key biodiversity areas (KBAs) are defined as practices that use traditional and modern technologies, and agriculture, fishery, agroforestry and multi-cropping management techniques to contribute in the maintenance of ecosystem resilience. They protect biodiversity reserves

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and sanctuaries including agriculture-important species, habitat networks and biological corridors; facilitate regeneration of natural habitat; protect watersheds and wild habitats against conversion to other uses; use low-input or less environmentally damaging systems that reduce soil erosion and water run-off; and adopt the principles of sustainable livestock and poultry production and use of water, and fishery resources. These practices also aim to increase soil fertility and productivity, balance insect population and reduce air, soil and water pollution that affect important habitats of plants and animals.[1] The Department of Agriculture (DA) and the Department of Environment and Natural Resources (DENR) have drafted the Philippine National Standards for BDFAPs, which shall serve as the basis for future recognition and certification system of biodiversity-friendly terrestrial and aquatic farms. Said standards were developed under the UNDP/GEF-DENR Project on Partnership for Biodiversity Conservation: Mainstreaming in Local Agricultural Landscape (BPP) implemented by the DENR from 2011 to 2017. As of this Report, the Department of Agriculture-Department of Environment and Natural Resources Joint Administrative Order on Mainstreaming BDFAPs in and around Protected Areas and Promoting the Same in Wider Agricultural Landscapes, which also mandates the formulation of the national standards, is yet to be approved.

Several farms have been assessed for BDFAPs in the eight pilot sites of the BPP, namely: Quirino Protected Landscape (164,364 has), North Eastern Cagayan KBA (183,430), Northern Negros Natural Park (80,455), Malampaya Sound Protected Landscape and Seascape (200,115), Lake Mainit KBA (14,525), Mt. Hamiguitan Reserve and Wildlife Sanctuary (31,8790), Mt. Siburan KBA (11,569) and Central Panay Mountains (85,658). These farms, ranging from .01 to 1,700 hectares, use a wide range of BDFAPs. These include organic fertilizer production (rice, corn, coffee, cacao, vegetables, fruits); organic fertilizer production (vermiculture, nature farming, fermented plant extracts, zero burning, integration of crop residues into soil, composting of farm wastes, kakawate leaves, rice straws); organic pesticide use (marigold as nematicide, lemon grass rat repellent, red pepper insecticide); contour farming (Sloping Agriculture Land Technology natural vegetative strips or hedgerows with diversified crops); agroforestry (integration of trees with crops, multi-storey using indigenous spp.); cutflower and herb farming using organic technologies; and integrated farming systems (agroforestry with rice, vegetables, fish and livestock).

Across the Philippines, several communities have also switched to biodiversity-friendly agriculture. In Ponong Larena Siquijor, the Siquijor State College has adopted vermiculture technology as a potential livelihood option. The DA - Bureau of Soils and Water Management is set to expand the 5-hectare techno-demo farm in Cuartero, Capiz to 50-hectares for sustainable corn production in sloping areas. There is also a 5-hectare techno-demo farm for sustainable corn production in Northern Mindanao. Other BDFAPs in Northern Mindanao include

the upland farming system implemented by the Mt. Kitanglad Agri-Development Corporation and the Binahon Agroforestry Farm in Bukidnon. In Davao Region, through the Integrated Areas Development Approach Program of the National Commission on Indigenous People, indigenous peoples receive assistance for planting economically important fruit-bearing trees and endemic trees.

Stakeholders from the consultations strongly support the development of information, education and communication campaigns on biodiversity-friendly agriculture to aid farmers in the adoption of new standards and methodologies and, eventually, switch to organic production. They gave importance to research on indigenous agricultural species with potential for food diversity and the need for the regulation of land conversion.

Continuing assessment and inventory of farms is also necessary to enable monitoring of the increase in agricultural areas with BDFAPs. In addition, while many farms have been organically certified in accordance with the provisions of Republic Act 10068 or the Organic Agriculture Act of 2010, these farms may not necessarily follow biodiversity-friendly agricultural principles. Hence, the approval of the joint DA-DENR Administrative Order on Mainstreaming BDFAPs in and around Protected Areas, as well as the Philippine National Standards on BDFAPs, is critical for the assessment, validation and inventory of BDFAP farms to move forward.

[1] Section 4.5 of the Draft Department of Agriculture-Department of Environment and Natural Resources Joint Administrative Order on Mainstreaming Biodiversity-Friendly Agricultural Practices In and Around Protected Areas and Promoting the Same in Wider Agricultural Landscapes

National Target(s)

TARGET 11: By 2028, there will be a 10% increase in agricultural areas devoted to all types of biodiversity-friendly agriculture.

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

Measure taken has been partially effective

Addressing drivers of threats to biodiversity

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

In the Fifth National Report to the Convention on Biological Diversity, the Philippines reported that in 2013 the Department of Environment and Natural Resources (DENR)-Biodiversity Management Bureau (BMB) and the GIZ GmbH commissioned a study on the National Management Effectiveness and Capacity Assessment (NMECA) under the PAME (Protected Areas Management Enhancement) Project. The assessment, using the Management Effectiveness Tracking Tool (METT), showed that the management effectiveness of over 25% or 61 of 240 National Integrated Protected Areas System (NIPAS) sites (terrestrial and marine PAs intersecting KBAs) in the Philippines remains poor, with a 58% overall average METT findings across 61 assessed PAs.[1] At the conclusion of the NMECA study in 2014, a total of 64 existing NIPAS sites were assessed with a management effectiveness score of 34 out of 100 on average on specific elements. Table 1 shows the list of PAs with their METT scores in 2013 and 2017.[2]

The METT examined six elements of management: 1) threats; 2) context; 3) planning; 4) inputs (finance, staff); 5) process; and, 6) outputs and outcomes, which were rated by members of the Executive Committee of each Protected Area Management Board and by the Protected Area Superintendent. Based on these findings, appropriate interventions directed at developing capacity and accessing partnership funds were implemented at specific NIPAS sites through the PAME Project.

As shown in Figure 1A, only two PAs had a METT score greater than 62% (considered a high score) in 2013. These PAs were the Taal Volcano Protected Landscape and the Apo Reef Natural Park. In 2017, PA scores improved, and 19 PAs had scores greater than or equal to 62%. Consequently, the average METT score increased from 34 to 50, a 47% increase from 2013 levels (Figure 1B).

Of the PA ecosystem types assessed, majority were terrestrial ecosystems (70.31%). The rest were marine ecosystems (18.75%), wetlands (3.13%), or a combination of marine and terrestrial ecosystems (7.81%).

The assessments continue to contribute to policy and decision-making at site and national levels. They have likewise contributed to the targets of the Philippine Development Plan (PDP) 2011-2016, particularly on strengthening the management effectiveness of 2 million hectares (6.7%) of terrestrial and 1.1 million hectares (0.5%) of marine areas through existing national PAs. PAME supported approximately 1.3 million hectares of national terrestrial PAs or 65% of the target, and 0.3 million hectares of national marine PAs or 27% of the PDP target.[3]

PAME also launched a national programmatic capacity development program for DENR staff in partnership with various technical organizations and site partners. PAME built capacity of over 17,000 trainees in relevant management topics such as biophysical assessment, planning and management. This was considered as the largest systematic capacity development of DENR PA staff since the NIPAS act was passed in 1992. Local government and community representatives were also involved in the planning of both existing national PAs and new/proposed PAs, and good practices on these multi-stakeholder engagements have been documented on the ground. [4]Nevertheless, PAME recommended more equitable representation and contribution by other stakeholders such as indigenous peoples, commercial interests and other stakeholders that can affect or can be affected by the PA.

A more systematic and comprehensive system needs to be created in order to capture and consolidate data on public and private sector engagement on biodiversity conservation in terrestrial PAs and KBAs, including those outside of

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PAME-supported sites.

In Mindanao, the Mindanao Protected Area Management Board (PAMB) Network was organized in 2015 as a venue for Mindanao PAMBs to get together to share experiences and exchange expertise and knowledge to improve protected area management. It is the only network of PAMBs in the country, composed of 47 protected areas covering Regions 9, 10, 11, 12, 13 and the Bangsamoro Autonomous Regions of Muslim Mindanao. The Network is a collaboration of stakeholders and partners that promote sustained protected area management through research, capacity building, knowledge exchange, standard setting and stakeholder participation. Continuing support is needed towards achieving One Vision, One Sustained Network and One Progressive Mindanao.[5]

National Target(s)

TARGET 12: By 2028, capacity for biodiversity conservation of public and private sector groups in terrestrial and marine protected areas/key biodiversity areas will be strengthened.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 12AB. Figure, Tables, and Footnotes.pdf](#)

Addressing drivers of threats to biodiversity

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

The HLURB is a government agency tasked to lead the provision of technical assistance to LGUs in CLUPs, regulating housing, land development and homeowners association, and adjudicating disputes in these areas. Its guidance to LGUs include formulating guidelines for preparing CLUPs. The CLUP is one of two documents, the other being the Comprehensive Development Plan (CDP), that LGUs are mandated to prepare under Republic Act No. 7160 or the Local Government Code. The CLUP serves as the primary and dominant basis for the current and future use of land resources for food production, human settlements, and industrial expansion. It is implemented through a Zoning Ordinance issued by the LGU. The CDP, on the other hand, refers to a multi-sectoral plan which embodies the vision, sectoral goals, objectives, development strategies and policies in the medium-term, and within the term of LGU officials. These documents are basic requirements for LGUs to vie for the Seal of Good Local Governance which symbolizes integrity and good performance of LGUs in several service areas, including environmental

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protection.

In 2013, a Framework and Methods for Mainstreaming Biodiversity in the CLUPs of Local Governments[1] was developed in collaboration with the United Nations Development Program-Global Environment Facility (UNDP/GEF) - Department of Environment and Natural Resources (DENR) Project on Partnerships for Biodiversity Conservation or BPP, HLURB and the DENR. This tool serves as a supplemental guide on how to mainstream biodiversity conservation in spatial and land use planning.

In 2014, the HLURB Board of Commissioners approved the Enhanced CLUP Guidebook on Sectoral Studies and Tools for Analysis (Volume 2) which incorporates biodiversity-related concerns. The enhanced Guidebook recognized the need for an integrated landscape or ridge-to-reef approach - from the upland, lowland and coastal ecosystems - to establish the interdependencies and linkages of the biophysical, human and physical resources and development. It likewise provided analytical tools and processes in the study of ecosystems (including biodiversity-rich areas) and mainstreaming of climate and disaster risks in the social, economic and infrastructure studies, as well as in special area studies.[2]

In 2016, the Department of the Interior and Local Government (DILG) issued Memorandum Circular 2016-102 providing guidance to provinces, cities, and municipalities in updating, revising, or preparing their respective Provincial Development and Physical Framework Plan, CLUP, and CDP. The Circular directed LGUs to take concrete action in mainstreaming climate change adaptation, disaster risk reduction and other sectoral concerns.[3]

The application and adoption of the enhanced Guidebook at the local level was not immediate. The HLURB built the capacity of its own staff in the use of the Guidebook, and thereafter provided technical assistance and training to LGUs in preparing or updating their CLUPs. However, the role of LGUs is even more critical. LGUs need to understand and appreciate biodiversity and lead in educating their constituents. Integrating biodiversity conservation into local decision-making on land use and zoning, development planning, and program implementation is an important step to mainstreaming and institutionalizing co-management by LGUs of biodiversity-rich areas.

The BPP project piloted the Framework and Methods for Mainstreaming Biodiversity in the CLUPs of LGUs across five critical biogeographic regions (Luzon, Palawan, Negros-Panay, Mindoro, and Mindanao) covering protected areas (PAs) and key biodiversity areas (KBAs) in the Project sites. These PAs and KBAs include: Northeastern Cagayan KBA, Quirino Protected Landscape, Malampaya Sound, Northern Negros National Park, Central Panay Mountains, Lake Mainit KBA, and Mt. Hamiguitan Range Wildlife Sanctuary. At the closure of the project in 2017, 56% or 24 LGUs have integrated biodiversity conservation zoning (PA or KBA zoning) in various stages in the preparation of

their CLUPs. These LGUs include Sta. Teresita (up to preparation of the proposed Land Use Plan only), Buguey, Baggao in Cagayan; Cabarroguis, Maddela, Aglipay, Saguday, Diffun and Nagtipunan in Quirino; Taytay in Palawan; Calatrava and Silay (up to the selection of spatial options only) in Negros; Culasi (up to selection of spatial options only) and Sebaste (up to selection of spatial options only) in Antique; Tubod, Sison, Kitcharao, and Alegria in Surigao del Norte; Mainit, Tubay, Jabonga, and Santiago in Agusan del Norte; Gov. Generoso and San Isidro in Davao Oriental.

The DILG has identified 81 provinces, 145 cities, 1,489 municipalities and 42,045 barangays in the Philippines as of September 2018 (Table 1).

Table 2 shows the regional summary of CLUPs that were approved by HLURB from 2012 to 2018. Based on this list, only 50 cities and 291 municipalities or a total of 341 LGUs have approved CLUPs. The full list is attached as Table 3.

However, assuming that the Enhanced CLUP Guidebook was approved only in 2014, 257 cities and municipalities out of 1,634 cities and municipalities or only 15.7% have CLUPs that have integrated climate change adaptation, disaster risk reduction, and biodiversity conservation and sustainable use. Figure 1 shows the distribution of LGUs with approved CLUPs across regions.

In summary, some LGUs already have approved CLUPs while others are in the process of drafting and submitting their CLUPs. However, based on consultations conducted nationwide, there are continuing challenges to integrating biodiversity conservation and sustainable use into the CLUPs of LGUs. Many LGUs lack knowledge of biodiversity and access to updated information and maps. The lack of funds, manpower, expertise, and capacity at the local level also makes it difficult for LGUs to prepare their CLUPs or to incorporate biodiversity in their CLUPs.

National Target(s)

TARGET 13: By 2028, 50% of local government units will have formulated and adopted the enhanced comprehensive land use plan using the revised Housing and Land Use Regulatory Board (HLURB) framework.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 13. Figures, Tables, and Footnotes.pdf](#)

Addressing drivers of threats to biodiversity

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

The National Action Plan for Ecosystem Restoration and Species Extinction Prevention (NPAERSEP) was formulated in 2016 through multi-stakeholder participatory process led by the Department of Environment and Natural Resource. It supplements the PBSAP and charts the direction for the recovery and rehabilitation of various ecosystems such as: forest, caves and cave systems, inland wetlands like rivers and lakes, coastal and marine ecosystems like coral reefs, seagrass meadows, mangroves, and mined-out areas.

The NAPERSEP also established the current and desired future conditions of these ecosystems, identified the actions, indicators, timeframe and administrative levels for actions, priority sites and responsible agencies. However, there are no baselines and targets with which to measure the area of degraded ecosystems or functional levels that will be restored. Actions identified in the NAPERSEP, however, are also expected to build on the gains from past and current restoration initiatives.

The National Greening Program (NGP) is the government's main strategy for reforestation. It was established in 2011 through Executive Order No. 23. It aimed to plant 1.5 billion trees covering 1,500,000 hectares of public lands from 2011 to 2015. In 2016, the coverage of the NGP was expanded through Executive Order No. 193 to include reforestation of the remaining 7.1 million hectares of unproductive, denuded and degraded forestlands nationwide from 2016 to 2028. The Philippine Master Plan for Climate-Resilient Forestry Development 2015-2028 also recognized rehabilitation and maintenance of degraded mangrove forests and watersheds as part of the government's strategy to address ecosystem resilience.[1]

Between 2011 into 2017, the NGP has successfully reforested over 1.8 million hectares and accomplished more than 100% of its target area (Figure 1).

Implementation of the NGP goes beyond government, with the participation of civil society organizations and the private sector. Civil society organizations and private sector groups have also participated in the implementation of the NGP, as well as in other reforestation activities such as the Rain Forest Restoration Initiative which aims to restore 1.5 million hectares of forest using native species.

Across the Philippines, stakeholders reported that identified degraded ecosystems have been placed under restoration programs like mangrove and beach forest rehabilitation activities, coral reef protection initiatives, and reforestation activities through the continued implementation of the NGP. DENR - Region 7 (Central Visayas) and DENR - Region 9 (Zamboanga Peninsula) shared that 40% of ecosystems in Cebu and 21% of ecosystems in Zamboanga Peninsula are already under restoration programs, respectively. Those from

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Alangalang and Sta. Fe in Leyte province added that 1,286 hectares of peatland forest that was damaged during Typhoon Haiyan have also been placed under restoration programs.

National Target(s)

TARGET 14: By 2028, 1 million hectares of degraded ecosystems will be restored and/or will be under various stages of restoration.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 14. Figure and Footnote.pdf](#)

Addressing drivers of threats to biodiversity

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

Globally Important Agricultural Heritage Systems or GIAHS refer to agricultural landscapes that possess remarkable land use systems and landscapes that are rich in globally significant biological diversity evolving from the co-adaptation of the community with its environment and its needs and aspirations for sustainable development.

In 2013, the Philippines embarked on a project on Nationally Important Agricultural Systems (NIAHS) as part of a global project on the Conservation and Adaptive Management of Globally Important Agricultural Heritage Systems (GIAHS). Taking the lead for this effort were the Department of Environment and Natural Resources (DENR) and the Department of Agriculture (DA) in collaboration with the National Commission on Culture and Arts (NCCA), National Museum (NM), Food and Agriculture Organization (FAO), and other stakeholders. The project aimed to mainstream the concept of GIAHS in national agricultural heritage systems by identifying and documenting traditional community agricultural practices that support food security and local livelihoods.

Globally, 20 sites have been recognized as GIAHS, including the Ifugao Rice Terraces (IRT) in Ifugao Province. Under this project, 79 candidate sites have been identified as potential candidate NIAHS sites in the Philippines (Figure 1). Two types of NIAHS exist. Type 1 refers to indigenous agroforestry practices that combine planting multiple varieties plants, animals, and soil and water conservation practices embedded in the socio-cultural traditions of indigenous

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peoples. Type 2 refers to traditional production systems that involve high value crops grown as part of complex lowland cropping systems with traditional system of beliefs and rituals. The number and type of candidate sites per region is shown in Table 1. The full list of potential candidate sites is described in the Compendium of Potential GIAHS/NIAHS sites.

In identifying these sites, the Philippines adopted at least three of five global GIAHS criteria: a) contribution to food and livelihood security; b) high agrobiodiversity; c) supported by local knowledge; d) sustained by a social system; and, e) presence of remarkable landscapes. A second level criteria for site prioritization was adopted. These criteria include: a) scale of application; b) age of the practice; c) spatial relation to a Key Biodiversity Area; d) contribution to a major watershed/ecosystems program; e) potential for ecotourism/ecosystems programs; f) indigenous knowledge systems and practice; g) current and potential support of a local government; and, h) social acceptability. These sites, however, are also currently threatened by several factors such as: a) competition with other land uses; b) ageing farm population resulting from a lack of interest among the youth in farming; c) distant agricultural services such as seed supply; d) increasing use of agricultural chemicals; and, e) changing climate patterns.

Building on the gains of this project, the Philippines is implementing a FAO/ Global Environment Facility (GEF)-funded project on Dynamic Conservation and Sustainable Use of Agrobiodiversity in Traditional Agroecosystems of the Philippines from 2016 to 2019. Dynamic conservation of agricultural heritage and its ecosystem goods and services emphasizes a balance between conservation, adaptation, and socio-economic development. The conservation of globally important agrobiodiversity (e.g. rice, mung bean, taro, yam, banana, Manila hemp) is viewed through an integrated approach to sustainable management that considers market incentives, branding and labelling of products and services, cultural promotion, and tourism-related activities. This Project is documenting traditional agroecosystems in the Municipalities of Hungduan (one of 79 candidate NIAHS sites) and Hingyon in Ifugao Province and in the Municipality of Lake Sebu in South Cotabato Province.

Rice is one of 14 global food crops prioritised by the GEF for genetic resource conservation worldwide. Overall, about 3.1% of the rice produced in the Philippines are traditional varieties. In the Municipalities of Hungduan and Hingyon in Ifugao Province, 90% of rice planted is a traditional rice variety locally known as Tinawon or heirloom rice, an old cultivar maintained by the Tawali tribe farmers. About 44 traditional rice varieties in Hingyon and 25 varieties in Lake Sebu are planted mainly for home consumption. The distinctive agricultural biodiversity and cultural importance of these products and target sites are currently being assessed and validated for recognition as NIAHS sites.

Multi-stakeholder consultations across the country reveal that there is very limited knowledge and understanding of NIAHS. However, some regions (outside of the five pilot regions) have expressed interest to conduct an

inventory and assessment of potential NIAHS and GIAHS sites in their areas, and to build their capacity in undertaking this assessment. As of 2017, the system for formal recognition of NIAHS sites is still being finalized; hence, no NIAHS site has been formally recognized.

National Target(s)

TARGET 15: By 2028, there will be at least 10 nationally recognized agricultural heritage systems.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 15. Figures, Tables, and Footnotes.pdf](#)

Addressing drivers of threats to biodiversity

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

In 2002, Republic Act (RA) 9072 or the National Caves and Cave Resources Management and Protection Act was enacted in recognition of the need to conserve, protect, and manage caves and caves resources as part of the Philippines' natural wealth. Under this law and its implementing rules and regulations, caves are classified according to:

- Class I - Caves with delicate and fragile geological formations, threatened species, archeological and paleontological values, and extremely hazardous conditions. Allowable activities are limited to mapping, photography, educational and scientific purposes;
- Class II - Caves with areas or portions which have hazardous conditions and contain sensitive geological, archeological, cultural, historical, and biological values or high-quality ecosystem. It may be necessary to close sections of these caves seasonally or permanently. It is open to experienced cavers or guided educational tours/visits;
- Class III - Caves that are generally safe to inexperienced visitors with no known threatened species and archeological, geological, natural history, cultural and historical values. These caves may also be utilized for economic purposes such as guano extraction and edible birds nest collection.[1]

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The process for classifying caves is detailed in the Philippine Cave Handbook which can be found in: <http://bmb.gov.ph/downloads/References/CAVEHandbookFinal.pdf>

As of December 2017, a total of 2,683 caves have been identified in the Philippines. Of these 2,683 caves, 956 have been assessed, 554 have been classified (Class I – 73; Class II – 373; Class III - 108), and 138 have management plans. A total of 171 caves are located in 18 protected areas.

Figure 1 illustrates the number and proportion of identified, classified, and managed caves to the total number of caves in each region. Region 4B (MIMAROPA) has the most number of identified caves followed by Region 7 (Central Visayas) and Region 5 (Bicol). Currently, 20.6% of caves have been classified while 79.4% are unclassified.

Figure 2A shows that from 2014 to 2017, 396 caves were classified. Of these classified caves, there were more Class II caves (67.3%) compared to Class I (13.2%) and Class III (19.5%) caves (Figure 2B).

Region 1 has more caves with functional partnership agreements, followed by Region 6 and Region 2 (Figure 3). These partnerships are covered by Memoranda of Agreements with Local Government Units, civil society organizations such as caving associations and a women’s association, and private land owners.

As caving becomes more popular among locals and tourists, some LGUs have cited the need for capacity building on the drafting, implementation, and monitoring of cave management plans. This is because some caves are already being used for ecotourism activities even without management plans. This is disconcerting as the risks to the safety of visitors and cave resources have not yet been assessed nor ascertained.

Stakeholders from the consultations reported the need for adequate caving tools and equipment for the Regional Cave Assessment Teams (RCAT) to aid them in their assessment and classification of caves which is a risky activity. IEC campaigns on RA 9072 and caving protocols must also be strengthened to properly inform locals and tourists about caves and caving etiquette.

The DENR-BMB has conducted multi-stakeholder participatory consultations in 2017 to formulate a Cave Management, Protection and Conservation Strategy and Action Plan (CMPCSAP) 2019-2028. The mission of the CMPCSAP is to implement the Cave Management Protection and Conservation Program (CMPCP) as mandated by RA 9072 and DAO 2003-29 towards conservation and sustainable use of caves and karst landscape for present and future generations. The CMPCSAP, which is currently being finalized, should be able to set the targets based on current data available.

National Target(s)

TARGET 16: By 2028, there will be improved conservation management of caves.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 16. Figures and Footnotes.pdf](#)

Addressing drivers of threats to biodiversity

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

The governance of biodiversity conservation and management in the Philippines is supported by policies that protect ecosystems, species and genes, and allow sustainable use of these resources towards a balanced and healthful ecology, and human well-being.

Major laws have previously been enacted to conserve and protect biodiversity such as the National Integrated Protected Areas System (NIPAS) or Republic Act (RA) 7586 (1992), Revised Forestry Code or PD 705 (1975), the Wildlife Resources Conservation and Protection Act or RA 9147 (2001), National Caves and Cave Resources Management and Protection Act or RA 9072 (2001), Environmental Awareness and Education Act or RA 9512 (2008), Organic Agriculture Act or RA 10068 (2010), and an Act to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing , Amending RA 8550 or the Philippine Fisheries Code of 1998 or RA 10654 (2015). In 2018, the Expanded NIPAS Act or RA 11038 placed additional 94 protected areas under government management and protection, and boosted efforts to conserve biodiversity. The General Appropriations Act of 2017 and 2018 have also specifically provided for the protection of biodiversity and mandated all agencies of the government to ensure that the protection of biological diversity is integrated and mainstreamed into their development programs and projects.

Pursuant to these laws, the DENR led the formulation of more support policies such as Department Administrative Orders (DAOs), Department Memorandum Circulars (DMC) and Technical Bulletins (TB), addressing specific policy gaps and concerns. Table 1 lists biodiversity-related policies issued from 2014 to 2017.

Several policies have been also been passed by other sectoral Departments at the national level and at the provincial, and city/municipal levels to conserve and protect biodiversity. However, stakeholders from the consultations report

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that the enforcement of these policies have not entirely been successful due to insufficient awareness of biodiversity and its significance.

Stakeholders surmise that a valuation or resources found within the local government territory may be a good strategy to encourage the active participation of local legislative bodies in formulating and strictly enforcing policies aimed at conserving and protecting the environment. Local government representatives identified the need for assistance in conducting science-based research to inform policy formulation, and trainings on leadership and legislation.

National Target(s)

TARGET 17: By 2020, relevant biodiversity conservation policies to address existing gaps are in place.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 17. Table.pdf](#)

Addressing drivers of threats to biodiversity

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

The vision of biodiversity conservation in the Philippines cannot be achieved by government alone. A whole of society approach is needed to deliver key results to achieve the targets of the PBSAP 2015-2028 and contribute to the overall goal of human well-being.

More than 800 individuals representing nearly 200 agencies and organizations from the national and local governments, civil society organizations, academic and research institutions, private sector, and local communities nationwide participated in the formulation of the PBSAP. Yet, the 2015 baseline of the number of stakeholder groups that are aware of biodiversity, its importance, and benefits and threats to it has yet to be set. Data on Communication, Education, and Public Awareness (CEPA) activities undertaken by the DENR are regularly reported, such as the World Wetlands Day, World Wildlife Day, International Day of Biodiversity, National Environment Awareness Month Celebration, Annual Cave Congress, International Coastal Clean-ups. However, absent a baseline, the increase in the number of stakeholder groups

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participating in these activities cannot be established. Stakeholders from regional consultations also added that these CEPA activities are only successful if behavioral change occurs and communities actively take a stance on protecting biodiversity. Moreover, a data management information system needs to be in place in order to track and monitor the number of stakeholder groups and the reach of CEPA activities at the regional and national levels. These CEPA activities should also include those undertaken by other development partners, civil society organizations academic, and research institutions, private sector, and local communities.

Annex 1 shows the list of CEPA activities and participating stakeholder groups, undertaken by the DENR-Biodiversity Management Bureau from 2014 to 2017.

Beyond CEPA, many stakeholders have also invested in implementing biodiversity-related activities that directly and indirectly contribute to increasing awareness, importance, benefits and threats to biodiversity. Annex 2 shows the list of biodiversity-related interventions undertaken by some civil society organizations and stakeholder groups from 2014-2017.

National Target(s)

TARGET 18: By 2028, there will be a 10% annual increase from the 2015 baseline in the number of schools, peoples' organizations, media organizations, local government units, private companies, policy makers, government offices that are aware and supportive of biodiversity, its importance, threats, and benefits of protecting it.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Annex 1. CEPA activities undertaken by participating stakeholders and DENR-BMB from 2014 to 2017.pdf](#)
[Annex 2. Private companies, POs, NGOs in biodiversity conservation.pdf](#)

Addressing drivers of threats to biodiversity

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

Ensuring the integrity of Philippine biodiversity requires the protection and conservation of various ecosystems and species. Conservation areas should be representative, which means that efforts must be targeted towards all ecosystem types (terrestrial, marine, inland wetlands) and consider priority

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species (endangered, endemic, and keystone species).[1]

There are currently 244 PAs under NIPAS covering an approximate area of 7.76 million hectares or 15.6% of the total land area and 1.544% of the total sea area of the Philippines. Of these, 172 are terrestrial or largely terrestrial PAs covering 4.68 million hectares and 72 marine or largely marine PAs covering 3.08 million hectares.[2] In terms of KBAs, 128 terrestrial and freshwater KBAs were identified in 2006 and 123 marine KBAs identified in 2009. The integration of these terrestrial, fresh water, and marine KBAs resulted in a total of 228 KBAs covering 10,655,200 hectares. These represent known habitats of 855 globally threatened or restricted range species of plants, molluscs, elasmobranchs, fish, amphibians, reptiles, birds, and mammals.[3]

As of 2018, there are 128 PAs within KBAs with terrestrial PAs covering 2,787,664 hectares and marine PAs covering 1,047,746 hectares. In total, only 56% of established PAs are within KBAs.[4] Figure 1 shows the location and overlap of protected areas and key biodiversity areas in the Philippines.

The NIPAS Act has established the policy framework for the establishment of PAs. However, other governance types have emerged and are still emerging, which take into account area-based models of conservation. These include the declaration of Local Conservation Areas (LCAs), Indigenous Community Conserved Areas (ICCA), and Critical Habitats.

Table 1 shows the number of conservation areas established as of 2015 and 2018, and sets the baseline to measure the increase in total area.

LCAs have been established through local ordinances by Local Government Units (LGUs), consistent with the Local Government Code, which mandates LGUs to adopt measures to safeguard and conserve land, marine, forest, and other resources. As of June 2018, 63 LCAs totaling 262,267 hectares have been established through City, Municipal or Barangay Ordinances or Resolutions. These LCAs come in many forms such as wildlife sanctuaries, critical habitats, mangrove reserves, marine reserves and cave systems. In 2016, the Palawan Council for Sustainable Development (PCSD) declared through a Resolution the largest critical habitat in the Philippines known as Cleopatra's Needle Critical Habitat, which covers 41,350 hectares.[5] Table 2 shows the list of LCAs as of June 2018.

Aside from LGUs and the PCSD, the DENR also declare areas as critical habitats to protect the habitats and populations of threatened species of wild flora and fauna pursuant to Republic Act 9147 or the Wildlife Resources Conservation and Protection Act. As of 2017, nine critical habitats have been declared in the Philippines through Presidential Proclamation and DENR Administrative Orders (Table 3).

National Target(s)

TARGET 19: By 2028, there will be a 10% increase in total area from 2015 levels of terrestrial including inland wetlands protected areas managed through the National Integrated Protected Areas System (NIPAS) and other conservation measures (Indigenous Community Conserved Areas, Local Conservation Areas, Critical Habitats) that overlap with key biodiversity areas.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 19. Figure, Tables, and Footnotes.pdf](#)

Addressing drivers of threats to biodiversity

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

The Philippines is an archipelagic country with 7,641 islands that, together with Indonesia and Malaysia, form an ocean region that is considered the world's center of marine biodiversity. A study conducted by Carpenter and Springer (2015) further reveals that the Philippines is also the world's center of the center of marine shorefish biodiversity.[1] This justifies and reiterates the importance of marine conservation efforts in the country.

Through Republic Act 7586 or the National Integrated Protected Areas System (NIPAS) Act of 1992, the Philippines set to protect areas of the natural environment "to maintain essential ecological processes and life-support systems, to preserve genetic diversity, to ensure sustainable use of resources found therein, and to maintain their natural conditions." Marine protected areas (MPAs) and marine protected area networks (MPANs) are invaluable. The latter preserves the connectivity between marine ecosystems. This is important as MPAs and MPANs are habitats for various marine species that travel across several marine ecosystems in their lifetime. MPAs and MPANs are also a source of food, medicines, livelihood and renewable resources for local communities, among others. Based on available data, more MPAs are being established as awareness of the importance of marine ecosystem grows.

As of 2010, the Philippines had 33 MPAs out of the 240 protected areas under the NIPAS[2], three of which are legislated (Batanes Protected Landscape and Seascape, Sagay Marine Reserve, and Tubbataha Reefs Natural Park). These MPAs cover over 2.5 million hectares of marine areas (Figure 1). As of 2015, the same number of MPAs under NIPAS has been recorded by the Coastal and Marine Division of the DENR- BMB.

In 2018, with the enactment of Republic Act 11038 or the Expanded NIPAS Act, the total number of legislated MPAs under NIPAS increased from three to 27, covering a total area of 1,910,620.90 hectares. In the same year, the Philippine Rise was also proclaimed as a Marine Resource Reserve by Presidential Proclamation No. 489, covering a total area of 357,903 hectares. Table 1 shows the area coverage of legislated MPAs under NIPAS and E-NIPAS, and of the

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Philippine Rise Marine Resource Reserve, with an overall total area of 2,963,327.42 hectares.

In addition to MPAs under NIPAS, there are locally-managed MPAs. However, the number and area coverage need to be reconciled as there are several data sources showing different figures. The datasets also do not have complete information, contributing to the inconsistencies in numbers and area coverage. The Department of Agriculture (DA) - Bureau of Fisheries and Aquatic Resources has the mandate over locally-managed MPAs pursuant to Sections 80 and 81 of Republic Act 8550 or the Philippine Fisheries Code of 1998. The DA - BFAR records show 1,235 fish sanctuaries and fishery reserves as of 2013. Of these, only 975 MPAs have data on area coverage, totaling 223,884.35 hectares.[3]

On the other hand, the Marine Protected Areas Support Network reports 1,285 MPAs in the country. However, the dataset makes no distinction between NIPAS and locally-managed MPAs (Figure 2).

Figure 3 shows the overlap of MPAs under NIPAS and locally-managed MPAs with Key Biodiversity Areas.

While it is noteworthy that many local communities are taking the initiative to establish locally managed MPAs, stakeholders from the consultations reported that managing these MPAs have not been easy. The lack of a sustainable monitoring mechanism, limited funds, and poor enforcement action has made it difficult to effectively manage these MPAs. As a result, poaching within these MPAs and encroachment of fishermen in these areas continue. Stakeholders identified the need for capacity building activities, diving gear and equipment, and tools and methodologies on MPA management to aid Local Government Units and local groups in the management of these MPAs. They also cited the need for intensified Communication, Education and Public Awareness (CEPA) campaigns on the importance of marine areas so that community participation in the protection of these MPAs will also increase.

National Target(s)

TARGET 20: By 2028, there will be a 20% increase from 2015 levels in the coverage of established marine protected areas/sanctuaries across various aquatic habitats.

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

Measure taken has been partially effective

Relevant websites, links, and files

[Target 20. Figures, Tables, and Footnotes.pdf](#)

TARGET 1: By 2028, the conservation status of nationally and globally threatened species in the country from 2016 levels is maintained or improved.



2018 - Progress towards target but at an insufficient rate

Targets

TARGET 1: By 2028, the conservation status of nationally and globally threatened species in the country from 2016 levels is maintained or improved.

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Category of progress towards the implementation of the selected target

Date the assessment was done

23 Dec 2018

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 2: By 2028, there will be no net loss in natural forest cover.



2018 - On track to achieve target

Targets

TARGET 2: By 2028, there will be no net loss in natural forest cover.

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Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Area of land covered in natural forests (closed, open and mixed forests based on National Mapping Resource and Information Authority land cover classification)

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Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 3: By 2028, there will be no net loss in presence and area distribution of live coral cover, mangroves, and seagrasses.



2018 - Progress towards target but at an insufficient rate

Targets

TARGET 3: By 2028, there will be no net loss in presence and area distribution of live coral cover, mangroves, and seagrasses.

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Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Presence and area distribution of live corals, mangroves, and seagrasses and their condition

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Level of confidence

Level of confidence of the above assessment

Based on expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 4: By 2028, over 50% of genetic diversity of cultivated plants and farmed and domesticated animals and wild relatives will be conserved or maintained.



2018 - Progress towards target but at an insufficient rate

Targets

TARGET 4: By 2028, over 50% of genetic diversity of cultivated plants and farmed and domesticated animals and wild relatives will be conserved or maintained.

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Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Genetic diversity of cultivated plants and farmed and domesticated animals and wild relatives

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Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 5: By 2028, the population of migratory bird species identified in selected inland and coastal wetlands along the East Asian–Australasian Flyway (EAAF) will be maintained.



2018 - On track to achieve target

Targets

TARGET 5: By 2028, the population of migratory bird species identified in selected inland and coastal wetlands along the East Asian–Australasian Flyway (EAAF) will be maintained.

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Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Population of migratory bird species recorded and analyzed during population counts in key inland and coastal wetland sites in the Philippines along the EAAF

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Level of confidence

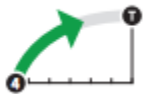
Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

TARGET 6: By 2028, there will be a 5% increase in the proportion of green spaces in the five largest cities.



2018 - On track to achieve target

Targets

TARGET 6: By 2028, there will be a 5% increase in the proportion of green spaces in the five largest cities.

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Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

- Proportion of green spaces in Philippine cities
- Proportion of cities that have adopted the City Biodiversity Index

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Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 7: By 2028, as a result of improved conservation, ecosystem services provided by key biodiversity areas will be enhanced.



2018 - On track to achieve target

Targets

TARGET 7: By 2028, as a result of improved conservation, ecosystem services provided by key biodiversity areas will be enhanced.

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Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

- Amount of estimated carbon stocks in forest areas in the Philippines
- Number of irrigation systems and water systems for domestic use that are sourced from KBAs and volume and quality of water from these sources
- Number of sites in KBAs that serve as ecotourism destinations
- Number of IP communities with identified sacred places and/or ICCAs within KBAs

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Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 8: By 2028, fish stocks of economically important species will be maintained.



2018 - On track to achieve target

Targets

TARGET 8: By 2028, fish stocks of economically important species will be maintained.

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Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Abundance and biomass of fish species recorded in national stock assessments and other local stock assessment initiatives

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Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

TARGET 9: By 2028, there will be an annual increase of at least 5% in biodiversity conservation related jobs (ecotourism, sustainable agriculture, ecosystem restoration).



2018 - On track to achieve target

Targets

TARGET 9: By 2028, there will be an annual increase of at least 5% in biodiversity conservation related jobs (ecotourism, sustainable agriculture, ecosystem restoration).

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Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Number of people employed in biodiversity conservation-related jobs annually

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Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 10: By 2028, the key threats to biodiversity will be reduced, controlled or managed.



2018 - Progress towards target but at an insufficient rate

Targets

TARGET 10: By 2028, the key threats to biodiversity will be reduced, controlled or managed.

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Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

- Number of IAS hotspots
- Number of coastal and fresh surface water systems in KBAs that pass

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the minimum criteria for water quality under the provisions of DAOs 34 and 35

- Number of agricultural, including fisheries, expansion hotspots in KBAs
- Number of energy production and mining hotspots in KBAs
- Number of fuelwood collection hotspots that source raw materials from sustainable sources
- Number of illegal cutting of trees hotspots
- Number of illegal logging hotspots
- Number of hotspots for hunting and poaching of wildlife
- Number of hotspots of illegal fishing practices
- Number of hotspots for residential and commercial development in KBAs

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 11: By 2028, there will be a 10% increase in agricultural areas devoted to all types of biodiversity-friendly agriculture.



2018 - On track to achieve target

Targets

TARGET 11: By 2028, there will be a 10% increase in agricultural areas devoted to all types of biodiversity-friendly agriculture.

EN

Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Number and area of farms practicing biodiversity-friendly agriculture in the Philippines

EN

Level of confidence

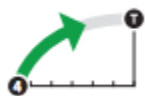
Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 12: By 2028, capacity for biodiversity conservation of public and private sector groups in terrestrial and marine protected areas/key biodiversity areas will be strengthened.



2018 - On track to achieve target

Targets

TARGET 12: By 2028, capacity for biodiversity conservation of public and private sector groups in terrestrial and marine protected areas/key biodiversity areas will be strengthened.

EN

Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

- Proportion of PA management structures with high management effectiveness assessment scores
- Number of private companies, POs/NGOs, communities involved in biodiversity conservation

EN

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 13: By 2028, 50% of local government units will have formulated and adopted the enhanced comprehensive land use plan using the revised Housing and Land Use Regulatory Board (HLURB) framework.



2018 - On track to achieve target

Targets

TARGET 13: By 2028, 50% of local government units will have formulated and adopted the enhanced comprehensive land use plan using the revised Housing and Land Use Regulatory Board (HLURB) framework.

EN

Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Number of LGUs with enhanced CLUPs based on the revised HLURB framework

EN

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 14: By 2028, 1 million hectares of degraded ecosystems will be restored and/ or will be under various stages of restoration.



2018 - On track to achieve target

Targets

TARGET 14: By 2028, 1 million hectares of degraded ecosystems will be restored and/ or will be under various stages of restoration.

EN

Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Number of ha of degraded ecosystems placed under restoration programs

EN

Level of confidence

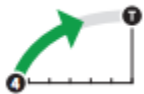
Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 15: By 2028, there will be at least 10 nationally recognized agricultural heritage systems.



2018 - On track to achieve target

Targets

TARGET 15: By 2028, there will be at least 10 nationally recognized agricultural heritage systems.

EN

Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Number of nationally recognized agricultural heritage sites

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Adequacy of monitoring information to support assessment

No monitoring system in place

TARGET 16: By 2028, there will be improved conservation management of caves.



2018 - On track to achieve target

Targets

TARGET 16: By 2028, there will be improved conservation management of caves.

EN

Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

- Number of caves with functional conservation/management partnerships or engagements
- Number of caves that have been officially classified

EN

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 17: By 2020, relevant biodiversity conservation policies to address existing gaps are in place.



2018 - On track to achieve target

Targets

TARGET 17: By 2020, relevant biodiversity conservation policies to address existing gaps are in place.

EN

Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Number of RAs, EOs, implementing rules and regulations (IRR), DAOs, Memorandum Circulars, local ordinances, policy review/studies enforced or implemented

EN

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 18: By 2028, there will be a 10% annual increase from the 2015 baseline in the number of schools, peoples' organizations, media organizations, local government units, private companies, policy makers, government offices that are aware and supportive of biodiversity, its importance, threats, and benefits of protecting it.



2018 - On track to achieve target

Targets

TARGET 18: By 2028, there will be a 10% annual increase from the 2015 baseline in the number of schools, peoples' organizations, media organizations, local government units, private companies, policy makers, government offices that are aware and supportive of biodiversity, its importance, threats, and benefits of protecting it.

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Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Number of stakeholder groups that are aware of biodiversity, its importance, benefits, and threats to it

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Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 19: By 2028, there will be a 10% increase in total area from 2015 levels of terrestrial including inland wetlands protected areas managed through the National Integrated Protected Areas System (NIPAS) and other conservation measures (Indigenous Community Conserved Areas, Local Conservation Areas, Critical Habitats) that overlap with key biodiversity areas.



2018 - Progress towards target but at an insufficient rate

Targets

TARGET 19: By 2028, there will be a 10% increase in total area from 2015 levels of terrestrial including inland wetlands protected areas managed through the National Integrated Protected Areas System (NIPAS) and other conservation measures (Indigenous Community Conserved Areas, Local Conservation Areas, Critical Habitats) that overlap with key biodiversity areas.

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Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Proportion of total area of terrestrial PAs in relation to KBAs

EN

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

TARGET 20: By 2028, there will be a 20% increase from 2015 levels in the coverage of established marine protected areas/sanctuaries across various aquatic habitats.



2018 - On track to achieve target

Targets

TARGET 20: By 2028, there will be a 20% increase from 2015 levels in the coverage of established marine protected areas/sanctuaries across various aquatic habitats.

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Category of progress towards the implementation of the selected target

Date the assessment was done

04 Dec 2018

Indicators and Activities

Indicator(s) used in this assessment

Proportion of area established MPAs/sanctuaries against total area of aquatic

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habitats

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

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

Please see PBSAP Targets 11 to 20.

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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

The PBSAP 2015-2028 has been mainstreamed into the Philippine Development Plan 2017-2022. Please see PBSAP Targets 11 to 20.

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3. Incentives

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Please see PBSAP Targets 11 to 20.

EN

4. Use of natural resources

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Please see PBSAP Targets 11 to 20.

EN

5. Loss of habitats

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Please see PBSAP Targets 1 to 6, and 10.

EN

6. Sustainable fisheries

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Please see PBSAP Targets 7, 8, and 10.

EN

7. Areas under sustainable management

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Please see PBSAP Target 10.

EN

8. Pollution

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Please see PBSAP Target 10.

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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

Please see PBSAP Target 10.

EN

10. Vulnerable ecosystems

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Please see PBSAP Target 10.

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11. Protected areas

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Please see PBSAP Targets 1 to 6.

EN

12. Preventing extinctions

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Please see PBSAP Targets 1 to 6.

EN

13. Agricultural biodiversity

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Please see PBSAP Targets 1 to 6, 11, and 15.

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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

Please see PBSAP Targets 1 to 9, 11 to 20.

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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

Please see PBSAP Targets 11 to 20.

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16. Nagoya Protocol on ABS

Interim national report on the implementation of the Nagoya Protocol

[ABSCH-NR-PH-240066-1](#) Interim national report on the implementation of the Nagoya Protocol in the Philippines

Additional relevant information that has not been included in the interim national report

Please see PBSAP Targets 9, and 11 to 20.

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17. NBSAPs

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

The PBSAP 2015-2028 was adopted through DENR Department Administrative Order (DAO) No. 2016-12 in 2016. Said DAO authorized the DENR- Biodiversity Management Bureau to coordinate the implementation and mainstreaming of the PBSAP into the plans and programs of concerned national government agencies (NGAs) and local government units (LGUs), including government-owned and controlled corporations (GOCCs) and government financial institutions (GFIs), and state universities and colleges (SUCs). This was reinforced in November 2017 with the issuance of Department Memorandum Circular (DMC) 2016-745 integrating biodiversity conservation in the planning, implementation and monitoring of all development projects and tenurial instruments issued by the DENR.

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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

Please see PBSAP Targets 11 to 20.

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19. Biodiversity knowledge

20. Resource mobilization

Financial Reporting Framework

<https://chm.cbd.int/database/record/207457> Financial Reporting Framework: Reporting on baseline and progress towards 2015

Section V. Description of the national contribution to the achievement of the targets of the Global Strategy for Plant Conservation

Philippines has national targets related to the GSPC Targets

1. An online flora of all known plants

2. An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action

3. Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared

4. At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration

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

6. At least 75 per cent of production lands in each sector managed sustainably, consistent with the conservation of plant diversity

7. At least 75 per cent of known threatened plant species conserved in situ

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

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

10. Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded

11. No species of wild flora endangered by international trade

12. All wild harvested plant-based products sourced sustainably

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

14. The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes

15. The number of trained people working with appropriate facilities sufficient according to national needs, to achieve the targets of this Strategy

16. Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy

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:

The Philippines is one of 17 mega-biodiverse countries of the world, containing some of the world's most unique and varied assemblage of species. It has 228 recognized key biodiversity areas which are home to 855 globally important species of plants, corals, molluscs, elasmobranchs, fishes, amphibians, reptiles, birds and mammals. It also presents unique coastal, marine and island biodiversity due to its location within the Coral Triangle, a center of highest marine biodiversity. The country's agricultural ecosystem is also noteworthy. The Philippines is part of the center of diversity of rice, coconut, mung bean, taro and yam, as well as the center of origin and diversity of bananas in Southeast Asia. New species of birds, mammals, reptiles, amphibians and plants continue to be discovered in the Philippines.

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The Philippines derives large benefits from biodiversity and the ecosystem services it provides. In particular, the country recognizes the important role played by watersheds, river basins, coastal and marine areas in the environment and in society as a source of food and livelihood (supporting fisheries, recreation and tourism and many other activities). Its population of over 100 million- projected to reach 125 million by 2030- depend on biodiversity and ecosystems services, many of which we have not been able to fully value or appreciate.

Main pressures on and drivers of change to biodiversity (direct and indirect)

Five main pressures of biodiversity loss in the Philippines were identified through an extensive series of consultations and analyses conducted as part of the formulation and updating of the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028. These main pressures are: 1) Habitat loss; 2) Over-exploitation; 3)

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Invasive alien species; 4) Pollution; and, 5) Climate change. These pressures are interlinked and lead to harmful consequences affecting human lives, livelihoods, and overall well-being. The PBSAP 2015-2028 addresses these main pressures by identifying the causes and effects of continuing degradation of the country's biodiversity.

Habitat loss has been attributed to: a) indiscriminate logging activities which continue to persist, although there has been a decline in logging activities due to a logging ban on old growth forests; b) overlapping and conflicting land uses such as mining claims and rights with protected areas, ancestral domains and planned conservation areas; and, c) burgeoning population which contributes to land conversion for human settlements. Habitat loss has resulted to increased carbon emissions, groundwater depletion, drought, landslides, and coral reef siltation, among others.

Over-exploitation of resources is manifested through over-harvesting of forest resources, illegal fishing and over-fishing, illegal wildlife trading, and intensive agrochemical use. These have resulted to a decline in species population and eutrophication, among others.

Introductions of invasive alien species, particularly some fishes and plants, have also taken a toll on biodiversity. Some fish species and aquatic plants have had a negative impact on wetland biodiversity; some plants have invaded agricultural areas and natural forest. These have led to competition with native species and decline in their population.

Pollution (land, air and water) has also contributed to the degradation of biodiversity. Land and ocean-based sources of solid and liquid wastes have affected habitat conditions that have resulted to lower food production and decline in species population, and have undermined tourism-based activities, among others.

Several direct impacts of climate change have been identified, among them are: a) changes in the timing of biological events; b) changes in species distribution and behavior in plants and animals; and, c) increased frequency of pests and diseases. As an archipelagic country located in the Pacific Ring of Fire, the Philippines is exposed to sea level rise, warmer seas and stronger storms that result from climate change. Climate change ultimately increases the vulnerability of species to extinction and contributes to potential losses of net productivity of ecosystems.

Implementation of the NBSAP

The Philippines started formulating its National Biodiversity Strategy and Action Plan in 1994 with the formulation of the Philippine Strategy for the Conservation of Biological Diversity (PSCBD). In 1995, the Philippines undertook an assessment of the country's biodiversity through the UNEP-assisted Philippine Biodiversity Country Study. As a result, the National Biodiversity Strategy and Action Plan (NBSAP) was developed and published in 1997. Five years later, in 2002, a review of the NBSAP

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was undertaken that identified 206 conservation priority areas and species conservation priorities, collectively known as the Philippine Biodiversity Conservation Priorities (PBCP), which is considered the second NBSAP revision and incorporates six major strategies and immediate actions. The PBCP was reinforced in 2006 with 228 key biodiversity areas (KBAs) identified covering an estimated 10.56 million hectares.

In 2013, building on the current status and achievements of the Philippines with respect to biodiversity planning and implementation, the process for updating the Philippine Biodiversity Strategy and Action Plan (PBSAP) began. The updating of the PBSAP aimed to integrate the Philippines' obligations under the CBD into its national development and sectoral planning frameworks. The PBSAP 2015-2028 is the third and update of the country's biodiversity strategy and action plan. It is a result of extensive and multi-stakeholder consultations from February 2013 to March 2015, participated in by more than 800 individuals representing nearly 200 agencies and organizations from national and local governments, civil society organizations, academic and research institutions, private sector, indigenous and local communities. It serves as the country's roadmap for conserving and managing biodiversity resources, and mainstreaming biodiversity objectives into national development and sectoral planning frameworks. As such, it directly feeds into the Philippine Development Plan, the President's 10-point agenda, and other national and local development plans. It likewise adheres to global targets on biodiversity and sustainable development such as the 2010 Aichi Biodiversity Targets as well as the Sustainable Development Goals.

The PBSAP 2015-2028 envisions that by 2028, the country's biodiversity is restored and rehabilitated, valued, effectively managed and secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all women and men. The PBSAP contains 20 specific targets and related indicators, financing needs and strategies, monitoring mechanisms, and institutional arrangements and responsibilities.

Overall actions taken to contribute to the implementation of the Strategic Plan for Biodiversity 2011-2020

The PBSAP 2015-2028 identified 20 targets to address drivers of biodiversity loss, reduce biodiversity threats, improve biodiversity status, and enhance ecosystem services, all towards the overarching goal of improving human well-being. These targets contribute to the achievement of the Aichi Biodiversity Targets and the Strategic Plan for Biodiversity 2011-2020, and to several Sustainable Development Goals (SDGs).

[PBSAP Wheel.pdf](#)

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Support mechanisms for national implementation (legislation, funding, capacity-building, coordination, mainstreaming, etc.)

The PBSAP targets are implemented through a combination of direct interventions (which are expected to result in concrete physical changes in key biodiversity areas), and enabling interventions (which are expected to support or amplify the direct intervention efforts).

The direct interventions are: 1) Restoration of ecosystem functions; 2) Promotion of biodiversity-friendly livelihoods; and, 3) Strengthening law enforcement. The enabling interventions are: 1) Communication, Education and Public Awareness; 2) Capacity development for biodiversity management; 3) Biodiversity-related conservation research; 4) Strengthening policy for biodiversity conservation; 5) Promotion of biodiversity-friendly technology; and, 6) Resource mobilization.

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Mechanisms for monitoring and reviewing implementation

A Reference Sheet is currently being prepared to guide various stakeholders in the review and monitoring of the implementation of the PBSAP. The Reference Sheet for each PBSAP target included information of the following: 1) precise definition of target indicator; 2) unit of measure; 3) methods for data capture (data sources and frequency of updating data); 4) data quality and limitations; 5) data analysis and utilization; 6) reporting; and 7) national data storage.

There are also some biodiversity monitoring systems in place that are currently being used to measure implementation of specific targets. Manuals on Biodiversity Assessment and Monitoring System for Terrestrial Ecosystems, Inland Wetland Ecosystems, and Coastal Marine Ecosystems are available as guides. Other programs, projects, activities and systems are in place to assess and monitor changes such as the Lawin Forest and Biodiversity Protection System for forest status; Annual Waterfowl Census for migratory birds; the National Stock Assessment Program for economically important fish stocks; the Coral Reef Visualization and Assessment and the National Assessment of Coral Reef Ecosystems for coral reefs and seagrass environments, and monitor coastal benthic habitats; and the Management Effectiveness Tracking Tool and Management Effectiveness Tools to assess protected area management capacity. The National Mapping and Resource Information Authority (NAMRIA), the country's central mapping agency, regularly updates natural resources maps, including on land cover and coastal resources.

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Additional Information

Please see attached file.

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Other relevant website address or attached documents

- [Introduction to the Sixth National Report of the Republic of the Philippines.pdf](#)