

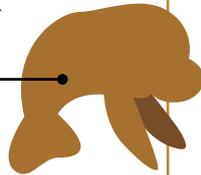


# BIODIVERSITY AND CLIMATE CHANGE



## MEET THE RESIDENTS

- PHILIPPINE EAGLE
- RAFFLESIA
- PHILIPPINE DEER
- PAWIKAN
- DUGONG
- TAMARAW
- TARSIER
- WRITHED-BILLED HORNBILL
- LEYTE TREE FROG



## THE NEED FOR URGENT ACTION

### RATIONALE

The Philippines is considered a mega-diversity<sup>1</sup> country rivaled only by a few countries in the world when it comes to variety of ecosystems, species and genetic resources. Many of the islands comprising the archipelago are believed to have a very high degree of land and animal endemism. The country hosts more than 52,177 described species of which more than half is found nowhere else in the world<sup>2</sup>. On a per unit area basis, the Philippines is estimated to harbor more diversity of life than any other country on the planet.

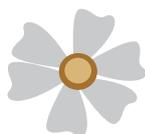
Unfortunately however, the Philippines is also considered a biodiversity hotspot<sup>3</sup> and to experience an alarming rate of destruction of these important resources brought about by overexploitation, deforestation, land degradation, climate change, and pollution (including biological pollution), among others.

SOURCE: 2014: STATUS OF PHILIPPINE BIODIVERSITY. QUEZON CITY, PHILIPPINES: DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES-BIODIVERSITY MANAGEMENT BUREAU

1 OF 17  
MEGA-DIVERSITY  
COUNTRIES



2/3 OF THE  
EARTH'S  
BIODIVERSITY



MAINTAINS 5%  
OF THE  
WORLD'S FLORA

HOSTS 70-80%  
OF THE WORLD'S  
ANIMAL AND  
PLANT SPECIES



IN THE NUMBER  
OF PLANT  
SPECIES



2ND LARGEST CORAL  
REEF COVER GLOBALLY  
AND  
2ND HIGHEST SEAGRASS  
DIVERSITY IN THE WORLD

THE PHILIPPINES HOSTS **52,177+** DESCRIBED SPECIES OF WHICH MORE THAN HALF IS FOUND NOWHERE ELSE IN THE WORLD.

<sup>1</sup> A mega-diverse country has a great number and diversity of animals and plants.

<sup>2</sup> Philippine Biodiversity Conservation Priorities: A Second Iteration of the National Biodiversity Strategy and Action Plan, 2002.

<sup>3</sup> Places on Earth that are both biologically rich and deeply threatened.

## RELEVANCE OF BIODIVERSITY

The significance of biodiversity and ecosystem services to human well-being is immense given the dependence of a majority of 100 million Filipinos on natural resources that provide them life and livelihood. Biodiversity and ecosystem services propel and sustain development and development impacts biodiversity and ecosystem services. Both human well-being and long-term economic success depend on these services.

The diversity of ecosystems, species and genetic resources in the country is reflected in the richness of its biodiversity- from mountain forests to agricultural areas, freshwater systems, coastal and marine areas- and the ecosystem services they provide- provisioning, regulating, supporting and cultural.

For many years, the environment and natural resources (ENR) sector has contributed to the gross domestic product (GDP) by providing valuable, yet exhaustible resources such as agriculture and fisheries and forestry. Agriculture and fisheries are major drivers of the Philippine economy, with more than one-third of the country's population dependent on agriculture and fishing for a living.

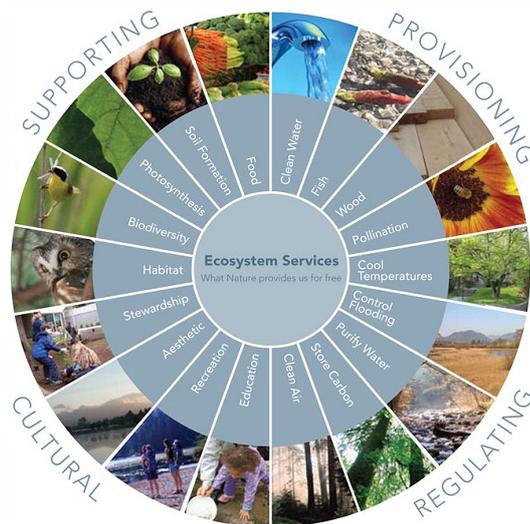
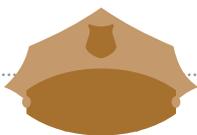


FIGURE 1. ECOSYSTEM SERVICES  
SOURCE: MILLENNIUM ECOSYSTEM ASSESSMENT

SOURCE: 2014: THE 5TH PHILIPPINE NATIONAL REPORT TO THE CONVENTION ON BIOLOGICAL DIVERSITY, PHILIPPINES: DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES-BIODIVERSITY MANAGEMENT BUREAU

## PHILIPPINE BIODIVERSITY: MAJOR CHALLENGES



### POLICY

- Lack of harmonized policy
- Poor land management and administration
- Conflicting/ overlapping governmental mandates
- Weak water government
- Lack of manpower and expertise at the local level



### OPERATIONAL

- Inadequate tools and facilities to support management
- Unavailability of timely, updated and integrated and integrated database
- Inadequate and unsustainable financing for ENR, climate change adaptation/mitigation and disaster risk reduction and management



### PEOPLE

- Low awareness on biodiversity and ecosystem services
- Conversion of lands inside a Protected Area for agriculture and other uses
- Unregulated tourism
- Illegal extraction of wildlife, plants and minerals

## ENHANCING BIODIVERSITY CONSERVATION TO COPE WITH CLIMATE CHANGE

Climate change is one of the most pressing issues facing humanity today. Posing a great challenge to biodiversity worldwide, it has become one of the major drivers of biodiversity loss as identified in the updated PBSAP.

Impacts of climate change to biodiversity have been identified, such as:

### IMPACTS ON SPECIES

- Shift in feeding point and disruption in flight patterns for migratory birds
- Extinction of some mountain plants and animals
- Change in species distribution, composition and abundance
- Invasion of weeds and alien species
- Displacement of native plant/ forest species
- Loss of plant and animal species
- Migration of plant and animal species

### IMPACTS ON ECOSYSTEMS

- Loss of wetlands
- Frequency of forest fires
- Increased drought/ flooding
- Coral bleaching
- Increased outbreaks of pests and diseases in terrestrial and marine areas

Experts advocate for an integrated mitigation-adaptation framework that will ensure the effectiveness of solutions dealing with climate change impacts (Villarin et al., 2008).

There are many ongoing efforts in the Philippines to address climate change and its potential threats to biodiversity and a number of institutional, policy and program milestones have been achieved following the ratification by the Philippines of the United Nations Framework Convention on Climate Change (UNFCCC)\* in 1992 and the Kyoto Protocol\* in 2003.

In 2003, the Department of Environment and Natural Resources through the Biodiversity Management Bureau (BMB), created an Ad-hoc Technical Expert Group on Biodiversity and Climate Change to respond to the challenges of climate change. The Ad-hoc supports the implementation of collaborative action on mitigation and adaptation

Activities are designed in consideration with the projected change in climate. These actions include:



“ The Philippines is considered a biodiversity hotspot in two major ways. First, threats and their impacts change, e.g. some places may become more threatened while others, if conservation efforts are successful, may eventually recover. Second, knowledge of biodiversity, threats, and costs is continually improving, e.g. new species and populations are discovered, and higher resolution land cover data are collected. (Mittermeier et al., 2004) ”

## BIODIVERSITY MATTERS IN A CHANGING WORLD

Improved biodiversity management enhances resilience to climate change and contributes to adaptation strategies. Species and habitats are the building blocks on which human livelihoods depend, the foundation for productive forests, fisheries, and agricultural crops.

Climate change is already impacting on ecosystems and livelihoods, but enhanced protection and management of biological resources can mitigate these impacts and contribute to solutions as nations and communities strive to adapt to climate change.

Protecting forests and other natural ecosystem can provide social, economic, and environmental benefits, both directly through more sustainable management of biological resources and indirectly through protection of ecosystem services.

Protected Area management is recognized in the **National Climate Change Action Plan 2011-2028** as an important climate change response.

## MANAGING PHILIPPINE BIODIVERSITY: WHO'S IN CHARGE?

The DENR through the Biodiversity Management Bureau (BMB) is the lead agency for the conservation and protection of the country's rich biodiversity. BMB is responsible to formulate, review, monitor, and recommend policies, plans and programs for the conservation of biological resources. BMB shall develop partnerships and linkages in biodiversity conservation and management at the ecosystem and species level. Under the DENR, the bureau shall provide technical assistance to field offices of the department regarding the conservation and management of wildlife resources,

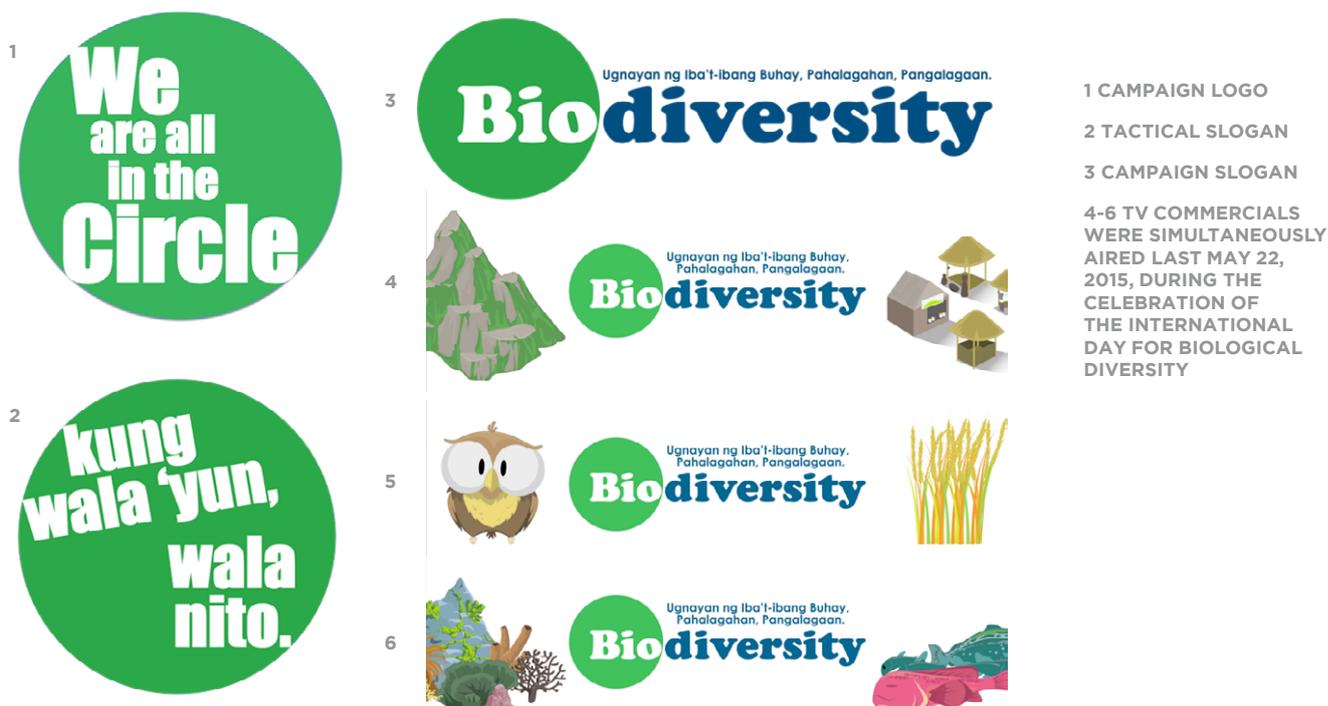
Its major programs include:



In its effort to address the impacts of climate change to biodiversity, BMB realize the need to inform the public about its value and its interconnectedness.

# WE ARE ALL IN THE CIRCLE BIODIVERSITY ADVOCACY CAMPAIGN

In May 22, 2015, BMB officially launched its national advocacy campaign #areyouinthecircle intended for the general public, particularly of the mass-based audience. BMB realizes the need to simplify the way biodiversity is advocated. The advocacy campaign used simple, relevant and benefit-oriented messages, to promote better understanding and appreciation, particularly of the mass-based audience.



## KEY GOVERNMENT INITIATIVES

Institutional mechanisms were put in place, with the creation of the **INTER-AGENCY COMMITTEE ON CLIMATE CHANGE** in 1991, the **PRESIDENTIAL TASK FORCE ON CLIMATE CHANGE (PTFCC)** in 2007 (later reorganized into the Office of the Presidential Adviser on Global Warming and Climate Change), and the designation of the DENR as the national authority on the Clean Development Mechanism (CDM)\* of the Kyoto Protocol.

In 2009, **RA 9729** or the **PHILIPPINE CLIMATE CHANGE ACT** was enacted which established the framework program for climate change, created the **CLIMATE CHANGE COMMISSION (CCC)**, and appropriated funds for implementation.

In addition to the government’s annual budget appropriations and other development assistance (ODA) received from external sources, financial resources for biodiversity-related initiatives have been augmented by the Integrated Protected Areas Fund (IPAF) created under the NIPAS Act. Environmental user fees paid by visitors are channeled into the IPAF, which has become a major source of fund to sustain activities such as MPA maintenance and some small local businesses in the area (Eisma-Osorio, 2008).

The United Nations Framework Convention on Climate Change (UNFCCC) is an international agreement that aims to stabilize greenhouse gas concentration in our atmosphere that would prevent dangerous anthropogenic (man-made) interference with the climate system. The Kyoto Protocol to the UNFCCC is an international agreement that aims to reduce greenhouse gases by imposing emission targets on Annex I or developed countries and giving carbon credits to Non-Annex I or developing nations that invest on projects that lower emissions in their own countries. These credits can be traded or sold to Annex I countries and will raise their carbon emission ceiling for a certain period. The Clean Development Mechanism (CDM) is a mechanism under the Kyoto Protocol that allows Annex I countries with a greenhouse gas reduction commitment to invest in projects that reduce emissions in Non-Annex I countries as an alternative to more expensive emission reduction efforts in their own countries.

# MILESTONES FOR HARMONIZING CLIMATE CHANGE MITIGATIONS ADAPTATIONS WITH BIODIVERSITY CONSIDERATIONS

YEAR OF ADOPTION	KEY OF POLICY FRAMEWORK	AREAS OF PRIORITY/ACTION
1997-2002	<b>NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN (NBSAP)</b>	Sets forth the Philippines' strategies and actions in pursuing biodiversity conservation
October 23, 2009	<b>CLIMATE CHANGE ACT</b>	An act mainstreaming climate change into government policy formulations, establishing the framework, strategy and program on climate change
2014-2025	<b>PHILIPPINE BIODIVERSITY STRATEGY AND ACTION PLAN (PBSAP)</b>	Integrates the Philippines' obligations under the CBD into its national development and sectoral planning frameworks through a renewed and participative biodiversity planning and strategizing process in a manner that is in line with the global guidance contained in the CBD's Strategic Plan for 2011-2020, including the 20-point Aichi Biodiversity Targets.
2011-2016	<b>PHILIPPINE DEVELOPMENT PLAN (PDP)</b>	Details the strategies, programs and projects that the country sets out to accomplish during the term of the incumbent president. By highlighting the protection and conservation of biodiversity as a special area of concern, the PDP acknowledges the threats to the country's natural resource wealth and uses this to inform priority actions to implement.
2010-2022	<b>NATIONAL FRAMEWORK STRATEGY ON CLIMATE CHANGE (NFSCC)</b>	Highlights the mutually beneficial relationship between climate change adaptation and mitigation and its critical aspects that are meant to be translated to all levels of governance alongside coordinating national efforts towards integrate ecosystem-based management. The framework was developed based on the country's climate change vulnerabilities, adaptation needs, and mitigation potential, all in accordance with international agreements.
2011-2028	<b>NATIONAL CLIMATE CHANGE ACTION PLAN (NCCAP)</b>	A plan translating the national climate change framework strategy and prioritizing food security, water sufficiency, ecological and environmental stability, human security, climate-smart industries and services, sustainable energy and knowledge and capacity development as the strategic direction for 2011 to 2028.

## PROTECTED AREAS: MEETING THE CHALLENGES OF CONSERVATION AND CLIMATE CHANGE

The DENR-BMB and the GIZ GmbH commissioned study on the National Management Effectiveness and Capacity Assessment (NMECA) under the PAME (Protected Areas Management Enhancement) Project showed that the state of the Protected Areas (PA) management in the Philippines was poor, with a 58% overall average METT findings across 61 PAs assessed.

One of the primary challenges found was the lack of regular and sustained funding evidenced by the fact that only 4 out of the 61 PAs are covered by Republic Acts (RAs) while the rest are sanctioned by Presidential Proclamations. Although all of the sample sites have Protected Area Management Boards (PAMBs), the low responsiveness and support from the LGUs and other political actors reduce the significance and effectiveness of the PAs. These financial and governance challenges impact the management of the sites.

It was also revealed that, in majority of the LGUs and communities, ownership of PA management is limited. For instance, in most sites, the PA zones have not been incorporated in the Comprehensive Land Use Plans (CLUPs) of the LGUs that have political jurisdictions of the PAs. There is also reported difficulty in harmonizing conflicting land and resource uses, boundary conflicts and zoning regimes by the PAMBs and Protected Areas Superintendents (PASus) in sites with either ancestral domain titles or ancestral domain claims. Only a few PAs have contributed to the local economy through ecotourism, supply of key ecosystems goods and services to downstream area and PA-dependent livelihoods. All of these challenges pose an urgent need for technical assistance support for capacity building, biodiversity assessment, planning and implementation.

The study also identified several best practices and innovation that hold potential as models for effective management. These include the increasing collaborative engagements in PA management, the harmonization of policy formulations, the networking with resource institutions, setting up of various schemes for PES, proper valuation methods enhanced by communication and social marketing campaigns and the effective practice of connecting PA site with PA clients and partners.

The NMECA Study team recommended five areas to serve as guide to the sector for effective biodiversity management: (1) policy governance improvement, (2) strengthening of the PA management planning process, (3) supporting or improving plan implementation processes, particularly a results-based monitoring and evaluation system (4) intensifying or mobilizing inputs for PA management and (5) measuring and reporting on the outcome.

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## IMPRINT

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