

The Biodiversity Finance Initiative - BIOFIN

PHILIPPINES

*Policy and Institutional Review
Final Report
November 2014*



Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety



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Preface

The Policy and Institutional Review Report–Philippines, is prepared as part of the Biodiversity Finance Initiative (BIOFIN).

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Abbreviations and Acronyms

ABS	Access and Benefits Sharing
AFMA	Agriculture and Fisheries Modernization Act of 1997
AO	Administrative Order
AUU	abandoned, underutilized and undeveloped
BFAR	Bureau of Fisheries and Aquatic Resources
BIOFIN	Biodiversity Finance Initiative
BMB	Biodiversity Management Bureau
BPI	Bureau of Plant Industry
CBD	Convention on Biological Diversity
CBFM	Community Based Forests Management
CENRO	Community Environment and Natural Resources Office
CLUP	Comprehensive Land Use Plan
CONAGEBIO	Comision Nacional para la Gestion de la Biodiversidad
DA	Department of Agriculture
DAR	Department of Agrarian Reform
DENR	Department of Environment and Natural Resources
DILG	Department of Interior and Local Government
DOE	Department of Energy
DOT	Department of Tourism
DOTC	Department of Transportation and Communications
DPWH	Department of Public Works and Highways
DSWD	Department of Social Welfare and Development
DTI	Department of Trade and Industry
ECC	Environmental Compliance Certificate
EIS	Environmental Impact Statement
EMB	Environmental Management Bureau
EO	Executive Order
ER	Energy Regulation
ERDB	Ecosystems Research & Development Bureau
FAO	Fisheries Administrative Order
FLAs	Fishpond Lease Agreements
FMB	Forest Management Bureau
FPIC	Free and Prior Informed Consent
FPF	Forest People's Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GMO	genetically modified organism
HEI	Higher Education Institution
HLURB	Housing and Land Use Regulatory Board
HVCDF	High Value Crops Development Fund
HVCDP	High Value Crops Development Program
IAS	Invasive Alien Species
ICBG	International Cooperative Biodiversity Group
ICCs	Indigenous Cultural Communities
INBio	Costa Rica's National Biodiversity Institute
IPAF	Integrated Protected Areas Fund

IPOPHIL	Philippines' Intellectual Property Office
IPRA	Indigenous Peoples Right Act of 1997
IPs	Indigenous Peoples
IRR	Implementing Rules and Regulations
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
LGU	Local Government Unit
LWUA	Local Water Utilities Administration
MARINA	Maritime Industry Authority
MBCO	Manila Bay Coordinating Office
MGB	Mines and Geosciences Bureau
MWSS	Metropolitan Waterworks and Sewerage Services
NBI	National Bureau of Investigation
NBSAP	National Biodiversity Strategies and Action Plan
NCIP	National Commission on Indigenous Peoples
NGAs	National Government Agencies
NGOs	Non-governmental Organizations
NGP	National Greening Program
NHA	National Housing Authority
NIPAS	National Integrated Protected Areas System
NLUA	National Land Use Act
NSO	National Statistics Office
NSWMC	National Solid Waste Management Commission
NWRB	National Water Resources Board
OP	Office of the President
PA	Protected Area
PBSAP	Philippine Biodiversity Strategy and Action Plan
PCAARRD-DOST	Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development of the Department of Science and Technology
PD	Presidential Decree
PGRFA	Plant Genetic Resources for Food and Agriculture
PIR	Policy and Institutional Review
PNOC-EDC	Philippine National Oil Company-Energy Development Corporation
PNP	Philippine National Police
POs	People's Organizations
RA	Republic Act
REECS	Resources, Environment and Economics Center for Studies, Inc.
SIFMA	Socialized Industrial Forest Management Agreement
TEEB	The Economics of Ecosystems and Biodiversity
TBGRI	Tropical Botanic Garden and Research Institute
TIEZA	Tourism Infrastructure and Enterprise Zone Authority
UN	United Nations
UNDP	United Nations Development Programme
US	United States
USD	United States Dollar
WAVES	Wealth Accounting and Valuation of Ecosystem Services
WWTF	Waste Water Treatment Facilities

POLICY AND INSTITUTIONAL REVIEW REPORT - PHILIPPINES
The Biodiversity Finance Initiative (BIOFIN)

INTRODUCTION

Background

Parties to the Convention on Biological Diversity (CBD), a multilateral treaty that recognizes the immeasurable value of biodiversity and ecosystems in sustaining human life, recognize that a significant gap remains in finance for biodiversity management. To define biodiversity finance needs and gaps with greater precision and determine related challenges and opportunities for resource mobilization, detailed national-level/bottom-up assessments were deemed necessary.¹

In this regard, the United Nations Development Programme (UNDP), in October 2012 launched the Biodiversity Finance Initiative (BIOFIN), a new global partnership seeking to address the biodiversity finance challenge in a comprehensive and systematic manner which aims to enable governments to construct a sound business case for increased investment in the sustainable and equitable management, protection and restoration of biodiversity and ecosystems.²

BIOFIN is managed by the UNDP Ecosystems and Biodiversity Programme, in partnership with the European Union and the Governments of Germany and Switzerland, who support the initiative with a total of USD 15 million.³ The Global Environment Facility is a further partner financing parallel in-country projects in support of the revision of the National Biodiversity Strategies and Action Plans (NBSAPs).

The BIOFIN works along two main axes:⁴

- (1) Globally-led development of a methodological framework which will be refined through regional and global learning.
- (2) Adaption and implementation of a methodological framework at national level through the following components:
 - (a) Analyze the integration of biodiversity and ecosystem services in sectoral and development policy, planning and budgeting;
 - (b) Assess future financing flows, needs and gaps for managing and conserving biodiversity and ecosystem services;
 - (c) Development comprehensive national Resource Mobilization Strategies to meet the biodiversity finance gap;

¹ The Biodiversity Finance Initiative, http://www.undp.org/content/undp/en/home/ourwork/environmentandenergy/projects_and_initiatives/biodiversity-finance-initiative/, (last accessed: 3 September 2014). See www.biodiversityfinance.net

² The BIOFIN Workbook, 10 February 2014 (version 7.0).

³ Figures as of May 2014. However further support is being sought.

⁴ The Biodiversity Finance Initiative, *supra* note 1.

- (d) Initiate implementation of the Resource Mobilization Strategy at national level.

The Philippines is one of the nineteen (19) pilot countries that are currently participating in BIOFIN.⁵

A BIOFIN Workbook⁶ has been provided to serve as guidance to countries on how to assess financial needs and how to mobilize the financial resources required to fully implement their NBSAPs and thereby achieve the Aichi Biodiversity Targets at a national level.

The BIOFIN Workbook consists of three major parts, the first of which is the Policy and Institutional Review (the PIR) covering **Workbooks 1a** and **1b**:

Part 1:	Review of Context
	- Review of biodiversity-related policies, institutions and expenditures
	Workbook 1a: <i>Policy and practice drivers of biodiversity and ecosystem change</i> Workbook 1b: <i>Institutional review</i> Workbook 1c: <i>Public and private expenditure and effectiveness trends</i>
Part 2:	Review of Costs
	- Calculating the costs of implementing each of the strategies within the revised NBSAP
	Workbook 2a: <i>Strategies, actions and costs</i> Workbook 2b: <i>Identifying finance gaps</i>
Part 3:	Development of a Finance Plan
	- Developing a resource mobilization plan
	Workbook 3a: <i>Potential biodiversity finance actors, opportunities, mechanism and revenue</i> Workbook 3b: <i>Resource mobilization strategy and action plan</i>

⁵ The other 18 countries are Botswana, Chile, Colombia, Costa Rica, Ecuador, Fiji, Guatemala, India (in discussion), Indonesia, Kazakhstan, Malaysia, Mexico, Peru, Seychelles, South Africa, Thailand, Uganda and Zambia.

⁶ The Philippine team is using BIOFIN Workbook, 10 February 2014 (version 7.0).

The details of the PIR which cover Workbooks 1a and 1b are detailed below:

- **Workbook 1a: Policy and Practice Drivers of Biodiversity and Ecosystem Change**
 - Biodiversity mainstreaming and natural resource use policies and practices that contribute to positive and negative trends in biodiversity
 - Protection policies and practices that contribute to positive and negative trends in biodiversity
 - Restoration policies and practices that contribute to positive and negative trends in biodiversity
 - Access and benefits sharing policies and practices that contribute to positive and negative trends in biodiversity
 - Overall policy environment factors that inhibit and promote biodiversity conservation, sustainable use and equitable benefits sharing

- **Workbook 1b: Institutional Review**
 - Contributions to, and responsibilities for, both a BAU scenario and a biodiversity investment scenario (implementation of the revised Philippine Biodiversity Strategy and Action Plan (PBSAP))
 - Existing and potential future distribution of the benefits of biodiversity and biodiversity investments
 - Existing and potential future distribution of the costs of biodiversity and biodiversity investments
 - Existing and potential future capacities related to finance resource management
 - Institutional roles and responsibilities for financial resource management

Methodology and Scope of the PIR

The BIOFIN Workbook (Version 7.0, 10 February 2014) served as a guide for the PIR process and was refined taking into consideration factors and processes that are relevant for the Philippine setting.

- To start off, an independent desk review of biodiversity-related laws in the Philippines was conducted with particular focus on financial provisions such as taxes, incentives, fee systems, penalties, among others, which contribute to improvement or deterioration of biodiversity indicators and which may be tapped in future as source of revenues. See **Annex A: Survey of Biodiversity-related Laws**.

- Envisioned to be a consultative and collaborative process by the national BIOFIN team, the implementation of the PIR engaged and communicated with stakeholders from various sectors⁷ where PIR workshops were conducted spanning 3 days covering the following:

Workbook 1A, Section 1 (Policy Review: Mainstreaming)	8 May 2014 Mabini Hall, Malacanang, Manila
Workbook 1A, Sections 2-4 (Policy Review: Protection, Restoration, ABS & Overall Policy Analysis)	19 June 2014 Estancia Resort Hotel, Tagaytay City
Workbook 1B (Institutional Review)	

- To facilitate the workshop discussions, pre-work was done on the workbooks based on research conducted by the Policy and Institutional Consultant, and based on the consultation results of the PBSAP. While pre-work was prepared, it was emphasized to the participants that they may revise, add to, or remove the results of the pre-work.
- Prior to every workshop, the BIOFIN national team likewise practiced filling-up the workbooks and prepared for possible questions/concerns of the workshop participants.
- At the start of every workshop, presentations were made on the PBSAP, the BIOFIN Methodology and the coverage of the specific workshop to remind the participants on the purpose of the workshop and to contextualize the progress of the project.
- For every workshop, there were 20-30 participants, divided into 5 groups with each group representing members of various sectors/backgrounds. A plenary session is conducted to discuss the group's outputs.
- The groups' outputs are collated and consolidated and later processed by the national Policy and Institutional Consultant in discussion with the national BIOFIN team.
- As part of the verification process, the summary of the PIR results/findings were presented on 14 August 2014 at the Baguio Country Club, Baguio City, where comments were likewise taken into consideration in this report.
- Modifications to PIR Workbooks:
 - As Workbook 1a, Section 2 (Protection) was limited to Protected Areas (PAs), and Workbook 1a, Section 3 (Restoration) was limited to lands (*i.e.*, government, private, community), the workbooks were expanded to cover ecosystems/themes based on PBSAP

⁷ Participants include ASEAN Centre for Biodiversity, Chamber of Mines of the Philippines, DA - Bureau of Animal Industry, DA - Climate Change Coordination Office, Department of Budget and Management, DENR Biodiversity Management Bureau, DENR Environmental Management Bureau, DENR Forest Management Bureau, DENR Forest Management Services, DENR Mines and Geosciences Bureau, Energy Development Corporation (EDC), FishBase Information and Research Group, Inc., Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), Haribon Foundation Inc., Leagues of Provinces of the Philippines, Metropolitan Waterworks and Sewerage System (MWSS), National Power Corporation, National Economic Development Agency, Office of the Presidential Adviser for Environmental Protection, Metro Manila Development Authority (MMDA), Philippine Chamber of Commerce and Industry (Toshiba), Philippine Tropical Forest Conservation Foundation, UP Law Center, UP Marine Science Institute, UP Los Baños, Philex Mining Corporation, Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development of the Department of Science and Technology (PCAARRD-DOST), among others.

categories (i.e., Agrobiodiversity, Coastal & Marine, Endangered & Threatened Species, Forests & Caves, PAs). See **Annex C: Results of Workbook 1a, Section 2 (Protection)** and **Annex D: Results of Workbook 1a, Section 3 (Restoration)**

- To streamline the workbook on Institutional Review, and to facilitate engagement with stakeholders, a more concise matrix that covers the key issues was utilized. See **Annex G: Results of Workbook 1b (Institutional Review)**.

Ultimately, the Key Results of the PIR are summarized into:

(1) *Policies that should be enhanced, improved, amended or modified existing to achieve positive and prevent negative biodiversity and ecosystem status and trends* (See **Table 1**);

(2) *Policies/Recommendations for Resource Mobilization* (See **Table 3**).

A summary on Policy Prescriptions (Reform, Development, Enhancement) specific to the PBSAP is likewise provided (See **Table 2**).

BIODIVERSITY TRENDS IN THE PHILIPPINES

The Philippines' global significance as a treasure trove of biodiversity is highlighted by the following facts:⁸

- It harbors the greatest diversity of life forms of all countries on earth on a per hectare basis;
- It has more than 52,177 described species, more than half of which are endemic or could not be found anywhere else;
- More than 1,130 terrestrial wildlife species have been recorded, half are endemic;
- It ranks 5th in the world in terms of the total number of plant species, with 10,000 vascular and 14,000 non-vascular, half of which are endemic;
- It is one of the most important centers of amphibian diversity with 101 species, and reptiles diversity with 258 species, in Southeast Asia, 68% of which are endemic;
- It is home to an astounding 576 species of birds (195 endemic and 126 are restricted range species) making the Philippines the 4th most important country in the world in bird endemism;
- With 174 indigenous mammal species (111 of which are endemic), it has the greatest concentration of terrestrial mammal diversity in the world;
- The rate of discovery of new species is one of the highest in the world, with a total of 36 species of herpetofauna discovered in the last 10 years.

Global trends show that biodiversity is in decline in most regions of the planet:⁹

⁸ Department of Environment and Natural Resources, Biodiversity Resources, <http://www.denr.gov.ph/index.php/component/content/article/18.html> (last accessed: 1 October 2014).

⁹ Convention on Biological Diversity, <http://www.cbd.int/gbo1/chap-01-02.shtml>, (last accessed: 14 September 2014).

- Of the known 4763 species of mammals, 87 are extinct while 24% are threatened;
- Among the 9,946 species of birds, 131 are extinct while 12% are threatened;
- There are 25,000 species of fish with 92 already extinct and less than 3% being threatened; however, less than 10% of the group has been assessed;
- There are 138,000 species of flowering plants with 86 being extinct and less than 3.5% of threatened status; however less than 9% of the group has been assessed.

A similar trend is found in the Philippines where experts in Philippine fauna in 2002, determined that about one-fourth of the 555 known major species found only in the Philippines were already threatened to extinction.¹⁰ Deforestation and habitat degradation over the last 12 years has likely increased this extinction threat for many species.

Fifty-eight out of the 206 known mammal varieties native to the Philippines were included in the 2008 International Union for Conservation of Nature (IUCN) Red Data List of Threatened Species, which is alarming considering that more than half of the Philippines mammalian species are found only in the country and nowhere else in the world.

One of the main drivers for the decline in number of species is habitat loss. Figures in the Philippines show that almost ninety-three (93%) of the original forest cover was lost since the 1900's.¹¹

The Philippines coral reef area is known to be one of the largest in the world at 22,500 sq. km, but by the 1980's, 40% of the coral cover was already in poor condition. By mid-2000, the share of poor cover had increased to 53% and the area under "excellent coral cover" was reduced to less than 1%.¹²

Of the 450,000 hectares of mangrove areas that the country had in the early 1900s, only 140,000 hectares were left at the turn of the century.

The PBSAP¹³ identifies the major threats to the important biodiversity of the country as follows:¹⁴

- a) Indiscriminate logging.
- b) Mining claims and rights overlap with defined areas for PAs and ancestral lands including those planned for conservation areas that threaten ecological sustainability. The Philippines is a significant producer of gold, copper, nickel and chromite and is also abundant in non-metallic and industrial minerals such as marble, limestone, clay, feldspar and aggregates. Since most of the country's priority conservation areas sit on top of huge mineral reserves, many significant biodiversity areas are in conflict with prescribed land uses and management objectives.

¹⁰ Lim, Mundita (Director of Biodiversity Management Bureau), State of the Biodiversity Address, 5 August 2014, Miriam College, Quezon City, Philippines.

¹¹ *Ibid.*, citing The Philippine Biodiversity Conservation Priority-Setting Program (2002).

¹² Lim, *supra* note 10.

¹³ September 2014 version.

¹⁴ PBSAP, Chapter 1 (as of September 2014).

- c) The burgeoning human population against a limited land base causes forestland conversion. With the country's annual population growth rate of 2.11 percent (National Statistics Office (NSO) 2010), poverty, landlessness and absence of secure tenure rights over secondary forest areas or logged-over areas have made them attractive for conversion into agricultural land and settlements.
- d) Unsustainable production and consumption of medicinal and ornamental plants and wild animals for trade and domestic use have contributed to habitat degradation and dramatic reductions in species populations.
- e) Narrowing of the food base/simplification of diets towards less complex and high energy diets as gleaned from the results of the Philippine National Nutrition survey. This nutrition transition, together with intensive agriculture and environmental pressures are also attributed to reduction in dietary diversity and the accompanying loss in agrobiodiversity and associated traditional knowledge.¹⁵
- f) Introductions of invasive alien species have also taken a toll, particularly in wetlands.
- g) Degradation from climate change.
- h) Weak enforcement and under-valuation of non-monetary values of natural resources.
- i) Weak integration of biodiversity concerns in landscape planning.

While the Philippines' biological resources have declined throughout the years, it is noteworthy that policies for the protection of biodiversity have also been enacted.

As an example, the National Integrated Protected Areas System (NIPAS) Act of 1992 provided a process for establishing, delineating and demarcating protected areas. Moreover, the Philippines has made headway in understanding its biological resources by partnering with the scientific community for the discovery of around 270 new endemic species in the last 25 years. Philippines is said to have one of the highest rate of new discoveries in the world with roughly 10% of total frogs, lizards and snakes newly discovered in the last ten years. In the Philippine flora, the country now has the highest number of Nephenthes, or pitcher plants, with 24 pitcher plant species making botanists worldwide label the country as the Nephenthes capital of the world.

The Department of Environment and Natural Resources (DENR) is the primary environment government agency in the Philippines¹⁶ principally responsible for the conservation, management, development and proper use of the country's environment and natural resources, specifically forest and grazing lands, mineral resources and lands of the public domain as well as licensing and regulation of natural resources.

The Biodiversity Management Bureau (BMB), a bureau under the DENR, through its Biodiversity Partnership Program, with the support of UNDP-Global Environment Facility (GEF), is also working closely with civil society groups and other government agencies such as the Housing and Land Use Regulatory Board (HLURB) to prepare a framework and develop methods to integrate biodiversity into Comprehensive Land Use Plans (CLUPs) and with the Department of Agriculture (DA), the Department of Trade and Industry (DTI) and the Department of Tourism (DOT) to promote biodiversity-friendly business enterprises.

¹⁵ PBSAP *citing* Gold and McBurney, 2010.

¹⁶ EO No. 192 (1987).

BMB's sectoral budget is said to be the smallest or second smallest in the DENR, though for 2014, their budget has reached the PhP 1 Billion Peso mark.

RESULTS OF THE POLICY AND INSTITUTIONAL REVIEW

Overall Policy

The overall policy of the State in relation to biodiversity is enshrined in Article 2, Section 16 of the Philippine Constitution which provides that "*[t]he State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature.*"¹⁷

Observations of the participants on the BIOFIN workshops on the overall policy of the country are as follows:

- Overemphasis on economic growth and production / consumption, rather than on sustainability
- Too much focus on employment generation than wealth creation and distribution
- Lack of sustainability indicators.
- Lack of statistical system to improve natural resource accounting.
- Lack of biodiversity inclusive impact assessment of policies plans and programs
- Lack of awareness of decision makers on biodiversity conservation.
- Lack of sharing and dissemination of technology and research breakthroughs.

Notably, the World Bank-funded Wealth Accounting and Valuation of Ecosystem Services (WAVES) project, The Economics of Ecosystems and Biodiversity (TEEB), and other similar projects, would facilitate or shed light on the above concerns.

In general, it is recommended to streamline the permitting process and reporting requirements, including inconsistencies in interpretation of laws by different government agencies, improving public participation in decision-making by educating the stakeholders and incorporating public values in decision-making, and performing regular evaluation of program accomplishments and progress. Additional incentives for industries involved in enhancement of environmental programs will likewise contribute to preserving biodiversity.¹⁸

¹⁷ The Philippine Constitution, Article 2, Section 16.

¹⁸ Pascual, Regina Victoria, Impacts of Philippine Environmental Regulatory Policies on Philippine National Oil Company-Energy Development Corporation (PNOC-EDC) Corporate Environmental Management Initiatives, April 2005.

Mainstreaming

The first part of the PIR seeks to identify the economic/development sectors that are considered as important in driving both positive and negative changes in biodiversity and ecosystem status and trends.

These sectors are:

- (1) *Industrial manufacturing and processing,*
- (2) *Forestry and forest-related activities (including industrial, subsistence, small-scale),*
- (3) *Agriculture (including small-scale, subsistence and commodity),*
- (4) *Tourism and Recreation,*
- (5) *Energy (including exploration, transportation, extraction practices),*
- (6) *Transportation and Infrastructure,*
- (7) *Water Management / Utilization,*
- (8) *Fisheries (including artisanal, subsistence and commercial),*
- (9) *Mining and extraction of materials (including commercial and small-scale operations),*
- (10) *Human Settlements,*
- (11) *Wildlife Management.*

The foregoing sectors can serve as entry points for possible **policy transformation** and **resource mobilization**.

Notably, certain practices, market forces, policies and policy factors recur across sectors as enumerated below which necessitate a review of national policies on biodiversity to address those that contribute to negative biodiversity and ecosystem status and trends, and promote/enhance those that contribute to positive biodiversity and ecosystem status and trends.

Sectoral practices, market forces, policies and policy factors that contribute to negative biodiversity and ecosystem status and trends	Sectoral practices, market forces, policies and policy factors that contribute to positive biodiversity and ecosystem status and trends
<ul style="list-style-type: none"> - <i>lack of knowledge, awareness,</i> - <i>lack of/weak coordination and enforcement,</i> - <i>high/market demand,</i> - <i>corruption,</i> - <i>poverty,</i> - <i>overpopulation,</i> - <i>overexploitation,</i> - <i>pollution.</i> 	<ul style="list-style-type: none"> - <i>the existence of legal/regulatory frameworks, and programs,</i> - <i>government and private initiatives,</i> - <i>fiscal and non-fiscal government incentives protecting biodiversity.</i>

See **Annex B** for the *Results of Workbook 1a, Section 1 (Biodiversity Mainstreaming and Sustainable Use)* which lists the 11 sectors and the corresponding practices, market forces, policies and policy factors that contribute to positive and negative biodiversity and ecosystem status and trends.

The policies, issues/areas of concern and the institutions/actors are discussed in detail per sector below.

Sectoral Policies and Institutions/Actors

1) *Industrial Manufacturing and Processing*

The salient policies¹⁹ in the Industrial Manufacturing and Processing sector are as follows:

- The *Ecological Solid Waste Management Act of 2000* (Republic Act (RA) 9003), which provides the legal framework for the country's systematic, comprehensive, and ecological solid waste management program that shall ensure protection of public health and the environment.²⁰

Local Government Units (LGUs) are primarily responsible for the implementation and enforcement of RA 9003. Pursuant to this, LGUs have enacted ordinances on recycling and prohibited use of plastics. The National Solid Waste Management Commission (NSWMC) under the Office of the President (OP) oversees the implementation of solid waste management plans and prescribe policies to achieve the objectives of RA 9003.²¹

Notably, RA 9003 provides Incentives²² such as Rewards, Fiscal Incentives, Tax and Duty Exemption, Tax Credits, Financial Assistance Program, etc., to individuals, private organizations and entities, including non-government organizations, that have undertaken outstanding and innovative projects, technologies, processes and techniques or activities in re-use, recycling and reduction.

Fines and Penalties are likewise provided by RA 9003 for violators thereof and Administrative Sanctions may be imposed for erring local government officials.

- The *Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990* (RA 6969) regulates, restrict or prohibit the importation, manufacture, processing, sale, distribution, use and disposal of chemical substances and mixtures that present unreasonable risk and/or injury to health or the environment²³
- The *Philippine Clean Water Act of 2004* (RA 9275) prescribes a policy of economic growth in a manner consistent with the protection, preservation and revival of the quality of our fresh,

¹⁹ For the details of the exact provision of the law/policy, please see **Annex A: Survey of Biodiversity-related Laws**.

²⁰ RA 9003, Section 2.

²¹ RA 9003, Sections 4 and 5.

²² RA 9003, Section 45.

²³ RA 9275, Section 2.

brackish and marine waters.²⁴ It aims to protect the country's water bodies from land-based pollution sources (industries and commercial establishments, agriculture and community/household activities).

RA 9275 provides for a comprehensive and integrated strategy to prevent and minimize pollution through a multi-sectoral and participatory approach involving all the stakeholders. Specifically, it requires DENR, in coordination with the National Water Resources Board (NWRB), to designate certain areas as water quality management areas, and to implement a wastewater charge system in those areas. The Act requires owners or operators of facilities that discharge effluents to secure a wastewater discharge permit.

- *Philippine Clean Air Act of 1999 (RA 8749)* – sets forth the “policy of balancing development and environmental protection.”²⁵ Further discussed under Transportation and Infrastructure.

The NSWMC reports that the country's solid waste generation per day is at 30,000 tons, including 73 percent from households, 26 percent from commercial establishments, institutions and industries, as well as 1 percent from healthcare facilities.²⁶ For the whole country, only half of the garbage generated is collected. Uncollected garbage ends up mostly in rivers, estuaries, and other water bodies, clogging the drainage system and leading to floods and the pollution of major water bodies. The problem of solid waste disposal is most serious in urban centers, particularly Metro Manila, because of high population density, high consumption rates, and the concentration of packaged goods, and packaging materials, some of which are toxic and non-biodegradable.

Under RA 9003, the LGU is responsible for collecting non-recyclable materials and special wastes, while barangay units are given the task and responsibility of collecting and segregating the biodegradable, compostable, and reusable wastes. Of Metro Manila's 17 cities and municipalities, 11 contract out garbage collection to the private sector and 6 collect garbage themselves as part of their local government functions.

While laws are in place, there are still some areas that are weak in policy implementation/monitoring (e.g., practice of segregation). Currently, waste disposal cost is cheap and there is no/low incentive for waste reduction. It is recommended for LGUs/local officials, in coordination with the DENR, specifically the Environmental Management Bureau (EMB), the national authority responsible for pollution prevention and control, and environmental impact assessment, to review the fees (e.g., Discharge Permit, Business Permits, etc.) that will take into consideration the cost corresponding to environmental protection and restoration caused by the Industrial, Manufacturing and Processing Industries. Evidently, businesses in the industrial manufacturing and processing industries will be affected and their corollary clients, and in turn, the end-users, may end up paying for the possible increase in cost. However, given the technology available in waste treatment and waste to energy, most investments will produce solid financial return on investment for the government and many private sector partners.

²⁴ RA 9275, Section 2.

²⁵ RA 8749, Section 22.

²⁶ Aguinaldo, 2008.

Likewise, poor packaging (use of non-biodegradable materials such as tetrapacks, Styrofoam and plastics) also negatively contribute to biodiversity and ecosystem status and trends. For example, more than 60% of the wastes found in Manila Bay were made of plastic (e.g., plastic bags, plastic wrappers, polystyrenes, plastic bottles, hard plastics, rubbers, metals and cans, glass, hazardous wastes, diapers and napkins, biodegradables, other discards).²⁷ Plastics dumped in bodies of water like Manila Bay can wreak havoc in marine ecosystems. Plastic bags and cans can choke marine animals and damage coral reefs. Ingested micro plastics can poison fish and sea turtles. According to Manila Bay Coordinating Office (MBCO), which has coordinative functions among all offices and agencies involved in the Bay's rehabilitation, restoration and conservation, the bay's coliform levels, an indicator of water pollution, is still in the millions.²⁸

While there are incentives in place for those who will undertake outstanding and innovative projects, technologies, processes and techniques or activities in re-use, recycling and reduction, this is an area that still needs to be further developed through financial and technical assistance.

Further, there is poor industrial planning in as much as there are no comprehensive zoning policies with respect to location of industries. Related to this is the proposed passage of National Land Use Act (NLUA) which is currently pending in Congress (NLUA shall be discussed further under Agriculture and Agrobiodiversity).

2) FORESTRY AND FOREST-RELATED ACTIVITIES (including industrial, subsistence, small-scale), PROTECTED AREAS and CAVES AND CAVE RESOURCES

(a) Forestry and forest-related activities

The salient policies for Forestry and forest-related activities are:

- *The Revised Forestry Code (PD 705)* which provides the legal basis for forestry policy and dates back to 1975. It provides for the framework for License agreement or License to Harvest Timber in Forest Lands, Industrial Tree Plantations, Tree Farms and Agro-Forestry Farms, the corresponding Incentives and Charges
- *Executive Order (EO) 263, 19 July 1995* which adopts the Community Based Forests Management (CBFM) as a national strategy to ensure the Sustainable Development of the Country's Forestlands Resources and Providing Mechanisms for its Implementation.

The CBFM Agreement is one entered into by and between the government and the local community which has a term of 25 years and is renewable for an additional 25 years. The CBFM

²⁷ Ranada, Pia, Plastic bags most common trash in Manila Bay – groups, <http://www.rappler.com/science-nature/environment/62397-plastic-bags-garbage-manila-bay> (last accessed: 21 October 2014).

²⁸ *Ibid.*

covers some 5.97 million hectares of forestlands involving 5,503 individual sites and directly benefiting more than 690,000 households.²⁹

- The *Chainsaw Act of 2002 (RA 9175) / DENR (Administrative Order) AO No. 2003-24* which regulates the Ownership, Possession, Sale, Importation and Use of Chainsaws and provides a system of fines and penalties for violations thereof.
- *EO 23* on the moratorium on cutting and harvesting timber.
- *EO 26, Series of 2011*, National Greening Program (NGP), which aims to grow 1.5 billion trees covering 1.5 million hectares from 2011 to 2016. NGP was allotted PhP 6.2 Billion in 2014 out of the PhP 23.36 Billion DENR total budget. The NGP is under 3 key agencies-- the DENR, the Department of Agriculture (DA) and the Department of Agrarian Reform (DAR), the agency responsible for land tenure improvement, development of program beneficiaries and agrarian justice delivery.

From 2005-2010, the Philippines' annual loss in forest cover was 0.73 percent, slightly lower than the deforestation rate of 0.83% from 1990-2010. As of 2010, the country has 76, 650 sq. km. of forests, representing about 25.7% of total land area of the Philippines.³⁰

The year 1950 or less coincides with the start of the first, small-scale commercial logging activities in the Sierra Madre which attracted lowland labour towards the forest-based industries and opened up roads facilitating human settlement and agricultural expansion in the forest lands.³¹ Human intrusion resulting from the burgeoning human population poses significant threat to forest habitats due to conversion into agricultural lands and settlements. Satellite maps show that the remaining forest habitats in key biodiversity areas are slowly being threatened by the infiltration of perennial crops such as coconut, abaca, as well as annual crops such as corn. Continuing habitat degradation and forestland conversion are major threats to Philippine biodiversity. Indiscriminate/illegal logging still persists. In particular, there is a high market demand for wood, especially fuel wood, high value crops, roads, aquaculture and residential areas.

While there are government reforestation efforts, the same needs further research and development. For example, on the NGP, civil society partners of DENR said the majority of trees being planted are exotic trees like mahogany, gmelina and rubber trees that are fast-growing but less adaptive to the Philippine environment. While 5 million seedlings of native or indigenous species were ordered, there were 25 million seedlings of exotic species.³² The rationale mentioned is that NGP is not just for reforestation but also for economic development and livelihood of upland farmers. It is recommended to consider native species like narra, dipterocarps, Philippine mahogany should be planted as they are more likely to survive and fulfill the mission of the NGP to restore Philippine forests. Introduce the native trees in phases. Also, given the high rate of deforestation, it may be much more cost effective to stop deforestation and the uneconomical loss of trees through

²⁹ Dugan, Patrick and Pulhin, Juan, Forest Harvesting in Community Based Forest Management in the Philippines: Simple Tools versus Complex Procedures, <http://www.fao.org/docrep/010/ag131e/ag131e10.htm> (last accessed: 20 October 2014).

³⁰ Food and Agriculture Organization of the United Nations 2010.

³¹ Van Den Top, Gerhard, The Social Dynamics of Deforestation in the Philippines (2002).

³² Is the government reforestation program planting the right trees?, <http://www.rappler.com/nation/51200-national-greening-program-native-trees> (last accessed: 6 August 2014).

slash and burn agriculture than investing in extensive reforestation after the initial forest cover is lost. The benefits to biodiversity of maintaining forest rather than replanting are substantial.

Also, rehabilitation of calamity-stricken areas needs further research and development, some of which are reported to result in low survival rates. In a 2008 review of mangrove rehabilitation program, major government-led projects had low survival rates of 10-20% mainly because of the use of inappropriate species and sites. For example, the favored but unsuitable *Rhizophora* (bakawan) are planted in sandy substrates of exposed coastlines instead of the natural colonizers *Avicennia* and *Sonneratia*. More significantly, planting sites are generally in the lower intertidal to subtidal zones where mangroves do not thrive rather than the optimal middle to upper intertidal levels.³³

It is therefore recommended to promote and invest on science-based method for restoration of the country's degraded lands and partnering of communities, establish standards and protocols to ensure high survival rate of indigenous species, and also look into research on use of indigenous species as planting material for reforesting.

The Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development of the Department of Science and Technology (PCAARRD-DOST), which coordinates, evaluates, and monitors the national research and development efforts in the agriculture, aquatic and natural resources sectors, Higher Education Institutions (HEIs), other National Government Agencies (NGAs), Non-governmental Organizations (NGOs), LGUs, Private sectors, Ecosystems Research & Development Bureau (ERDB), Consultants, Academe, LGUs, People's Organizations (POs), DENR, BMB may be considered as partners in this endeavor.

On the financing aspect, the government, through the DENR's Forest Management Bureau (FMB), tasked to undertake studies on the economics of forest-based industries, including the supply and demand trends on the local, national and international levels, identifying investment problems and opportunities in various areas, is recommended to review the possible increase in fees for permits/lease (e.g., annual rental of PhP 300/hectare on the 6th to 10th year for Socialized Industrial Forest Management Agreement (SIFMA) and PhP 150.00/hectare for 1-5 hectares for permits) as a means of increasing funding for biodiversity.³⁴ Naturally, increase in fees will eventually affect the permittees, the traders and at the end of the chain, the consumers/end-users.

(b) Protected Areas

- The *NIPAS Act of 1992* (RA 7586) provides the legal and development framework for the establishment and management of protected areas in the Philippines. The *Administrative Order No. 25, 29 June 1992* sets forth the NIPAS Implementing Rules and Regulations (IRR). Notably, the NIPAS Act has a trust fund known as the Integrated Protected Areas Fund (IPAF).

³³ Pinili, Liberty, Special Report: Green Shield, 7 February 2014, <http://www.sunstar.com.ph/cebu/local-news/2014/02/07/special-report-green-shield-328154> (last accessed: 22 October 2014).

³⁴ DENR, Primer on Community-Based Forest Management, <http://forestry.denr.gov.ph/primer.htm>. (last accessed: 9 August 2014).

The Philippines' 240 protected areas are classified as follows:

- Natural Parks/National Parks (61)
- Protected Landscapes (35)
- Protected Landscapes and Seascapes (21)
- Protected Seascapes (8)
- Natural Monument/Landmark (4)
- Resource Reserves (2)
- Natural Biotic Areas (4)
- Game Refuge and Bird/Wildlife Sanctuaries (14)
- Watershed Forest Reserves/Areas (56)
- Wilderness Areas (12)
- Mangrove Swamp Forest Reserves (23)

At the outset, establishment of PA under NIPAS Act, which is under the DENR, specifically BMB, is cumbersome and each step is costly, and the department/agency faces difficulties in completing the required procedures for all sites. BMB is government agency mandated to establish and manage protected areas, conserve wildlife, promote and institutionalize ecotourism, manage coastal biodiversity and wetlands ecosystems, conserve caves and cave resources, information and education on biodiversity and nature conservation, negotiate biodiversity-related multilateral environmental agreements, and monitor national implementation.

Since the enactment of the NIPAs Act, 5,449,662 hectares of Protected Areas have been set aside—4,071,934 hectares predominantly terrestrial and 1,377,727 hectares predominantly marine, and cover approximately 13.57% of the country's land area and 0.6% of the marine exclusive economic zone. Of the said area, 3,569,093 have been affirmed and proclaimed by the President for enactment in Congress as protected areas. Although they cover a large area, not all of these protected areas are considered well managed. In a study commissioned by the DENR and GIZ, a leading provider of international cooperation services for sustainable development, the current management effectiveness of the Philippines' PAs remains poor with an overall rating of 58%.³⁵

Enforcement capacity is weak, mainly because of the lack of manpower and resources for effective protection.³⁶ For every 2,300 hectares of PA, only one person is paid to oversee protection and management. On average, the government only spends P39.00 (equivalent roughly to USD0.88) per hectare for PA conservation.³⁷ Evidently, there is lack of funding for the management of PAs.

Entrance and user fee collections rates in PAs are also low and there is a lengthy bureaucratic process for fund release as fees are remitted to the national treasury before the share of each PA is sent back, a process of which takes around 6 months.³⁸ To address this concern, RA 10629 was enacted by Congress on 26 September 2013, which provides for the retention by the Protected Area Management Board of 75% of the revenues accruing to the IPAF. As of September 2014, the law has not been fully implemented as the implementing rules is yet to be issued.

³⁵ Lim, *supra* note 10.

³⁶ La Vina, Kho and Caleda, Legal Framework for PAs, Philippines, 14 March 2010.

³⁷ Rethinking the National Greening Program, <http://www.rappler.com/move-ph/ispeak/60948-rethinking-national-greening-program>, (last accessed: 6 August 2014).

³⁸ *Ibid.*

Currently, BMB has partnered with the Resources, Environment and Economics Center for Studies, Inc. (REECS), an all-Filipino consultancy firm on environmental and resource economics, to undertake a project on Sustainable Financing of Protected Areas.³⁹ Business plans were developed for 18 PAs and revenue generation schemes were designed in some of the sites. PES schemes for sustainable water supply and disaster risk reduction were also launched in 3 PAs: (1) Mountains Banahaw and San Cristobal Protected Landscape, (2) Mt. Kalatungan Range Natural Park, and (3) Mt. Malindang Range Natural Park. The project is expected to increase the potential of PAs to generate revenues through public-private partnerships, users' fees and providing ecosystem services, such as sustainable water supply and disaster risk reduction. An estimated annual income of up to PhP 373,055,240 may be generated by 15 of the 18 sites if collection is efficient.

Notably, there are no incentive provisions under the NIPAS Act but incentives may be found in other laws (e.g., pollution control activities under the Philippine Clean Air Act of 1999 or Clean Water Act of 2004).

Another major challenge in this matter is the NIPAS Act's unresolved overlaps with other laws, specifically the Fisheries Code with respect to coastal and marine conservation areas, and the Indigenous Peoples Right Act of 1997 (IPRA) concerning ancestral domains. It is recommended for the said overlaps to be reviewed and possibly resolved at the executive level through an EO, or amendment of the law, if necessary.

Further, law enforcement needs to be strengthened as political influences allowing illegal logging in PAs allegedly also play a role in negative biodiversity trends.⁴⁰

(c) Caves and Cave Resources

- The policy of the State to conserve, protect and manage caves and cave resources as part of the country's natural wealth⁴¹ is embodied in the *National Caves and Cave Resources Management and Protection Act of 2001* (RA 9072). The legislative act provides Prohibited Acts and Penalties and requires that money collected by DENR as permit fees be remitted to the National Treasury.

There are 1,919 identified caves⁴² in the Philippines although experts believe there are still more that are yet to be discovered. Of the identified caves, only 364 caves have undergone detailed

³⁹ Lim, *supra* note 10.

⁴⁰ Illegal logging takes toll on Palau, <http://newsinfo.inquirer.net/627733/illegal-logging-takes-toll-on-palau#ixzz39wtGKyM5> (last accessed: 10 August 2014).

⁴¹ RA 907.

⁴² Lim, *supra* note 10.

assessment.⁴³ Evidently funding is required for cave assessment to determine its classification and carrying capacity, among others, which should be raised through a combination of various financial mechanisms such as user's fees and grants, among others.

Caves and cave resources are under DENR, Community Environment and Natural Resources Office (CENRO), BMB, where applicable, and LGU where the cave is located. The DOT likewise plays a role where ecotourism is concerned and the tourists, local and international alike, stand to be affected in the possibility of increase of access fees.

3) AGRICULTURE (including small-scale, subsistence and commodity) and AGROBIODIVERSITY⁴⁴

The salient policies in the Agriculture or Agrobiodiversity are as follows:

- The *Organic Agriculture Act of 2010* (RA 10068) which sets forth the policy of the State to promote, propagate, develop further and implement the practice of organic agriculture in the Philippines that will cumulatively condition and enrich the fertility of the soil, increase farm productivity; reduce pollution and destruction of the environment, prevent the depletion of natural resources, further protect the health of farmers, consumers and the general public, and programs for the promotion of community-based organic agriculture systems which include, among others, farmer produced purely organic fertilizers such as compost, pesticides and other farm inputs, together with a nationwide educational and promotional campaign for their use and processing, as well as the adoption of organic agricultural system as a viable alternative shall be undertaken.⁴⁵
- The *High Value Crops Development Act of 1995* (RA 7900) which sets forth the policy of the State to accelerate the growth and development of agriculture in general, enhance productivity and incomes of farmers and the rural population, improve investment climate, competencies and efficiency of agribusiness and develop high-value crops as export crops that will significantly augment the foreign exchange earnings of the country, through an all-out promotion of the production, processing, marketing, and distribution of high-value crops in suitable areas of the country.

Sixty percent (60%) of the High Value Crops Development Fund (HVCDF) is mandated to be utilized for direct lending to high-value crop producers while the remaining forty percent (40%) shall be allocated by the DA to guarantee loans granted by private financial institutions toward high-value crop production through existing guarantee institutions

⁴³ DENR classifies additional 206 caves, <http://www.philstar.com/headlines/2014/05/02/1318457/denr-classifies-additional-206-caves> (last accessed: 9 August 2014).

⁴⁴ **Agrobiodiversity** comprises the diversity of genetic resources of plants, animals, and microorganisms that are important to food production and agriculture. A component of this are plant genetic resources defined as "any genetic material of plant of actual or potential value for food and agriculture" (ITPGRFA, 2004).

⁴⁵ RA 10068, Section 2.

Notably, incentives such as Crop Insurance, Credit Assistance, Credit Guarantee, Tax Exemption, among others, are extended to proponents.

The Priority Commodities of the High Value Crops Development Program (HVCDP) include Vegetables, Mango, Pineapple, Banana, Coffee, Rubber, Cacao and Rootcrops.⁴⁶

For 2012, the HVCDP has a total budget of PhP 48,881,000.00 which cover projects that provided seeds and planting materials needed in increasing production area in the region and also provided a holistic approach of development including agricultural machines, infrastructure, irrigation and post-harvest/processing facilities.⁴⁷

- The *Ecological Solid Waste Management Act of 2000* (RA 9003) and *Philippine Clean Water Act of 2004* (RA 9275) mentioned earlier are laws which are also relevant to the Agricultural/Agrobiodiversity sector.

In the Philippines, agriculture is considered to be an important driver for economic growth, poverty alleviation, and food security. Threats to agricultural biodiversity include indirect drivers of agrobiodiversity loss, as follows: 1) increasing demand for food, land, and other agro-based resources; 2) the pursuit of economic growth through intensive agriculture, export-oriented policies and promotion of potentially environment-damaging extractive industries such as mining; and, 3) lifestyle change of farmers brought about by urbanization. Direct drivers include: 1) habitat destruction via conversion of agricultural land to other uses; 2) the possible negative impacts of biotechnology; 3) natural calamities or extreme weather events associated with climate change; 4) introduction of invasive alien species, pests and diseases; and, 5) inherent institutional problems of concerned government agencies in conserving agrobiodiversity.⁴⁸

Notably, national programs are focused on increased rice production rather than promotion of traditional rice varieties that would promote biodiversity. There is a policy bias towards production of high-value crops that could negatively impact agrobiodiversity by curtailing the use of traditional food crops and encouraging the replacement of traditional varieties with those that are more popular for export.⁴⁹ The bias is manifested further by provision of farm loans and crop insurance for these popular and high-yielding varieties.⁵⁰

It is recommended to establish national policies and programs to provide appropriate support services to identified agricultural heritage communities that harbor high/threatened/unique agrobiodiversity through an incentive system or direct investments. Indigenous farming practices should also be documented and promoted. There should also be a policy on labeling of non-

⁴⁶ See <http://hvcdp.da.gov.ph> (last accessed: 22 October 2014).

⁴⁷ HVCDP 2012 Annual Accomplishment Report available at <http://rfu12.da.gov.ph/attachments/article/455/HVCDP.pdf> (last accessed: 22 October 2014).

⁴⁸ Philippine Clearing House Mechanism for Biodiversity, http://chm.ph/index.php?option=com_content&view=article&id=78%3Aagricultural-biodiversity-threats&catid=36%3AAbiodiversity-in-the-philippines&Itemid=124, (last accessed: 16 September 2014).

⁴⁹ Philippine Clearing House Mechanism for Biodiversity *citing* Altoveros and Borromeo (2007).

⁵⁰ *Ibid.*, *citing* Altoveros (2009).

genetically modified organism (GMO) products that will provide incentives and allow price premiums for biodiverse and organic products. The current policy should also be strengthened to introduce independent risk assessment of planned programs and inclusion of GMO concerns in the EIA system through a system of fees and penalties.

Another challenge in this sector is the overlapping of agricultural lands with biodiversity conservation areas (e.g., PAs, Key Biodiversity Areas (KBAs) and critical habitats). Land conversion is resorted to as a way of circumventing land reform. From 1991 to 2001, 600,000 hectares of Philippine agricultural land has been converted to other uses.⁵¹ This type of land conversion negatively impacts on biodiversity as traditional crops are replaced by plantation crops and non-food products. It is recommended therefore that established protocols for agricultural land use planning at national, regional and local levels are modified to take into account the conservation and sustainable use of agrobiodiversity.

It is also recommended to consider the passage of the National Land Use Act (NLUA)⁵² which seeks to provide for a rational, holistic and just management and allocation of the country's land resources and the introduction of land and physical planning as proper mechanisms for determining appropriate land use and to promote sustainable economic and social growth without compromising integrity and stability. It seeks to create a National Physical Framework Plan that will categorize land resources into 4 categories:

- a) Protection (for conservation)
- b) Production (for crops, fishery, livestock and poultry)
- c) Settlements development (for residential purposes)
- d) Infrastructure development (for transportation, communication, water resources, social infrastructure)

Another issue is the poultry and hog raisers' untreated sewage spilling into rivers and other bodies of water. The environmental effects associated with pig waste, especially those generated from confinement of factory pig farms, include the following: (a) air pollution and greenhouse gas emissions, (b) surface water eutrophication and groundwater contamination, (c) fish kills, (d) land degradation and long-run soil toxicity to plants and animals, and (e) habitat destruction and loss of biodiversity.⁵³

In the Philippines, indiscriminate dumping of massive hog waste and untreated wastewater directly into creeks, rivers and other receiving water bodies has resulted in the pollution of these surface waters. The underlying cause of this pollution is the lack of waste treatment facilities in most backyard and commercial hog farms in the country. Over time, such pollution has decreased the quality and productivity of affected water bodies and receiving waters are rendered unfit even for noncontact activities and irrigation. In extreme instances, surface waters have become biologically

⁵¹ Philippine Clearing House Mechanism for Biodiversity *citing* Bayan Muna in CEC-Philippines (2005).

⁵² As of September 2014, the NLUA in Senate, Senate Bill 3091, is pending third reading while its counterpart measure in the House of Representatives, House Bill 6545, has hurdled its final reading.

⁵³ Catelo, Maria Angeles, et al., Structural Changes in the Philippine Pig Industry and their Environmental Implications, International Food Policy Research Institute, July 2008.

dead such as in Central Luzon, Southern Luzon and Northern Mindanao.⁵⁴

Notably, the country's swine inventory as of 1 July 2014 reached 11.98 million heads. About 65% of the total stocks were raised in backyard farms and 35% were in commercial farms.⁵⁵ Untreated sewage spilling into rivers and other bodies are considered as violations of the Clean Water Act of 2004 and a concern is that apprehension of violators thereof will merely lead to dwindling supply of eggs, chicken and pork, and soaring prices etc.

It is recommended to encourage poultry and hog raisers to invest in facilities and technology aimed at mitigating the negative effects of commercial livestock pollution to the environment and public health. Also, DENR's free technical assistance to farm owners⁵⁶ in putting up wastewater treatment should be promoted and tax incentives for livestock farmers who will comply with the law and/or generate energy and fertilizer from Waste Water Treatment Facilities (WWTF)⁵⁷ should be provided. Further, government agencies and state universities should be provided with funds to pursue research on WWTF designs including those that are appropriate for small-scale farms.

The Department of Agriculture-Bureau of Plant Industry (BPI), Farmers' Association, DTI, LGUs, Community based organizations, Ornamental industry, Higher Education Institutions (HEIs), among others, are the institutions that will be affected by the above mentioned recommendations.

4) Tourism and Recreation

- *The Tourism Act of 2009* (RA 9593) sets forth the policy to "promote a tourism industry that is ecologically sustainable, responsible, participative, culturally sensitive, economically viable, and ethically and socially equitable for local communities."⁵⁸

RA 9593 mandates the DOT, in coordination with the DENR, to identify areas covered by the NIPAS with ecotourism potentials and cultural heritage value, and prepare policies, plans and programs for their development, preservation, operation or conversion into Tourism Enterprise Zones.⁵⁹ Two hundred thirty-five (235) PAs are within the identified 78 priority tourism development areas of the DOT. As of February 2014, the DENR and the DOT launched the updated National Ecotourism Strategy to ensure that the promotion of ecotourism sites in the

⁵⁴ *Ibid.*

⁵⁵ Philippine Statistics Authority, Swine Industry Performance Report, <http://www.bas.gov.ph/?ids=swinesituation> (last accessed: 30 September 2014).

⁵⁶ Invest in Waste Management Facilities, DENR tells Livestock Raisers, <http://www.denr.gov.ph/news-and-features/latest-news/1433-invest-in-waste-management-facilities-denr-tells-livestock-raisers.html> (last accessed: 6 August 2014)

⁵⁷ Obviar, Leo, Current Environmental Management Concerns in Livestock Production, http://www.livestockdialogue.org/fileadmin/templates/res_livestock/docs/2013_august_BKK/current_environmental.pdf (last accessed: 30 September 2014).

⁵⁸ RA No. 9593, Section 2(c).

⁵⁹ RA No. 9593, Section 33.

country will consider standards and criteria that will safeguard natural ecosystems and unique species.⁶⁰

Currently, ecotourism systems are not fully developed to capitalize on alternative revenue streams from ecotourism and ecosystem services. Insufficient costing of ecosystem services and policies are insufficient to ensure sustainable tourism to take place such carrying capacity, standards, lack of benefit sharing mechanism in ecotourism sites.

It is recommended to look into loans/ grants for the development of ecotourism sites and review User fees/ Tourism Infrastructure and Enterprise Zone Authority (TIEZA) Fees/LGU Fees for said purpose. Naturally, tourists/patrons of tourism sites stand to be affected by the possible increase in costs.

It is noteworthy that the share of the tourism industry to the total Gross Domestic Product (GDP) in 2012 was estimated at 6.0 percent amounting to PhP 631.1 Billion.⁶¹

5) ENERGY (including exploration, transportation, extraction practices)

The salient policies in the Energy sector are as follows:

- *Renewable Energy Act of 2008* (RA 9513), which provides for Incentives for Renewable Energy Projects and Activities.
- *Biofuels Acts of 2006* (RA 9367) which sets forth the policy of the State to reduce dependence on imported fuels with due regard to the protection of public health, the environment, and the natural ecosystems consistent with the country's sustainable economic growth that would expand opportunities for livelihood by mandating the use of biofuels.⁶² RA 9367 also provides an Incentive Scheme to encourage investments in the production, distribution and use of locally-produced biofuels⁶³
- *PD 1068* – provides Incentives for activities on Research, Development and Utilization of Non-Conventional Energy Resources⁶⁴
- *Energy Regulations (ER) No. 1-94* which provides Financial Benefits to Host Communities by setting aside One-centavo per kilowatt-hour (Po.01/kWh) of the Electricity Sales to Generation Facilities and/or energy resource development projects located in all barangays, municipalities, cities, provinces and regions.

Allocation:

⁶⁰ Lim, *supra* note 10.

⁶¹ See http://www.nscb.gov.ph/pressreleases/2013/NSCB-PR-20131205-ES4-20_PTSA.asp (last accessed: 20 October 2014).

⁶² RA 9367, Section 2.

⁶³ RA 9367, Section 6.

⁶⁴ PD 1068, Section 4.

Non-highly urbanized city: Host Barangay – 5%, Host Municipality/City – 35%, Host Province – 30%, Host Region – 10%

Highly urbanized city: Designated resettlement areas – 10%, Host barangays – 30%, Host Cities – 60%

- *Types of Funded Projects:* Streetlights, Seawalls, Environment Enhancement Projects, Livelihood Projects, Reforestation and Watershed Management Projects, Health Related Projects

- *Presidential Decree 910* which created the Energy Development Board and mandates that all fees, revenues and receipts of the Board from any and all sources ... shall form part of a Special Fund to be used to finance energy resource development and exploitation programs and projects of the government and for such other purposes as may be hereafter directed by the President.⁶⁵

Under the Department of Energy Act of 1992 (RA 7638), the Department of Energy (DOE) is mandated to prepare, integrate, coordinate, supervise and control all plans, programs and activities of the government relative to energy exploration, development, utilization, distribution and conservation.

Based on the projections of the DOE, renewable energy is foreseen to provide up to 40% of the country's primary energy requirements over the ten-year period beginning in 2003.⁶⁶

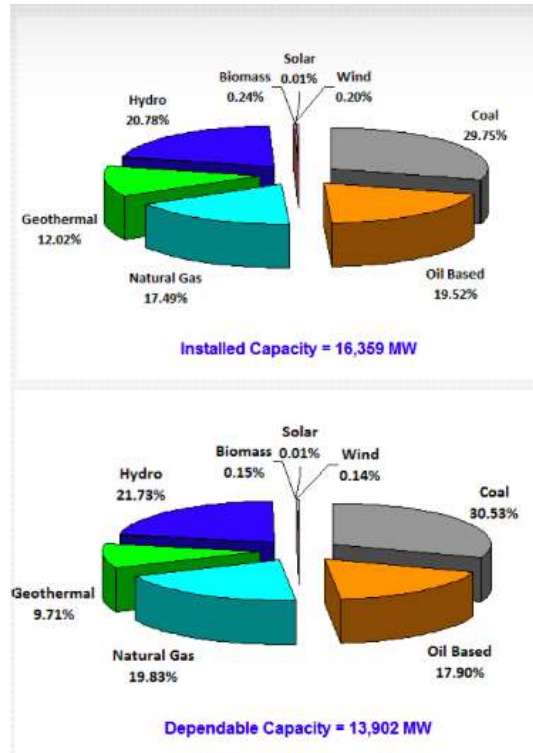
While incentives are available for renewable energy, they are not fully utilized or made available, resulting in energy scarcity in the country. It is recommended for the government to promote/encourage policies or programs to encourage alternative and sustainable sources of energy (e.g. wind, solar, geothermal energy) and provide financing mechanisms for investors in the renewable energy. There is also a lack of campaign on sustainable energy lifestyle.

Box 1: *Installed and Dependable Capacities, in megawatt (MW) Total Philippines (2010)*⁶⁷

⁶⁵ PD 910, Section 8.

⁶⁶ Renewable Energy, <https://www.doe.gov.ph/renewable-energy-res> (last accessed: 21 October 2014).

⁶⁷ Latest available figures; 2010 Philippine Power Sector Situationer, <https://www.doe.gov.ph/power-and-electrification/philippine-power-sector-situationer> (last accessed: 21 October 2014).



The energy sector has good potential for resource mobilization. For example, the Malampaya funds (Presidential Decree (PD) 910) may be tapped for biodiversity/environment project and coordination with the Energy Development Board or OP may be made in this regard.

ER 1-94 may also be tapped and communities should be encouraged to apply for financial support for environment management projects from the DOE.

6) Transportation and Infrastructure

The salient policies in the Transportation and Infrastructure are:

- The *Philippine Clean Air Act of 1999* (RA 8749), which contains the provisions on Prohibition on Smoking in Public,⁶⁸ Prohibition on Manufacture, Import and Sale of Leaded Gasoline and of Engines and/or Components Requiring Leaded Gasoline, among others.⁶⁹
- *PD 1586*, which sets forth the requirement on the Environmental Impact Statement (EIS)⁷⁰ in line with the "policy of the State to attain and maintain a rational and orderly balance between socio-economic growth and environmental protection."⁷¹

⁶⁸ RA 8749, Section 24.

⁶⁹ RA 8749, Section 29.

⁷⁰ PD 1586, Section 2.

⁷¹ PD 1586, Section 1.

- *The Philippine Fisheries Code of 1998 (RA 8550)*, which also prescribes requirements on EIS⁷² and Environmental Compliance Certificate (ECC).⁷³
- *Motor Vehicle User's Charge (RA 8794, 27 June 2000)*, which sets forth policy of the State to ensure the adequate maintenance of national and provincial roads through sufficient funding. The fund is under the Department of Public Works and Highways (DPWH), the engineering and construction arm of the Philippine government, and the Department of Transportation and Communications (DOTC).

The observations of stakeholders from the BIOFIN workshops indicated a lack of capacity of LGUs to adopt green technologies. Also, DPWH is perceived to be an agency which is not Biodiversity friendly and there are noted improper sitings of infrastructure in forests and coastal areas. It is recommended for BMB to coordinate with DPWH and DOTC to mainstream Biodiversity in their agencies and likewise request financial assistance from Motor Vehicle User's Charge for biodiversity projects. The government was estimated to have been able to collect PhP 90.7 Billion from 2001 to 2012 and the average annual collection was at around PhP 7 Billion,⁷⁴ which is at the disposal of DPWH and DOTC and not included in the annual budget.

In the marine transportation sector, there is also a need to establish policies and standards on the Release of ballast water and waste dumping which becomes for pathway for Invasive Alien Species (IAS) and pollution.

7) Water Management / Utilization

The salient policies on Water Management/Utilization are:

- *The Water Code of the Philippines (PD1067)*, which governs the ownership, appropriation, utilization, exploitation, development, conservation and protection of water resources and the rights to land related thereto.
- *The Agriculture and Fisheries Modernization Act of 1997 (RA 8435)*, which prescribes Protection of Watershed Areas.⁷⁵
- *The Clean Water Act of 1995*.

The NWRB was created in 1974 as the authoritative national organization to coordinate and integrate all activities in water resources development and management. Its main objective is to achieve scientific and orderly development and management of all water resources of the Philippines consistent with the principles of optimum usage, conservation and protection to meet present and future needs. The DENR likewise formulates policies for the enforcement of environmental protection and pollution control regulations and primarily responsible for the

⁷² RA 8550, Section 12.

⁷³ RA 8550, Section 13.

⁷⁴ Lawmakers want road users tax in budget, <http://www.philstar.com/headlines/2014/08/08/1355298/lawmakers-want-road-users-tax-budget> (last accessed: 9 August 2014).

⁷⁵ RA 8435, Section 12.

preservation of watershed areas and ensures water quality with respect to rivers, streams and other sources of water.

The following agencies are involved in water supply and distribution:⁷⁶

- (1) The Metropolitan Waterworks and Sewerage Services (MWSS) and its two concessionaires after it was privatized in 1997 for Metro Manila servicing 62.68% of its total population;
- (2) The Local Water Utilities Administration (LWUA) and its water district offices servicing 58% of the total urban population within its area of responsibility;
- (3) The Department of Interior and Local Government (DILG) and the DPWH and local governments which manage community water systems servicing 86.85% of the country's rural population;
- (4) The LGUs also regulate inasmuch as they have the right to an equitable share of the proceeds from the use and development of national wealth and resources within their respective territorial jurisdictions.⁷⁷

The main areas of concern are as follows:⁷⁸

- (1) *Watershed degradation* – Rapid deforestation coupled with inappropriate land use practices has led to soil erosion, siltation and sedimentation problems in the country's rivers, lakes and reservoirs resulting in more frequent and more severe flooding and reduced water supply in the dry season.
- (2) *Groundwater depletion and saline intrusion* – There is indiscriminate use of groundwater wells for residential or industrial use due to failure of water utility providers to service some areas resulting in uncontrolled withdrawal from groundwater aquifers and decline of groundwater levels as well as saltwater intrusion.
- (3) *Water Quality* – Pollution of water resources is due to uncontrolled industrial and agricultural development and inadequate waste disposal facilities. Runoff during floods flushes out contaminants and wastes such as industrial effluents, agricultural pesticide, traffic emissions, street refuse and uncollected garbage, which eventually find their ways into rivers and groundwater aquifers.

A holistic approach to water resources development including the tapping of groundwater and rainwater for water supply and the development of standards for the regulation of service efficiency are recommended. The development of sanitation and sewerage facilities, especially in coastal areas should also be encouraged and connection to sewerage facilities should be made compulsory.

On biodiversity financing, harnessing the resources of the private sector and local government units out of their Internal Revenue Allocation development funds. Notably, LGUs, as an operative principle of decentralization, are given the power to create and broaden their own sources of revenue and the right to a just share in national taxes and an equitable share in the proceeds of the utilization and development of the national wealth within their respective areas.⁷⁹

⁷⁶ Dayrit, Hector, The Philippines: Formulation of a National Water Vision, <http://www.fao.org/docrep/004/ab776e/ab776e03.htm> (last accessed: 9 September 2014).

⁷⁷ The Local Government Code of 1991, RA No. 7160, Section 18.

⁷⁸ Dayrit, *supra* note 77.

⁷⁹ Local Government Code of 1991, Chapter 1, Book 1, Section 3(d).

8) FISHERIES (including artisanal, subsistence and commercial)

The salient policies under the Fisheries sector are as follows:

- The *Agriculture and Fisheries Modernization Act of 1997* (AFMA) (RA 8435) aims "to ensure that all sectors of the economy and all regions of the country shall be given optimum opportunity to develop through the rational and sustainable use of resources peculiar to each area in order to maximize agricultural productivity, promote efficiency and equity and accelerate the modernization of the agriculture and fisheries sectors of the country."⁸⁰

The AFMA mandates all cities and municipalities to prepare their respective land use and zoning ordinance.⁸¹

The AFMA also provides Trade and Fiscal Incentives to enterprises engaged in agriculture and fisheries.⁸²

- The *Philippine Fisheries Code of 1998* (RA 8550) regulates all aquatic and fishery resources whether inland, coastal and fishing areas including but not limited to fishponds, fish pens and cages as well as all lands devoted to aquaculture or business relating to fishery, whether public or private. The law is enforced in all Philippine waters over which the Philippines has sovereignty and jurisdiction including the exclusive economic zone and continental shelf.

The law also mandates that the primary responsibility for protecting and managing fisheries and costal resources to be devolved to local governments. It allows the Secretary of the DA to prescribe Catch Ceiling Limitations.⁸³

The law prescribes Prohibition on IAS,⁸⁴ Incentives and Disincentives for Sustainable Aquaculture Practices.⁸⁵

- The *Marine Pollution Decree of 1976* (PD 979) aims to prevent and control the pollution of marine waters through the dumping of wastes and other matters that create hazards to human health and harm living resources and marine life.

- The *Fisheries Administrative Order (FAO) No. 197-1, Series of 2012*, which provides the Rules and Regulations governing Lease of Public Lands for Fishponds and Mangrove-friendly aquaculture.

⁸⁰ RA 8435, Section 5.

⁸¹ RA 8435, Section 10.

⁸² RA 8435, Section 109.

⁸³ RA 8550, Section 8.

⁸⁴ RA 8550, Section 10.

⁸⁵ RA 8550, Section 48.

- *FAO 233-2, Series of 2012* that prescribes the export fee per shipment of live, fresh, chilled, frozen and processed food fish and fishery products.
- *Philippine Clean Water Act of 2004 (RA 9275), Ecological Solid Waste Management Act of 2000 (RA 9003) and Local Government Code of 1991 (RA 7160)* mentioned in other sectors above are also relevant.

Bureau of Fisheries and Aquatic Resources (BFAR) is the agency tasked with the management and development of fisheries and aquatic resources, preparation and implementation of the National Fisheries Industry Development Plan, enforcement of laws and regulations (except in municipal waters) and the monitoring and regulation of import and export of fishery and aquaculture and aquaculture products and of fish processing establishments.

Delineation of municipal waters has always been cited as a source of conflict among government agencies/units.

Moreover, local governments are placed in a dilemma: pursue economic growth with the consequent negative environmental impact, or conserve natural resources and protecting ecosystems.

In 2002, overfishing was considered the largest threat (about 40%) to coral reefs in the Philippines, followed by destructive fishing practices (approximately 36%). Schemes for economic incentives to shift to more sustainable and less destructive means of fishing (e.g. quotas, no-take zones, and use of fish-friendly gear) should be developed.

It is recommended to improve capacities of local stakeholders and communities to control and limit overexploitation and destructive practices on fisheries, agriculture, aquaculture and forestry resources through policy reform and advocacy, trainings and intensive and extensive awareness raising activities. A functional permitting / regulating access systems in LGUs in priority coastal and marine ecosystems/areas should also be put in place. The permits / access fees must also reflect ecosystem services value.

On *FAO 197-1, 2012*, the carrying capacity should be taken into consideration in the prescribed commercial productions. Guidelines on biophysical reversion of abandoned, underutilized and undeveloped (AUU) fishponds to mangrove should also be adopted and implemented. Economic incentives should also be developed and sources of support to mobilize mangrove rehabilitation should be identified.

On the issue of coastal pollution by IAS, it is recommended for the country to ratify the Ballast Water Convention and allocate corresponding budget and to establish national capacity to comply with the Marpol and Ballast Water Convention.

9) MINING AND EXTRACTION OF MATERIALS (including commercial and small-scale operations)

The main policies are as follows:

- The *People's Small-Scale Mining Act of 1991* (RA 7076) with the main purpose to promote, develop, protect and rationalize viable small-scale mining activities in order to generate more employment opportunities and provide an equitable sharing of the nation's wealth and natural resources.
- The *Philippine Mining Act of 1995* (RA 7942) which prescribes a ten per centum (10%) share of all royalties and revenues to be derived by the government from the development and utilization of the mineral resources within mineral reservations shall accrue to the Mines and Geosciences Bureau to be allotted for special projects and other administrative expenses related to the exploration and development of other mineral reservations.⁸⁶

RA 7942 provides for:

- Royalty Payments for Indigenous Cultural Communities⁸⁷
- Provisions for the following Permits: Exploration, Quarry, Commercial Sand and Gravel, Exclusive Sand and Gravel, Government Gratuitous Permit, Private Gratuitous Permit, Guano, Gemstone Gathering, Ore Transport, etc.
- Government Share in Mineral Production Sharing Arrangement and Other Mineral Agreements⁸⁸
- Income Tax Holiday in reference to the Omnibus Investments Code⁸⁹
- Provisions for Fees such as Mine Wastes and Tailings Fees, Occupation Fees, etc.

RA 7942 likewise requires an environmental clearance certificate based on an environmental impact assessment, which requires national government agencies to maintain ecological balance and prior consultation with local government units, non-governmental and people's organizations and other concerned sectors of the community.⁹⁰

RA 7942 further requires contractors to undertake environmental protection and enhancement program which includes rehabilitation, regeneration, revegetation and reforestation of mineralized areas, slope stabilization of mined-out and tailings covered areas, aquaculture, watershed development and water conservation and socio-economic development.⁹¹

- *Executive Order No. 79-2012*, Institutionalizing and Implementing Reforms in the Philippine Mining Sector providing Policies and Guidelines to ensure Environmental Protection and responsible mining in Utilization of Mineral Resources, which specifies
 - No-go zones: PAs, Prime agricultural lands, tourism development areas, other critical - areas
 - Full Enforcement of Environmental Standards in Mining

⁸⁶ Philippine Mining Act of 1995, Chapter II, Section 5.

⁸⁷ Philippine Mining Act of 1995, Chapter III, Section 17.

⁸⁸ Philippine Mining Act of 1995, Chapter XIV.

⁸⁹ Philippine Mining Act of 1995, Chapter XV, Section 83.

⁹⁰ RA 7942, Section 70.

⁹¹ RA 7942, Section 69.

- Review of the Performance of Existing Mining Operations and Cleansing of Non-Moving Mining Rights Holders

- The *Water Code* - Tailings from mining operations and sediments from placer mining shall not be dumped into rivers and waterways without prior permission from the Council upon recommendation of the National Pollution Control Commission.⁹²

Mining is a major threat to biodiversity since most of the country's priority conservation areas sit on top of huge mineral reserves causing conflicts with prescribed land uses and management objectives. As of 2013, there are about 339 Mineral Production Sharing Agreements covering 6,020 sq. km.⁹³ Between 2004 and 2009, mining investments generated totaled USD 2.8 Billion. Export contributions rose to 5.4% with an equivalent value of USD 2.72 Billion from 1.8% or USD 637 million equivalent value. Employment in mining also increased from 104,000 in 2003 to 166,000 in 2009. Government revenues through taxes, fees and royalties from the minerals industry improved by 400% from PhP 1.5 Billion in 2003 to PhP 9.18 Billion in 2009.⁹⁴

The DENR is the primary government responsible for the conservation, management, development and proper use of the State's mineral resources including those in the reservations, watershed areas and lands of public domain. The Secretary of the DENR is given the authority to enter into mineral agreements on behalf of the government upon recommendation of the Director of the Mines and Geosciences Bureau (MGB).⁹⁵ The MGB is in charge of the administration and disposition of mineral lands and resources and monitors compliance of contractors of the terms and conditions of the mineral agreements.⁹⁶

The People's Small-Scale Mining Program is likewise implemented by the Secretary of the DENR designed to achieve an orderly, systematic and rational scheme for the small-scale development and utilization of mineral resources in certain mining areas in order to address the social, economic, technical and environmental problems connected with small-scale mining activities.⁹⁷

The DENR's Mining Reforms focus on the following:⁹⁸

- (a) Protect Investments
- (b) Industrialize the industry
- (c) Streamline the permitting system
- (d) Engage in pro-active information campaign
- (e) Implement "use it or lose it" policy
- (f) Establish pro-active public-private partnership.

⁹² The Water Code, Article 77.

⁹³ DENR-MGB 2013.

⁹⁴ Fian, Ricardo, Mining Reforms in the Philippines, available at <http://www.denr.gov.ph/news-and-features/features/15-mining-reforms-in-the-philippines.html> (last accessed: 23 October 2014).

⁹⁵ RA 7942, Section 8.

⁹⁶ RA 7942, Section 9.

⁹⁷ RA 7076, Section 4.

⁹⁸ Fian, *supra* note 95.

Stakeholders during the BIOFIN workshops raised that poverty and high demand, both international and local, for metals in jewelry and electronics and other industries were identified as a contributing force to mining. The use of toxic materials such as mercury for recovery and processing of metals was further identified as factors which contribute to negative biodiversity and ecosystem trends.

There is likewise an overlap on mining claims and rights with defined areas for PAs, ancestral lands including those planned for conservation areas that threaten ecological sustainability. Accordingly, inter-agency coordination is required to resolve this matter or resolution through an executive directive should be made.

Moreover, there should be a policy or guidelines for the determination of whether a certain area should be conserved for biodiversity or if the same should be approved for mining. Perhaps, this can be tackled in the enactment of the NLUA bill.

For areas that have been approved for mining, Biodiversity conservation should be incorporated in the grantee's practices such as species scoping and programs for species restoration should be established.

10) Human Settlements

The salient policies on Human Settlements are:

- The *Urban and Development and Housing Program (RA 7279)*, which sets forth the policy of the State to undertake, in cooperation with the private sector, a comprehensive and continuing Urban Development and Housing Program.
- *National Building Code of the Philippines (RA 6541)* which sets forth the policy of the State to safeguard life, health, property, and public welfare, consistent with the principles of environmental management and control; and to this end, make it the purpose of this Code to provide for all buildings and structured, a framework of minimum standards and requirements by guiding, regulating, and controlling their location, siting, design, quality of materials, construction, use, occupancy, and maintenance, including their environment, utilities, fixtures, equipment, and mechanical electrical, and other systems and installations.

The LGUs, NGAs, HLURB, National Housing Authority (NHA), the agency mandated to develop and implement a comprehensive and integrated housing program, the DILG, Department of Social Welfare and Development (DSWD), DENR, DPWH are the institutions/actors involved in this sector.

The major challenge in this sector is the conversion of Forest to Agricultural Lands to residential settlements to the extent of affecting the ecosystems primarily due to the burgeoning population and the corollary need for new settlement areas.

To mitigate the effect of this sector on biodiversity, it is recommended to look into Green technology to be integrated into the Building, Sanitation and Plumbing and Water Codes, and Greenline and cistern requirements in ECCs for high rise buildings, condominiums, residential, commercial and industrial establishments.

For waste management related issues on Human Settlements, please see discussion under Industrial Manufacturing and Processing.

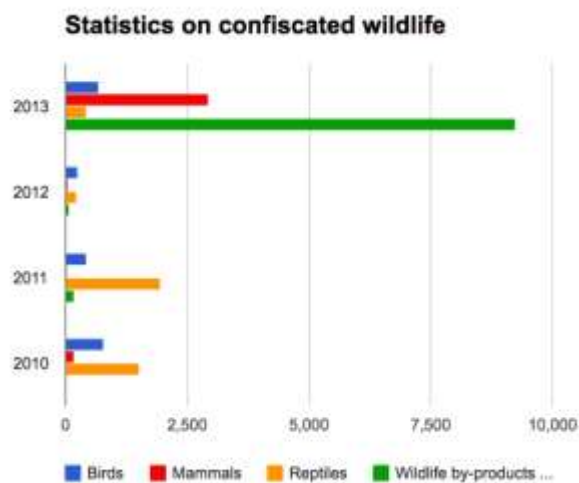
11) Wildlife Management

- The *Wildlife Resources Conservation and Protection Act (RA 9147)* seeks, among others, to conserve and protect wildlife species and their habitats and to regulate the collection and trade of wildlife.

Under RA 9147, the DENR has jurisdiction over all terrestrial plants and animal species, all turtles and tortoises and wetland species, including but not limited to crocodiles, waterbirds and all amphibians and dugong. The DA has jurisdiction over all declared aquatic critical habitats, all aquatic resources including but not limited to all fishes, aquatic plants, invertebrates and marine mammals except dugong. In Palawan, jurisdiction is vested to the Palawan Council for Sustainable Development.⁹⁹

In the first half of 2014, the Philippine government seized 523 animals and some 300 wildlife by-products such as stuffed turtles and carapaces. Among the latest species confiscated were serpent eagles, white bellied sea eagles, monitor lizards and crested goshawks.¹⁰⁰ Box 2 below shows the Statistics on Confiscated Wildlife covering 2010-2014.

Figure 2: Statistics on Confiscated Wildlife



⁹⁹ RA 9147, Section 4.

¹⁰⁰ Panela, Shaira, PHL's anti-wildlife trafficking efforts still lack teeth, 30 July 2014, available at <http://www.gmanetwork.com/news/story/372650/scitech/science/phl-s-anti-wildlife-trafficking-efforts-still-lack-teeth> (last accessed: 23 October 2014).

Stakeholders during the BIOFIN workshops raised that over-harvesting of resources such as medicinal and ornamental plants and wild animals for trade and domestic use has contributed to habitat degradation and dramatic reductions in species populations. There is a high market demand for “exotic” animals and low penalties are imposed in violations on collection of wildlife. There is likewise lack of capacity in enforcement.

There is a need for inter-agency coordination on enforcement and also restore degraded lands, which are habitat of these species. Notably, improvements have been observed since the DENR has teamed up with the National Bureau of Investigation (NBI), the agency responsible for the establishment and maintenance of a modern, effective and efficient investigative service and research agency, the Philippine National Police (PNP), the civilian national police force of the Philippines, and other local law enforcement agencies. Moreover, there should be more programs for the education of consumers.

ACCESS AND BENEFITS SHARING (ABS) IN THE PHILIPPINES

The Philippines currently does not have a comprehensive ABS Law on bioprospecting. Notably, House Bill No. 3163 is currently pending with Congress where the Philippine National Museum, the educational, scientific and cultural institution that acquires, documents, preserves, exhibits, and fosters scholarly study and public appreciation of works of art, specimens, and cultural and historical artifacts representative of our unique to the cultural heritage of the Filipino people and the natural history of the Philippines, is proposed to also establish “a system of checkpoints to determine the progress in the utilization of genetic resources in the relevant museum reference collections worldwide.”

Nonetheless, the Philippines has several policies in place in relation to bioprospecting:

- *Philippine Plant Variety Protection Act of 2002 (RA9168)* where the State recognizes that an effective intellectual property system in general and the development of new plant variety in particular is vital in attaining food security for the country. To this end, it shall protect and secure the exclusive rights of breeders with respect to their new plant variety particularly when beneficial to the people for such periods as provided for in this Act.
- *Traditional and Alternative Medicine Act of 1997 (RA 8423)* which sets forth the policy of the State to improve the quality and delivery of health care services to the Filipino people through the development of traditional and alternative health care and its integration into the national health care delivery system.

The law also seeks a legally workable basis by which indigenous societies would own their knowledge of traditional medicine. When such knowledge is used by outsiders, the indigenous

societies can require the permitted users to acknowledge its source and can demand a share of any financial return that may come from its authorized commercial use.

The law also provides Incentives for the Manufacturers of Traditional and Alternative Health Care Products (Manufacturers of traditional and alternative health care products like herbal medicinal plants shall enjoy such exemptions, deductions and other tax incentives as may be provided for under the Omnibus Investment Code, as amended)¹⁰¹ and a Traditional and Alternative Health Care Development Fund is prescribed.¹⁰²

- *Philippine Technology Transfer Act of 2009* (RA 10055), which aims to promote and facilitate the transfer, dissemination and effective use, management and commercialization of Intellectual Property.
- *The Indigenous Peoples Rights Act of 1997* (RA 8371) which provides access to biological and genetic resources and to indigenous knowledge related to the conservation, utilization and enhancement of these resources shall be allowed within ancestral lands and domains of Indigenous Cultural Communities (ICCs)/Indigenous Peoples (IPs) only with a free and prior informed consent of such communities, obtained in accordance with customary laws of the concerned community. *Free and Prior Informed Consent* (FPIC) refers to consensus of all members of the ICCs/IPs to; be determined in accordance with their respective customary laws and practices, free from any external manipulation, interference and coercion, and obtained after fully disclosing the intent and scope of the activity, in a language and process understandable to the community. *National Commission on Indigenous Peoples (NCIP) Administrative Order No. 3, Series of 2012* also issued the revised Guidelines on FPIC and related processes of 2012.

Stakeholders during the BIOFIN workshops raised the point that there is conflict between NIPAS Act and IPRA as regards the refusal of indigenous communities to allow biodiversity inventories in Cabangahan, Cantilan, Surigao del Sur. Also, the process of securing FPIC is long and tedious that discourages developers and projects, which sometimes results in consultation fatigue.

Another concern is the rampant presence of "Tribal dealers" and there are some doubts if monetary benefits are equitably distributed among IP communities or if resource custodians are aware of ABS rules.

For discoveries outside the purview of IP, patent rights may be filed through the Philippines' Intellectual Property Office (IPOPIL), which shall exclude others from using, making and/or selling one's invention during 20 years.

When it comes to biopiracy, it is said that the Philippines' blessing and bane is its rich biodiversity: the sheer abundance of local flora and fauna, indigenous knowledge, make for practically unlimited resources that are difficult if not impossible to track. In this regard, it is recommended for the government/private entities/NGOs to set-up biodiversity assessment and database and also to monitor progress of researches.

¹⁰¹ Section 14.

¹⁰² Section 15.

The ratification of the Nagoya Protocol is likewise recommended which provides a transparent legal framework to implement “the fair and equitable sharing of benefits arising out of the utilization of genetic resources,” which is one of the objectives of the UN CBD.

Box 4 below sets forth 3 models for prospecting rights and biological royalties, which the Philippines may adopt as may be applicable.

Box 3: Models for Prospecting Rights and Biological Royalties

PROSPECTING RIGHTS AND BIOLOGICAL ROYALTIES	
<p>Bioprospecting offers the tantalizing prospect of a self-financing and sustainable use of biodiversity and an incentive to promote its conservation.</p>	
<p>(1) Costa Rica Model¹⁰³</p> <ul style="list-style-type: none"> • One single authority, Costa Rica’s National Biodiversity Institute (INBio), a private but non-profit institution, in the bioprospecting process which lowered transactions costs (e.g., contract preparation and enforcement). Within 1 year, a bioprospecting contract can be concluded with INBio. • INBio bioprospects only within the country’s PAs. • Comision Nacional para la Gestion de la Biodiversidad (CONAGEBIO) – new governmental national focal point related to biodiversity and management. • Companies/research institutions who sign bioprospecting contracts with provider countries receive property rights for the purchased material in exchange for sample fees and up-front payments. • Protection against biopiracy: Interested parties do not collect bioprospecting material; they receive it directly from INBio. The legal origin of the biological material used for the patent is guaranteed. 	
<p>(2) Shaman Pharmaceuticals¹⁰⁴</p> <ul style="list-style-type: none"> • No other business other than bioprospecting. Will prosper only if it finds marketable 	

¹⁰³ Richerzhagen, Carmen and Holm-Mueller, Karin, The effectiveness of access and benefit sharing in Costa Rica: Implications for national and international regimes, *Ecological Economics* 53 (2005) 445-460.

¹⁰⁴ Shaman Pharmaceuticals has already closed in 1999. See <http://www.sfgate.com/business/article/Shaman-Quits-The-Drug-Business-2949240.php> (last accessed: 1 October 2014).

drugs.

- Has raised more than USD 100 Million in capital and has taken out patents on two drugs which are now in critical trials.
- Key Features:
 - (a) Focus on drugs from species that indigenous peoples believe to be efficacious;
 - (b) Shaman pools risk and profits among all its indigenous cooperators.
- Shaman also established the Healing Forest Conservancy, a non-profit organization that will channel a portion of the profits directly to cooperating indigenous peoples.

(3) Andes Pharmaceuticals

- Also dedicated to bioprospecting in cooperation with indigenous peoples.
- Builds capacity to screen biological materials for useful drugs in the country of origin of the material being tested. Not only would the country benefit from the institution building, but what had been costs (for screening) subtracted from possible profits would become income to the institution.
- The developing country institution and company hold the patent, a much more substantial percentage of the ultimate value of the drugs would stay in the country of origin.

(4) Kani Experience – India

- The Tropical Botanic Garden and Research Institute (TBGRI) in consultation with the tribal community Kani has agreed to share 50% of the license fee and royalty with the tribal community. In November 1997, a number of Kanis got together, and with the assistance from the TBGRI, registered a trust called the Kerala Kani Samudaya Kshema Trust, comprising 9 members, all of them tribals.
- The objectives of the trust deed include:
 - Welfare and development activities for the Kanis of Kerala;
 - Preparation of biodiversity register to document the Kanis' knowledge base;
 - Evolving and supporting methods to promote the sustainable use and conservation of biological resources.

(5) International Cooperative Biodiversity Group (ICBG)

- The ICBG was launched in 1991 with funding from the US government. The Suriname ICBG established a benefit sharing plan with a USD 60,000 total advance payment from Bristol Myers Squibb Pharmaceutical Research Institute into the Forest People's Fund (FPF) with additional contributions of USD 20,000 a year as the ICBG is renewed.
- The FPF is a mechanism through which up front benefits and future royalties from new drugs developed can be returned to the Saramaka people. The FPF also creates conservation incentives, finances sustainable management projects, provides research and technology exchanges and supports other socially and environmentally sound projects.
- If any products are commercialized from ethnobotanical collections, 50% of Suriname's share of any future royalties will go to the FPF and the other 50% will go to various ICBG partners in Suriname. If a drug is derived from collections, the FPF's share is reduced to 30% while 70% goes to other ICBG partners.

* Experts say that even if all the bioprospecting models find successful, the income streams will not be significant by themselves as a source of funding for conservation and that these should be

seen as complements to other efforts that are more immediate and more lucrative. Nevertheless, involvement in bioprospecting partnerships with business can produce benefits which can contribute some incentive to conserve biodiversity:

- bioprospecting can help countries develop capacity to add value to their genetic resources;
 - important skills can be developed in areas such as biotechnology and information technology;
- bioprospecting can support, at least potentially, various conservation activities and lead to the development of jobs and products for local markets.

Sources:

McNeely, Jeffrey and Weatherly, Paul, Innovative Funding to Support Biodiversity Conservation, International Union for Conservation of Nature-The World Conservation Union, (undated).

Ministry of Environment & Forests, Government of India, Biotechnology and Bioprospecting for Sustainable Development, February 2002.

OTHER BIODIVERSITY-RELATED LAWS/POLICIES

Notably, in addition to those mentioned above, other Biodiversity-related policies laws/policies exist:

- *Climate Change Act of 2009* (RA 9729) which aims to systematically integrate the concept of climate change in the policy formulation and development plans of all government agencies and units, to the end that the government will be prepared for the impact of climate change.
- *Environmental Awareness and Education Act of 2008* (RA 9512) which promotes environmental awareness through environmental education and covers the integration of such in the school curricula at all levels, be it public or private, including day care, preschool, non-formal, technical, vocational, indigenous learning, and out-of-school youth courses or programs.
- *Environmental Courts (Administrative Matter No. 07-11-12-SC)* where the Supreme Court designated 117 environmental courts to handle all types of environmental cases.
- *General Appropriations Act for 2014* (RA 10633), or in general, the yearly *General Appropriations Act of the Philippines*, which contains the national budget for the year. For 2014, the DENR was provided with a budget of PhP 23.3 Billion Pesos. All appropriation,

revenue or tariff bill are required to originate exclusively in the House of Representatives, but the Senate may propose or concur with amendments.¹⁰⁵

- *Omnibus Investment Code of 1987* (Executive Order No. 226) which encourages private Filipino and foreign investments in industry, agriculture, forestry, mining, tourism and other sectors of the economy which shall: provide significant employment opportunities relative to the amount of the capital being invested; increase productivity of the land, minerals, forestry, aquatic and other resources of the country, and improve utilization of the products thereof improve technical skills of the people employed in the enterprise; provide a foundation for the future development of the economy; meet the tests of international competitiveness; accelerate development of less developed regions of the country; and result in increased volume and value of exports for the economy.¹⁰⁶

The law likewise provides for Incentives to Registered Enterprises¹⁰⁷ such as Income Tax Holiday, Tax Credits, Exemption from Taxes and Duties, among others.

- **2014 Investment Priorities Plan**,¹⁰⁸ the country's investments blueprint, identifies the following sectors: manufacturing; agribusiness and fishery; services; economic and low-cost housing; energy; public infrastructure and logistics; and public private partnership projects. It is likewise reported that the 2014 will be effective for three (3) years to coincide with the end of the current Philippine Development Plan in 2016.¹⁰⁹

For reference, the **2013 Investment Priorities Plan** shows:

Preferred Activities: Agriculture/Agribusiness and Fishery, Energy, Green Projects
Mandatory List: Industrial Tree Plantation; Exploration, Mining, Quarrying and Processing of Minerals, Ecological Solid Waste Management, Clean Water Projects; Renewable Energy
Autonomous Region of Muslim Mindanao List: Agriculture, Agribusiness/Aquaculture & Fishery

Note however that the exploration, development and utilization of natural resources should belong to Filipino nationals either as individuals or juridical entities with an equity participation of 60% Filipino and 40% foreign.¹¹⁰

¹⁰⁵ The Philippine Constitution, Article VI, Section 24.

¹⁰⁶ Chapter 1, Article 2, Omnibus Investments Code of 1987.

¹⁰⁷ Title III, Omnibus Investments Code of 1987.

¹⁰⁸ 2014 Investment Priorities Plan has not been made available in the Bureau of Investment's website as of August 2014.

¹⁰⁹ Investment priorities plan to be finalized, 8 July 2014, <http://business.inquirer.net/174322/investment-priorities-plan-to-be-finalized> (last accessed: 10 August 2014).

¹¹⁰ Article XII, Section 2 of the 1987 Constitution provides:

"All lands of the public domain, waters, minerals, coals, petroleum and other mineral oils, all forces of potential energy, fisheries, forests or timber, wildlife, flora and fauna, and other natural resources are owned by the State. With the exception of agricultural lands, all other natural resources shall not

CONCLUSION

The Philippines, as one of the 17 mega diverse countries which together host about 70-80% of the world's biodiversity,¹¹¹ is tasked with a great challenge of preserving its biodiversity.

While there exist legal/regulatory frameworks, and programs, government and private initiatives, and government incentives in protecting biodiversity, there are still several sectoral practices, market forces, policies and policy factors that contribute to *negative* biodiversity and ecosystem status and trends. These latter include a lack of knowledge/awareness, lack of/weak coordination and enforcement, high/market demand, corruption, poverty, overpopulation, overexploitation, and pollution, among others. .

The PBSAP¹¹² details the major threats as indiscriminate logging, overlap of mining claims and PAs and ancestral lands, forestland conversion due to the burgeoning human population against a limited land base, unsustainable production and consumption, narrowing of food base/simplification of diets, IAS, degradation from climate change, weak enforcement and under-valuation of non-monetary values of natural resources, and weak integration of biodiversity concerns in landscape planning.

The PIR process shows that the Philippines has several laws and policies in place for the conservation and restoration of biodiversity. However, there remains a need to address those practices and policies that contribute to negatively impact biodiversity and ecosystem status and trends, and to promote/enhance those that contribute to positive to biodiversity and ecosystem status and trends.

For example, despite the general policy to protect the environment, several policies exist that serve as perverse incentives that contribute negatively to biodiversity (e.g., prescribed minimum commercial production in Fishpond Lease Agreements (FLAs), subsidies in favor of high-value crops or commercial varieties vis-à-vis traditional/indigenous types).

On the other hand, policies that contribute to positive biodiversity and ecosystem status and trends need to be further promoted. For example, despite the incentives provided by law in favor of proponents in the renewable energy or waste management, there still lacks investments or projects therein.

See **Table 1: Summary of Key Recommendations that should enhance, improve, amend or modify existing policies to achieve positive and prevent negative biodiversity and ecosystem status and trends** and **Table 2: Summary of Policy Prescriptions (Reform, Development, Enhancement) specific to the PBSAP** below.

be alienated. The exploration, development and utilization of natural resources shall be under the full control and supervision of the State. The State may directly undertake such activities, or it may enter into co-production, joint venture or production-sharing agreements with Filipino citizens or corporations or associations at least sixty per centum of whose capital is owned by such citizens..."

¹¹¹ <http://www.cbd.int/countries/profile/default.shtml?country=ph> (last accessed: 22 October 2014);

Department of Environment and Natural Resources, *supra* note 8.

¹¹² September 2014 version.

Towards increased resource mobilization for biodiversity and ecosystems management

Hence, there is a need to further finance biodiversity conservation. In the Philippines, there are several financing modalities in place to fund biodiversity conservation and even restoration (See **Table 3: Summary of Key Policies/Recommendations for Resource Mobilization**). However, there is a need to review many mechanisms to ensure that environmental fees properly reflect the cost of biodiversity conservation and restoration, where applicable.

Moreover, the Philippines is still at the early stage of establishing or gathering baseline data on biodiversity status and trends (e.g., caves, ecosystem services, ABS, etc.) that necessitate additional funding. Accordingly, there is a need to look at other funding modalities other than those available in existing laws/policies. Some *tools for Financing Conservation* are mentioned in **Box 4** below and may be further explored or detailed in the Resource Mobilization output.

Box 4: TOOLS FOR FINANCING CONSERVATION		
As a Public Good	Correcting Negative Externalities	As Business
<ul style="list-style-type: none"> • Taxation (National and International) - Examples include a tax on international air transportation, international tax on carbon and tax on foreign exchange transactions • Grants and Subsidies - The most promising sources of grants are the Global Environment Facility, national environment funds and private philanthropy • Loans from Multilateral Development Banks - The multilateral development banks such as the World Bank, the Inter-American Development Bank and the Asian Development Bank can provide loans and/or technical assistance grants for biodiversity conservation, mostly to governments. • Debt-related Instruments 	<ul style="list-style-type: none"> • Reforming the Tax System - There may be some systems of taxation that subsidize undesirable activities, such as consumption, environmental degradation, resource depletion or pollution. • Removing Damaging Subsidies - Raising money to protect the environment will be of limited utility if even more money is spent through harmful subsidies that destroy it. • Environmental Fines - Examples of the use of fines to raise revenue for environmental activities include water and pollution fines • Tradable Permits and Extraction Quotas - Upper limit is set on a certain activity such as air pollution (e.g., system allows those who underpollute to sell their excess permits to overpolluters and create an incentive for pollution 	<ul style="list-style-type: none"> • Credits and Loans to "Green Businesses" - Special lines of credit made available to small-and-medium scale enterprises in industries that are good for the environment can serve as an important incentive for biodiversity conservation. • Venture Capital for "Green Businesses" - Equity or quasi-equity investments via dedicated venture capital funds or sector investment funds • Guarantee for "Green Businesses" - Insurance coverage against some risk that businesses face • Securitization - an asset, debt, obligation or aggregation is turned into a marketable security (stock or bond). Anticipated revenues from national parks, water user fees or from bioprospecting may

<p>- This can be done by “swapping” the debt for conservation activities.</p>	<p>abatement).</p> <ul style="list-style-type: none"> • Deposit-Refund Schemes - Example is the system whereby a small surcharge is added to every glass bottle or aluminum sold. If and when consumers recycle the container, the surcharge is returned to them. • User Fees/Charges - Full-cost pricing of the public goods and services provided by the environment. • Joint Implementation and Carbon Sequestration - Signing of various international environmental conventions and discussions about flexible mechanisms for their implementation for the application of full-cost pricing at global scale. 	<p>be sold as securities.</p>
<p>Source: Bayon, Ricardo, et al., Financing Biodiversity Conservation, Inter-American Development Bank, June 2000.</p>		

Lastly, the realization from the BIOFIN workshops is that several, if not all sectors, positively or negatively affect biodiversity (See **Annex B: Results of Workbook 1a, Section 1 (Biodiversity Mainstreaming and Sustainable Use)**). As biodiversity is indeed a factor in the web of life, the loss of biodiversity, corollarily, would threaten our food supplies, opportunities for recreation and tourism, and sources of wood, medicines and energy, among others. Biological resources are the pillars upon which we build civilizations and protecting biodiversity should simply be in our self-interest.

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TABLES

Table 1: Summary of Key Recommendations that should enhance, improve, amend or modify existing policies to achieve positive and prevent negative biodiversity and ecosystem status and trends

Sector / Sub-sector	Policy / Practice	Impact	Recommendation	Institution(s) / Actor(s) Responsible	Institution(s) / Actor(s) Affected
<i>Industrial manufacturing and Processing</i>	No comprehensive zoning policies	Poor industrial planning	Passage of the National Land Use Act currently pending in Congress	Congress, Office of the President, LGUs	Businesses in the Industrial manufacturing and processing industries, Clients of the said businesses, End-users of products herein
<i>Forestry and Forest-related activities</i>	Pursuant to NGP, fast-growing trees are planted instead of indigenous types that are more adaptive to the Philippine environment	Planting of non-indigenous trees usually result in low survival rate and likewise negatively affects Biodiversity	Promote planting of indigenous species and incorporate the same into national programs	DENR, FMB, BMB, PCAARRD-DOST, ERDB, HEIs, other NGAs, NGOs, Consultants, Academe, POs, Private sector, LGUs	Timber industry specifically permittees, traders and eventually consumers/end-users of timber products
<i>Protected Areas</i>	Lengthy and cumbersome process of PA declaration under NIPAS Act	Lengthy and cumbersome process of PA declaration results in delay in affording full protection in biodiversity-rich areas	Review NIPAS Act to shorten process of PA declaration or process of providing protection	Congress, OP, DENR-BMB	DENR
	Overlap of NIPAS Act with other laws such as the Fisheries Code and the IPRA. Also overlap of PAs and agricultural	Overlap and conflicting mandates of agencies result in delay in, or lack of, protection in biodiversity-rich areas	Streamline agency mandates at the executive level, or congressional review of NIPAS Act, Fisheries	OP, Congress	DENR-BMB, DA, BFAR, NCIP

Sector / Sub-sector	Policy / Practice	Impact	Recommendation	Institution(s) / Actor(s) Responsible	Institution(s) / Actor(s) Affected
	areas.		Code and IPRA. Also, look into passage of NLUA.		
<i>Agriculture</i>	Lack of incentives for poultry and hog raisers who provide Waste Water Treatment Facilities	Pollution of surface waters	Provide technical assistance to poultry and hog raisers and incentives to those who will generate energy and fertilizer from Waste Water Treatment Facilities	DA, DENR	Poultry and hog raisers, Investors on poultry and hog industry
<i>Transportation and Infrastructure</i>	Lack of policy in DPWH and LGUs to adopt green technology	Improper siting of infrastructure in forests and coastal areas	Mainstream biodiversity in DPWH and LGUs	DENR, BMB	DPWH, MMDA, LGUs
	Lack of policies and standards on release of ballast water	Ballast water becomes pathway for IAS and pollution	Develop policy or standards on release of ballast water Ratify Ballast Water Convention and allocate corresponding budget	DOTC, Maritime Industry Authority (MARINA)	Marine vessel owners or management companies
<i>Water</i>	Lack of standards for regulation of service efficiency and holistic approach to water resources, which should include development of sanitation and sewerage facilities.	Poor management of water resources	Develop holistic approach to water resources development including the tapping of groundwater and rainwater for water supply and the development of standards for the	Congress, Office of the President, NWRB, MWSS, DENR	NWRB, MWSS, LGUs, water companies/ organizations

Sector / Sub-sector	Policy / Practice	Impact	Recommendation	Institution(s) / Actor(s) Responsible	Institution(s) / Actor(s) Affected
			regulation of service efficiency		
<i>Fisheries</i>	Lack of clear delineation on municipal waters	Conflict on municipal waters results in delay in protection of natural resources	Congressional review, or executive directive in areas to clarify delineation of municipal waters	Congress, Office of the President	BFAR, LGU, fisher folks
	Required level of commercial scale under FAO 197-1, 2012	Requiring minimum production commercial scales without taking into consideration the carrying capacity of an FLA may negatively affect biodiversity	Review provision on required level of commercial scale under FAO 197-1, 2012 which should take into consideration the carrying capacity of an FLA	BFAR, DENR	FLA holders
ABS	Lack of comprehensive ABS Law which would likewise include monitoring on bioprospecting	Country's natural resources are not fully utilized and no mechanism for the community to benefit from bioprospecting	Consider passage of comprehensive law on bioprospecting	Congress, Office of the President, NCIP	Community, IPs

Table 2: Summary of Policy Prescriptions (Reform, Development, Enhancement) specific to the PBSAP

NBSAP Thematic Areas	Policy Prescriptions (Reform, Development, Enhancement)/ Actions	Targets	Economic / Financial Implications
Agrobiodiversity	1. Agrobiodiversity concerns in the management plans of PAs or in conservation areas outside the PA system (i.e., managed by communities or LGUs)	Agrobiodiversity is included in protocols for preparation of area conservation plans of PAs, Community conserved areas and LGU conservation areas and in the prioritization of future key biodiversity areas	None
	2. Policies and programs are established to recognize and sustain communities practicing heritage agriculture which concurrently harbour agrobiodiversity	A Nationally Important Agricultural Heritage System is jointly established by stakeholder agencies to identify and recognize areas with high agricultural heritage value	possible incentive system
		Agrobiodiversity concerns are integrated in guidelines for the formulation of Ancestral Domain Sustainable Development Plans and documentation of Indigenous Knowledge System and Practices	None
		Agrobiodiversity is incorporated in at least 10 pilot sites of the DEP Ed IP education program as well as in selected Schools of living traditions located in areas with high Agrobiodiversity	None

NBSAP Thematic Areas	Policy Prescriptions (Reform, Development, Enhancement)/ Actions	Targets	Economic / Financial Implications
		Clear national policies and programs are established to provide appropriate support services to identified agricultural heritage communities that harbour high/threatened/unique Agrobiodiversity	possible incentive system; direct investments
	3.Agricultural policies are established to support agrobiodiversity and BD friendly mainstream agriculture	EO establishing an harmonized support system for Plant Genetic Resources for Food and Agriculture (PGRFA) is proclaimed	direct investments
		Mechanism is established to acknowledge and support efforts to document farmer actions to conserve PGRFA including through the development of community registries	
		Protocols for agricultural land use planning at national regional and local levels are modified to take into account the conservation and sustainable use of Agrobiodiversity	
		Organic agriculture - The Participatory guarantee system is incorporated as permanent	possible incentive system; direct investments

NBSAP Thematic Areas	Policy Prescriptions (Reform, Development, Enhancement)/ Actions	Targets	Economic / Financial Implications
		feature in OA	
		Current policy is strengthened to introduce independent risk assessment of planned programs and inclusion of GMO concerns in the EIA system	system of fees and penalties within EIA system
		Draft Legislation or Executive Order on labelling of GMO products is promulgated	incentives; price premiums
ABS	None		
Coastal - Climate Change	7. Harmonize/ complement BFAR, DENR, DILG policies on mangroves	Integrated mangroves and aquaculture systems are science-based (to remove adverse incentive to produce 1000kg fish/ha/yr FAO 197-1)	removal of perverse incentives
		Guidelines on biophysical reversion abandoned and underutilized AUU FLAs to mangrove are adopted and implemented ¹¹³	None
	8. Develop economic incentives and identify sources of support to mobilize mangrove rehabilitation (eg. Blue carbon)	Incentives for mangrove rehabilitation are developed	possible incentive system; direct investments; market development
		Perverse incentives are removed	removal of perverse incentives

¹¹³ Dr. Primavera, Manual on reversion of abandoned and illegal fish ponds to mangroves.

NBSAP Thematic Areas	Policy Prescriptions (Reform, Development, Enhancement)/ Actions	Targets	Economic / Financial Implications
Coastal - Pollution	1. Revise/update policy on dumping of solid waste/wastewater/ballast water by ships	If true, ban dumping of solid waste/wastewater/ ballast water by ships	fees and penalties
		National capacity to comply to Marpol and Ballast Water Convention is evaluated	none
		A budget for ratification of Ballast Water Convention is allocated	none
Coastal - Overexploitation	1. Improve capacities of local stakeholders and communities to control and limit overexploitation and destructive practices on fisheries, agriculture, aquaculture and forestry resources through policy reform and advocacy, trainings and intensive and extensive awareness raising activities	A functional permitting/regulating access systems in LGUs in priority coastal and marine ecosystems/areas is put in place	permits / access fees reflect ecosystem services value
	2. Manage a more equitable utilization of mineral resources (eg from mining and quarrying) and ensure minimal impact on aquatic biodiversity	A functional permitting/regulating access systems in LGUs in priority coastal and marine ecosystems/areas is put in place	same
		Perverse incentives and subsidies that promote mining and quarrying in priority /important riparian and coastal areas and extraction of associated biodiversity are reviewed and reduced	removal of perverse subsidies

NBSAP Thematic Areas	Policy Prescriptions (Reform, Development, Enhancement)/ Actions	Targets	Economic / Financial Implications
	10. Develop economic incentive schemes to support improved management of fisheries (including optimization of value chain and diversification)	Schemes for economic incentives to shift to less destructive means of fishing (use of fish-friendly gear) are developed	incentives; fees and penalties reviewed
		Adverse economic effects to fisherfolk of management actions (ie. closed seasons) are reduced	safety nets developed
Coastal Habitat	None		
Invasive Alien Species	None		
Inland Wetlands - Climate Change	2. Adopt green technology to promote sanitation in wetlands	Green technology is integrated into the Building, Sanitation and Plumbing and Water Codes	None
		Greenline and cistern requirements are included in ECCs for high rise buildings, condominiums, residential, commercial and industrial establishments	None
Inland Wetlands - Pollution			
Inland Wetlands - Overexploitation	6. Resolve reclamation issues	Reclamation guidelines based EO 798 are amended and implemented	none
Inland Wetlands - Habitat	NONE		
Forest Overexploitation	NONE		
Forest Habitat	1. Mainstream biodiversity conservation into national and local planning processes	By 2016, biodiversity and ecosystem services are incorporated and applied to the	appropriate pricing of ecosystem services reflected in fees/penalties

NBSAP Thematic Areas	Policy Prescriptions (Reform, Development, Enhancement)/ Actions	Targets	Economic / Financial Implications
		EIA and SEA processes	
	3. Ensure implementation of priority legislation and policies in PAs and other critical habitats	"Prior rights" as stated in Sec. 29, 2nd paragraph of Mining Act of 1995 is clarified with the Supreme Court	none
		A more coherent policy among DA, DAR and DENR on where to locate large scale plantations to avoid KBAs is formulated and implemented	none
Urban biodiversity	NONE		

Table 3: Summary of Key Policies/Recommendations for Resource Mobilization:

Sector / Sub-sector	Policy	Recommendation	Actor(s) / Institution(s) Responsible	Actor(s) / Institution(s) Affected
<i>Industrial manufacturing and Processing</i>	Waste Disposal Cost is cheap and there is no/low incentive for waste reduction.	Local officials to review fees to take into consideration the cost corresponding to environmental protection and restoration.	LGUs, DENR	Businesses engaged in the Industrial manufacturing and processing industry. End-users of products, community who will be affected with the cost.
<i>Forestry and Forest-related Activities</i>	Low fees for permits/lease which (e.g., annual rental of PhP 300/hectare on the 6 th to 10 th year for SIFMA and PhP 150.00/hectare for 1-5 hectares	Congress/government is recommended to review the possible increase in fees	Congress, government, DENR	Forest management grantees, timber industry and end-users who may be affected with additional cost

Sector / Sub-sector	Policy	Recommendation	Actor(s) / Institution(s) Responsible	Actor(s) / Institution(s) Affected
	for permits) which does not take into consideration the overall negative impact of harvesting timber			
<i>Protected Areas</i>	Lengthy process for fund release which makes resources for protection/restoration not easily accessible	Review process of fund disbursement for PA use and management	DBM, DOF	DENR-BMB
<i>Agriculture and Agrobiodiversity</i>	Incentives (loans, subsidies, etc.) in favor of high value crops and commercial varieties	Review related policies that focus on production to consider promotion of traditional varieties	DA	Farmers, HEI
<i>Tourism</i>	Nominal entrance fees in ecotourism sites which may not properly reflect the required conservation costs	Look into loans/ grants for the development of ecotourism sites and review User fees/ TIEZA Fees/LGU Fees for the said purpose	DOT, DENR, BMB	Tourists
<i>Energy</i>	Funds from the environment (Use of Malampaya funds in relation to PD 910) are used for non-environmental purposes	Tap Malampaya funds as possible source of funding for biodiversity projects	DENR	President, Energy Development Board
	Energy Regulation 1-94 – Financial Benefits to Host Communities [One-centavo per kilowatt-hour (Po.01/kWh) of the Electricity Sales] which may be tapped by host communities for environmental project	Guide host communities on utilization of funds for the environment	DENR-BMB, DOE, ERC	Host Communities
<i>Transportation and Infrastructure</i>	Motor Vehicle User's Charge which are being levied by	Tap funds which may be utilized for environmental	DENR, MMDA	DPWH, DOTC, road users

Sector / Sub-sector	Policy	Recommendation	Actor(s) / Institution(s) Responsible	Actor(s) / Institution(s) Affected
	government against road users	projects related to transportation		
	Fees and/or Penalties for Vessel Owners / management companies who may be found to violate guidelines on Ballast water		MARINA, Philippine Coast Guard (PCG), Philippine Navy	Vessel owners / management companies
<i>Water Management / Utilization</i>	Internal Revenue Allocation Development Funds	Tap IRA for water resource management	DENR, NWRB	LGUs
<i>Fisheries</i>	Permit/Access Fees	Permit or Access Fees must reflect ecosystem services value	BFAR, DENR, LGUs	Businesses in the Fisheries industry, Fisher folks
	Fiscal/economic incentives	Develop economic incentives for mangrove rehabilitation	BFAR, DENR, LGUs	Businesses in the Fisheries industry, Fisher folks
<i>Mining</i>	Royalties and revenues derived by government from development and utilization of mineral resources under Philippine Mining Act of 1995	Tap for biodiversity resource management	DENR, BMB	MGB, Mining communities
<i>Human Settlements</i>	Green technology is not integrated into Building, Sanitation, Plumbing and Water Codes/standards	Provide Incentives for the integration of green technology	DENR, LGU	Construction Industry

Table 4: Summary of Relevant Institution(s)/Actor(s) in the economic/development sectors considered as important in driving positive and negative changes in biodiversity

Sector	Relevant Institution(s)/Actor(s)
<i>Industrial Manufacturing and Processing</i>	NSWMC, OP, LGUs DENR, EMB, NWRB Manila Bay Coordinating Office Congress
<i>Forestry and Forest-related Activities</i>	DENR, FMB, BMB, DA, DAR PCAARRD-DOST, HEIs, NGAs, NGOs, LGUs, POs
<i>Protected Areas</i>	DENR, BMB President, Congress REECS, GIZ
<i>Cave and Cave Resources</i>	DENR, CENRO, BMB, LGUs DOT
<i>Agriculture and Agrobiodiversity</i>	DA, BPI, Farmers' Association, DTI, LGUs, HEIs, Community-based organizations, ornamental industry DENR
<i>Tourism</i>	DENR, DOT LGU, tourists
<i>Energy</i>	DOE, Energy Development Board
<i>Transportation and Infrastructure</i>	DPWH, DOTC BMB
<i>Water</i>	NWRB, DENR, MWSS, LWUA, DILG, DPWH, LGUs
<i>Fisheries</i>	DA, BFAR, LGUs
<i>Mining</i>	DENR, MGB, LGUs Congress
<i>Human Settlements</i>	LGUs, NGAs, HLURB, NHA, DILG, DSWD, DENR, DPWH
<i>Wildlife Management</i>	DENR, BMB, DA NBI, PNP

Table 5: Summary of Key Institutions

Name of Institution / Organisation	Acronym	Description
Congress		The national legislature of the country consisting of the Senate and House of Representatives.
Office of the President	OP	The OP leads the executive branch of the Philippine government. The DENR, DA, DAR, DOE, DILG, DOST, DOT, DOTC, DTI, among others, are under the OP.
Department of Environment and Natural Resources	DENR	The DENR is the primary environment government agency in the Philippines principally responsible for the conservation, management, development and proper use of the country's environment and natural resources, specifically forest and grazing lands, mineral resources and lands of the public domain as well as licensing and regulation of natural resources. Its bureaus include the BMB, EMB, MGB and FMB among others.
Biodiversity Management Bureau	BMB	BMB is the government agency mandated to establish and manage PAs, conserve wildlife, promote and institutionalize ecotourism, manage coastal biodiversity and wetlands ecosystems, conserve caves and cave resources, information and education on biodiversity and nature conservation, negotiate biodiversity-related multilateral environmental agreements, and monitor national implementation.
Environmental Management Bureau	EMB	The EMB is the national authority responsible for pollution prevention and control, and EIA.
Mines and Geosciences Bureau	MGB	The MGB is in charge of the administration and disposition of mineral lands and resources and monitors compliance of contractors of the terms and conditions of the mineral agreements.
Forest Management Bureau	FMB	The FMB provides support for the effective protection, development, occupancy management, and conservation of forest lands and watersheds. It is also tasked to undertake studies on the economics of forest-based industries, including the supply and demand trends on the local, national and international levels, identifying investment problems and opportunities in various areas.
Community Environment and Natural Resources Office	CENRO	CENRO refers to the DENR Office, headed by a Community Environment and Natural Resources Officer Appointed by the Secretary of DENR, which is responsible for the implementation of DENR policies, programs, project and activities and the enforcement of environment and natural resources laws and regulations in the community level.
National Solid	NSWMC	The NSWMC oversees the implementation of solid waste

Name of Institution / Organisation	Acronym	Description
Waste Management Commission		management plans and prescribes policies to achieve the objectives of the Ecological Solid Waste Management Act of 2000.
Local Government Units	LGUs	LGUs are primarily responsible for the implementation and enforcement of RA 9003. It is responsible for collecting non-recyclable materials and special wastes.
Barangay units		Barangay units are given the task and responsibility of collecting and segregating the biodegradable, compostable, and reusable wastes.
National Water Resources Board	NWRB	NWRB is the authoritative national organization to coordinate and integrate all activities in water resources development and management
Manila Bay Coordinating Office	MBCO	MBCO has coordinative functions among all offices and agencies involved in the Bay's rehabilitation, restoration and conservation. It also leads in the planning, monitoring, and review of all related activities and their progress.
Department of Agriculture	DA	The DA is the principal agency of the Philippine government responsible for the promotion of agricultural development.
Bureau of Plant Industry	BPI	BPI is an agency under the DA responsible for serving and supporting the Philippine plant industry sector.
Department of Agrarian Reform	DAR	DAR is the lead implementing agency of Comprehensive Agrarian Reform Program. It undertakes land tenure improvement, development of program beneficiaries and agrarian justice delivery.
Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development of the Department of Science and Technology	PCAARRD-DOST	PCAARRD-DOST formulates policies, plans and programs for science and technology-based research and development. It coordinates, evaluates and monitors the national research and development efforts in the agriculture, aquatic and natural resources sectors. It also allocates government and external funds for research and development and generates resources to support its programs.
People's Organization	POs	POs refer to private, nonprofit voluntary organization of members of an ICC/IP which is accepted as representative of such ICCs/IPs.
Resources, Environment and Economics Center for Studies	REECS	REECS is an all-Filipino consultancy firm on environmental and resource economics.
Deutsche Gesellschaft fur Internationale	GIZ	GIZ is a leading provider of international cooperation services for sustainable development.

Name of Institution / Organisation	Acronym	Description
Zusammenarbeit (GIZ) GmbH		
Department of Tourism	DOT	In coordination with the DENR, the DOT is mandated to identify areas covered by the NIPAS with ecotourism potentials and cultural heritage value, and prepare policies, plans and programs for their development, preservation, operation or conversion into Tourism Enterprise Zones.
Department of Trade and Industry	DTI	The DTI is the agency responsible for realizing the Philippines' goal of globally competitive and innovative industry and services sector that contribute to inclusive growth and employment generation.
Department of Energy	DOE	The DOE is mandated to prepare, integrate, coordinate, supervise and control all plans, programs and activities of the government relative to energy exploration, development, utilization, distribution and conservation.
Energy Development Board		The Energy Development Board is tasked to formulate policies and implement and coordinate all activities of the government relative to the exploration, exploitation and development, and extraction of energy resources including fossil fuels such as petroleum, coal, natural gas and gas liquids, geothermal resources, nuclear fuel resources, and other less conventional existing and potential forms of indigenous energy resources.
Department of Public Works and Highways	DPWH	The DPWH is the engineering and construction arm of the Philippine government mandated to undertake (a) the planning of infrastructure, such as national roads and bridges, flood control, water resources projects and other public works, and (b) the design, construction, and maintenance of national roads and bridges, and major flood control systems.
Department of Transportation and Communications	DOTC	The DOTC is the primary policy, planning, programming, coordinating, implementing and administrative entity of the executive branch of the government on the promotion, development and regulation of a dependable and coordinated network of transportation and communications systems, as well as in the fast, safe, efficient and reliable transportation and communications services.
Metropolitan Waterworks and Sewerage System	MWSS	MWSS is the country's chief agency on water and sewerage services. Its major policy is the proper operation and maintenance of waterworks system to ensure an uninterrupted and adequate supply and distribution of potable water for domestic and other purposes and the proper operation and maintenance of sewerage systems in its service area which includes the whole of Metro Manila and parts of Cavite and Rizal.

Name of Institution / Organisation	Acronym	Description
Local Water Utilities Administration	LWUA	LWUA is a government-owned and controlled corporation with a specialized lending function mandated by law to promote and oversee the development of water supply systems in provincial cities and municipalities outside of Metropolitan Manila.
Department of the Interior and Local Government	DILG	The DILG is the executive branch of the government responsible for promoting peace and order, ensuring public safety and strengthening local government capability aimed towards the effective delivery of basic services to the citizenry.
Housing and Land Use Regulatory Board	HLURB	HLURB is the agency responsible to promulgate and enforce policies on land use, housing and homeowners associations which promote inclusive growth and economic advancement, social justice and environmental protection for the equitable distribution and enjoyment of development benefits.
National Housing Authority	NHA	NHA is mandated to develop and implement a comprehensive and integrated housing program which shall embrace, among others, housing development and resettlement, sources and schemes of financing and delineation of government and private sector participation.
Department of Social Welfare and Development	DSWD	The DSWD is the agency tasked to develop, implement and coordinate social protection and poverty reduction solutions for and with the poor, vulnerable and disadvantaged.
National Bureau of Investigation	NBI	The NBI is responsible for the establishment and maintenance of a modern, effective and efficient investigative service and research agency.
Philippine National Police	PNP	PNP is the civilian national police force of the Philippines.

ANNEXES

ANNEX A

SURVEY OF BIODIVERSITY-RELATED LAWS

INDUSTRIAL MANUFACTURING AND PROCESSING (food manufacture, radio, chemical, petroleum, beverage)

Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (RA 6969)

- “policy of the State to regulate, restrict or prohibit the importation, manufacture, processing, sale, distribution, use and disposal of chemical substances and mixtures that present unreasonable risk and/or injury to health or the environment; to prohibit the entry, even in transit, of hazardous and nuclear wastes and their disposal into the Philippine territorial limits for whatever purpose; and to provide advancement and facilitate research and studies on toxic chemicals.”¹¹⁴

Philippine Clean Water Act of 2004 (RA 9275)

- “policy of economic growth in a manner consistent with the protection, preservation and revival of the quality of our fresh, brackish and marine waters. To achieve this end, the framework for sustainable development shall be pursued.”¹¹⁵

Ecological Solid Waste Management Act of 2000 (RA 9003)

- adopt a systematic, comprehensive and ecological solid waste management program¹¹⁶
- **Role of LGUs in Solid Waste Management** -- LGUs shall be primarily responsible for the implementation and enforcement of the provisions of this Act within their respective jurisdictions. Segregation and collection of solid waste shall be conducted at the barangay level specifically for biodegradable, compostable and reusable wastes: *Provided*, That the collection of non-recyclable materials and special wastes shall be the responsibility of the municipality or city.¹¹⁷
- **Requirements for the Segregation and Storage of Solid Waste** - -- The following shall be the minimum standards and requirements for segregation and storage of solid waste pending collection:
(a) There shall be a separate container for each type of waste from all sources: *Provided*, That in the case of bulky waste, it will suffice that the same be collected and placed in a separate and designated area; and
(b) The solid waste container depending on its use shall be properly marked or identified for on-site collection as "compostable", "non-recyclable", "recyclable" or "special waste",...¹¹⁸
- **Prohibition Against the Use of Open Dumps for Solid Waste** -- No open dumps shall be established and operated, nor any practice or disposal of solid waste by any person, including LGUs, which constitutes the use of open dumps for solid waste, be allowed after the effectivity of this Act:

¹¹⁴ RA 6969, Section 2.

¹¹⁵ RA 9275, Section 2.

¹¹⁶ RA 9003, Section 2.

¹¹⁷ RA 9003, Section 10.

¹¹⁸ RA 9003, Section 22.

Provided, That within three (3) years after the effectivity of this Act, every LGU shall convert its open dumps into controlled dumps, in accordance with the guidelines set in Section 41 of this Act: *Provided, further*, That no controlled dumps shall be allowed five (5) years following effectivity of this Act.¹¹⁹

- **Incentives¹²⁰** – (a) Rewards, monetary or otherwise, shall be provided to individuals, private organizations and entities, including non-government organizations, that have undertaken outstanding and innovative projects, technologies, processes and techniques or activities in re-use, recycling and reduction. Said reward shall be sourced from the Fund herein created.

(b) An incentive scheme is hereby provided for the purpose of encouraging LGUs, enterprises, or private entities, including NGOs, to develop or undertake an effective solid waste management, or actively participate in any program geared towards the promotion thereof as provided for in this Act.

(1) Fiscal Incentives – Consistent with the provisions of E.O. 226 otherwise known as the Omnibus Investments Code, the following tax incentives shall be granted:

(a) Tax and Duty Exemption on Imported Capital Equipment and Vehicles – Within ten (10) years upon effectivity of this Act, LGUs, enterprises or private entities shall enjoy tax and duty-free importation of machinery, equipment, vehicles and spare parts used for collection of solid wastes; *Provided*, that the importation of such machinery, equipment, vehicle and spare parts shall comply with the following conditions:

(i) They are not manufactured domestically in sufficient quantity, of comparable quality and at reasonable prices;

(ii) They are reasonably needed and will be used actually, directly and exclusively for the above mentioned activities;

(iii) The approval of the Board of Investment (BOI) of the DTI for the importation of such machinery, equipment, vehicle and spare parts: *Provided, further*, That the sale, transfer or disposition of such machinery, equipment, vehicle and spare parts, without prior approval of the BOI, within five (5) years from the date of acquisition shall be prohibited, otherwise, the LGU concerned, enterprises or private entities and the vendee, transferee or assignee shall be solidarily liable to pay twice the amount of tax and duty exemption given it.

(b) Tax Credit on Domestic Capital Equipment – Within ten (10) years from the effectivity of this Act, a tax credit equivalent to 50% of the value of the national internal revenue taxes and customs duties that would have been waived on the machinery, equipment, vehicle and spare parts, had these items been imported shall be given to enterprises, private entities, including NGOs, subject to the same conditions and prohibition cited in the preceding paragraph.

(c) Tax and Duty Exemption of Donations, Legacies and Gift – All legacies, gifts and donations to LGUs, enterprises or private entities, including NGOs, for the support and maintenance of the program for effective solid wastes management shall be exempt from all internal revenue taxes and customs duties, and shall be deductible in full from the gross income of the donor for income tax purposes.

(2) Non-Fiscal Incentives – LGUS, enterprises or private entities availing of tax incentives under this Act shall also be entitled to applicable non-fiscal incentives provided for under E.O. 226, otherwise known as the Omnibus Investments Code.

The Commission shall provide incentives to businesses and industries that are engaged in the recycling of wastes and which are registered with the Commission and have been issued ECCs in accordance with the guidelines established by the Commission. Such incentives shall include simplified procedures for the importation of equipment, spare parts, new materials, and supplies, and for the export of processed products.

¹¹⁹ RA 9003, Section 37.

¹²⁰ RA 9003, Section 45.

(3) Financial Assistance Program – Government financial institutions such as the Development Bank of the Philippines (DBP), Landbank of the Philippines (LBP), Government Service Insurance System (GSIS), and such other government institutions providing financial services shall, in accordance with and to the extent allowed by the enabling provisions of their respective charters or applicable laws, accord high priority to extend financial services to individuals, enterprises, or private entities engaged in solid waste management.

(4) Extension of Grants to LGUs. – Provinces, cities and municipalities whose solid waste management plans have been duly approved by the Commission or who have been commended by the Commission for adopting innovative solid waste management programs may be entitled to received grants for the purpose of developing their technical capacities toward actively participating in the program for effective and sustainable solid waste management.

(5) Incentives to Host LGUs...

Prohibited Acts. – The following acts are prohibited:

- (1) Littering, throwing, dumping of waste matters in public places, such as roads, sidewalks, canals, esteros or parks, and establishment, or causing or permitting the same;
- (2) Undertaking activities or operating, collecting or transporting equipment in violation of sanitation operation and other requirements or permits set forth in or established pursuant to this Act;
- (3) The open burning of solid waste;
- (4) Causing or permitting the collection of non-segregated or unsorted waste;
- (5) Squatting in open dumps and landfills;
- (6) Open dumping, burying of biodegradable or non-biodegradable materials in flood-prone areas;
- (7) Unauthorized removal of recyclable material intended for collection by authorized persons;
- (8) The mixing of source-separated recyclable material with other solid waste in any vehicle, box, container or receptacle used in solid waste collection or disposal;
- (9) Establishment or operation of open dumps as enjoined in this Act, or closure of said dumps in violation of Sec. 37;
- (10) The manufacture, distribution or use of non-environmentally acceptable packaging materials;
- (11) Importation of consumer products packaged in non-environmentally acceptable materials;
- (12) Importation of toxic wastes misrepresented as “recyclable” or “with recyclable content”;
- (13) Transport and dumping in bulk of collected domestic, industrial, commercial and institutional wastes in areas other than centers of facilities prescribed under this Act;
- (14) Site preparation, construction, expansion or operation of waste management facilities without an Environmental Compliance Certificate required pursuant to Presidential Decree No. 1586 and this Act and not conforming with the land use plan of the LGU;
- (15) The construction of any establishment within two hundred (200) meters from open dumps or controlled dumps or sanitary landfills; and
- (16) The construction or operation of landfills or any waste disposal facility on any aquifer, groundwater reservoir or watershed area and or any portions thereof;¹²¹

- **Fines and Penalties** – (a) Any person who violates Sec. 48, paragraph (1) shall, upon conviction, be punished with a fine of not less than Three hundred pesos (P300.00) but not more than One thousand pesos (P1,000.00) or render community service for not less than one (1) day to not more than fifteen (15) days to an LGU where such prohibited acts are committed, or both;
- (b) Any person who violates Sec. 48, pars. (2) and (3), shall, upon conviction, be punished with a fine of not less than Three hundred pesos (P300.00) but not more than One thousand pesos (P1,000.00) or imprisonment of not less than one (1) day to not more than fifteen (15) days, or both;

¹²¹ RA 9003, Section 48.

(b) Any person who violates Sec. 48 pars. (4), (5), (6), and (7) shall, upon conviction, be punished with a fine of not less than One thousand pesos (P1,000.00) but not more than Three thousand pesos (P3,000.00) or imprisonment of not less than fifteen (15) days but not more than six (6) months, or both;

(c) Any person who violates Sec. 48 pars. (8), (9), (10) and (11) for the first time shall, upon conviction, pay a fine of Five hundred thousand pesos (P500,000.00) plus an amount not less than five percent (5%) but not more than ten percent (10%) of his net annual income during the previous year.

(d) The additional penalty of imprisonment of a minimum period of one (1) year, but not to exceed three (3) years at the discretion of the court, shall be imposed for second or subsequent violations of Sec. 48, paragraphs (9) and (10).

(e) Any person who violates Sec. 48, pars. (12) and (13), shall, upon conviction, be punished with a fine of not less than Ten thousand pesos (P10,000.00) but not more than Two hundred thousand pesos (P200,000.00) or imprisonment of not less than thirty (30) days but not more than three(3) years, or both;

(f) Any person who violates Sec. 48, pars. (14), (15) and (16) shall, upon conviction, be punished with a fine not less than One hundred thousand pesos (P100,000.00) but not more than One million pesos (P1,000,000.00), or imprisonment not less than one (1) year but not more than six (6) years, or both.

If the offense is committed by a corporation, partnership, or other juridical entity duly organized in accordance with law, the chief executive officer, president, general manager, managing partner or such other officer-in-charge shall be liable for the commission of the offense penalized under this Act.

If the offender is an alien, he shall, after service of the sentence prescribed above, be deported without further administrative proceedings.

The fines herein prescribed shall be increased by at least ten percent (10%) every three (3) years to compensate for inflation and to maintain the deterrent function of such fines.¹²²

- **Administrative Sanctions.** – Local government officials and officials of government agencies concerned who fail to comply with and enforce rules and regulations promulgated relative to this Act shall be charged administratively in accordance with R.A. 7160 and other existing laws, rules and regulations.¹²³

FORESTRY AND FOREST-RELATED ACTIVITIES (including industrial, subsistence, small-scale)

Revised Forestry Code of the Philippines (PD 705, as amended)

- "policies:
 - a. The multiple uses of forest lands shall be oriented to the development and progress requirements of the country, the advancement of science and technology, and the public welfare;
 - b. Land classification and survey shall be systematized and hastened;
 - c. The establishment of wood-processing plants shall be encouraged and rationalized; and
 - d. The protection, development and rehabilitation of forest lands shall be emphasized so as to ensure their continuity in productive condition."¹²⁴

¹²² RA 9003, Section 49.

¹²³ RA 9003, Section 50.

¹²⁴ PD 705, as amended, Section 2.

- **Multiple Use** – “The numerous beneficial uses of the timber, land, soil, water, wildlife, grass and recreation or aesthetic value of forest lands and grazing lands shall be evaluated and weighted before allowing their utilization, exploitation, occupation or possession thereof, or the conduct of any activity therein. Only the utilization, exploitation, occupation or possession of any forest lands and grazing lands, or any activity therein, involving one or more of its resources, which will produce the optimum benefits to the development and progress of the country, and the public welfare, without impairment or with the least injury to its resources, shall be allowed.

All forest reservations may be open to development or uses not inconsistent with the principal objectives of the reservation; Provided, That critical watersheds, national parks and established experimental forests shall not be subject to commercial logging or grazing operations, and game refuges, bird sanctuaries, marine and seashore parks shall not be subject to hunting or fishing and other activities of commercial nature.”¹²⁵ [As amended by PD No. 1559]

- **Areas Needed for Forest Purposes** – “The following lands, even if they are below eighteen percent (18%) in slope, are needed for forest purposes, and may not, therefore, be classified as alienable and disposable land, to wit:

1. Areas less than 250 hectares which are far from, or are not contiguous with any certified alienable and disposable land;
2. Isolated patches of forest of at least five (5) hectares with rocky terrain, or which protect a spring for communal use;
3. Areas which have already been reforested;
4. Areas within forest concessions which are timbered or have good residual stocking to support an existing, or approved to be established, wood processing plant;
5. Ridge tops and plateaus regardless of size found within, or surrounded wholly or partly by, forest lands where headwaters emanate;
6. Appropriately located road-rights-of-way;
7. Twenty-meter strips of land along the edge of the normal high waterline of rivers and streams with channels of at least five (5) meters wide;
8. Strips of mangrove or swamplands at least twenty (20) meters wide, along shorelines facing oceans, lakes, and other bodies of water, and strips of land at least twenty (20) meters wide facing lakes;
9. Areas needed for other purposes, such as national parks, national historical sites, game refuges and wildlife sanctuaries, forest station sites, and others of public interest; and
10. Areas previously proclaimed by the President as forest reserves, national parks, game refuge, bird sanctuaries, national shrines, national historic sites:

Provided, That in case an area falling under any of the foregoing categories shall have been titled in favor of any person, steps shall be taken, if public interest so requires, to have said title cancelled or amended, or the titled area expropriated.”¹²⁶

- **Duration of License Agreement or License to Harvest Timber in Forest Lands** - “The duration of the privilege to harvest timber in any particular forest land under a license agreement or license shall be fixed and determined in accordance with the annual allowable cut therein, the established cutting cycle thereof, the yield capacity of harvestable timber, and the capacity of healthy residuals for a second growth.

The privilege shall automatically terminate, even before the expiration of the license agreement of license, the moment the harvestable timber have been utilized without leaving any logged-over area capable of commercial utilization.

¹²⁵ PD 705, as amended, Section 19.

¹²⁶ PD 705, as amended, Section 16.

The maximum period of any privilege to harvest timber is twenty-five (25) years, renewable for a period, not exceeding twenty-five (25) years, necessary to utilize all the remaining commercial quantity or harvestable timber either from the unlogged or logged-over area.

It shall be a condition for the continued privilege to harvest timber under any license or license agreement that the licensee shall reforest all the areas which shall be determined by the Bureau.¹²⁷

- **Size of Forest Concessions** – “Forest lands shall not be held in perpetuity.

The size of the forest lands which may be the subject of timber utilization shall be limited to that which a person may effectively utilize and develop for a period of fifty (50) years, considering the cutting cycle, the past performance of the applicant and his capacity not only to utilize but, more importantly, to protect and manage the whole area, and the requirements of processing plants existing or to be installed in the region.

Forest concessions which had been the subject of consolidations shall be reviewed and re-evaluated for the effective implementation of protection, reforestation and management thereof under the multiple use and sustained yield concepts, and for the processing locally of the timber resources therefrom.¹²⁸

- **Industrial Tree Plantations, Tree Farms and Agro-Forestry Farms** – “A lease for a period of fifty (50) years for the establishment of an industrial tree plantations, tree farm or agro-forestry farm, may be granted by the Department Head, upon recommendation of the Director, to any person qualified to develop and exploit natural resources, over timber or forest lands of the public domain categorized in Section 33(1) hereof except those under paragraphs d and g with a minimum area of one hundred (100) hectares for industrial tree plantations and agro-forestry farms and ten (10) hectares for tree farms: Provided, That the size of the area that may be granted under each category shall, in each case, depend upon the capability of the lessee to develop or convert the area into productive condition within the term of the lease.

The lease may be granted under such terms and conditions as the Department Head may prescribe, taking into account, among others, the raw material needs of forest based and other industries and the maintenance of a wholesome ecological balance.

Trees and other products raised within the industrial tree plantation, tree farm or agro-forestry farm belong to the lessee who shall have the right to sell, contract, convey, or dispose of said planted trees and other products in any manner he sees fit, in accordance with existing laws, rules and regulations.

Reforestation projects of the Government, or portion thereof, which, upon field evaluation, are found to be more suitable for, or can better be developed as industrial tree plantations, tree farms or agro-forestry farms, in terms of benefits to the Government and the general surrounding area, may be the subject of a lease under this Section.¹²⁹

- **Incentives** – “To encourage qualified persons to engage in industrial tree plantation, tree farm and/or agro-forest farm, the following incentives are granted:
 - a. Payment of a nominal filing fee of fifty centavos (P0.50) per hectare;
 - b. No rental shall be collected during the first five (5) years from the date of the lease, from the sixth year to the tenth year, the annual rental shall be fifty centavos (P0.50) per hectare; and thereafter, the annual rental shall be one peso (P 1.00) per hectare: Provided, That lessees of areas long denuded, as certified by the Director and approved by the Department Head, shall be exempted from the payment of rental for the full term of the lease which shall not exceed twenty-five (25) years; for the first five (5)-years

¹²⁷ PD 705, as amended, Section 27.

¹²⁸ PD 705, as amended, Section 28.

¹²⁹ PD 705, as amended, Section 34.

following the renewal of the lease, the annual rental shall be fifty centavos (P0.50) per hectare; and thereafter, the annual rental shall be one peso (P1.00) per hectare: Provided, further, That notwithstanding the foregoing, no rental shall be collected from a lessee who, upon verification by the Bureau, substantially meets the schedule of development of the industrial tree plantation, the tree farm, or agro-forestry farm, as the case may be, as prescribed in the development plan submitted to, and approved by the Department Head, upon recommendation of the Director;

c. The forest charges payable by a lessee on the timber and other forest products grown and cut or gathered in an industrial tree plantation, tree farm, or agro-forestry farm shall only be twenty-five percent (25%) of the regular forest charges prescribed in the National Internal Revenue Code;

d. Exemption from the payment of the percentage tax levied in Title V of the National Internal Revenue Code when the timber and forest products are sold, bartered or exchanged by the lessee, whether in their original state or not, as well as exemption from all forms of sales tax, local and municipal taxes, and from the real property tax under the provisions of Presidential Decree No. 853;

e. A lessee shall not be subject to any obligation prescribed in, or arising out of, the provisions of the National Internal Revenue Code on withholding of tax at source upon interest paid on borrowing incurred for development and operation of the industrial tree plantation, tree farm, or agro-forestry farm;

f. Except when public interest demands, the boundaries of an area covered by an industrial tree plantation, tree farm, or agro-forestry farm lease, once established on the ground, shall not be altered or modified;

g. Amounts expended by a lessee in the development and operation of an industrial tree plantation, tree farm, or agro-forestry farm prior to the time when the production state is reached, may, at the option of the lessee, be regarded as ordinary and necessary business expenses or as capital expenditures;

h. The Board of Investments shall, notwithstanding its nationality requirement on projects involving natural resources, classify industrial tree plantations, tree farms and agro-forestry farms as pioneer areas of investment under its annual priority plan, to be governed by the rules and regulations of said Board; In addition to the incentives under this section, private landowners who engage in tree farming on areas fifty hectares or below by planting their lands with Ipil-ipil and other fast growing trees shall be exempt from the inventory requirement and other requirements before harvest as provided in this Decree for lessees of forest lands of the public domain: Provided, That the transport of trees cut shall be accompanied by the corresponding certificate of origin duly issued by the authorized forest officer. [As added by BP Blg. 701, approved April 5, 1984]

i. Approved industrial tree plantations, tree farms, and agro-forestry farms shall be given priority in securing credit assistance from the government and government-supported financing institutions which shall set aside adequate funds for lending to the lessee and/or investor at reasonable interest rates;

j. The lessee and its field employees and workers shall be exempted from the provisions of Presidential Decree No. 1153;

k. Government institutions administering or financing programs and projects requiring wood materials shall specify the purchase of, or utilize, manufactured products derived from trees grown and harvested from industrial tree plantations, tree farms or agro-forestry farms, whenever possible;

l. No wood, wood products or wood-derived products including pulp paper, paperboard shall be imported if the same are available in required quantities and reasonable prices, as may be certified by the Department Head, from artificial or man-made forests, or local processing plants manufacturing the same;

m. No processing plant of whatever nature or type, made of or utilization, as primary materials shall be allowed to be established, expanded or integrated, and operated without a long-term assurance or raw materials source from forest concessions and/or from industrial tree plantations, tree farms or agro-forestry farms in accordance with Section 30 hereof;

n. Timber grown and harvested from industrial tree plantations, tree farms and agro-forestry farms may be exported without restriction in quantity or volume, and if the exporter is the same person or firm qualified and allowed to export logs under the provisions of this Decree, such timber from plantations/farms may be exported exclusive of the quantity or volume authorized under Section 32

hereof: Provided, That the rentals on the forest land and the forest charges on the plantation timber shall have been paid: Provided, further, That the export of the plantation timber shall be covered by a certificate to export issued by the Department Head on a yearly basis: Provided, finally, That the Department Head may at any time review the exportation of timber harvested from the plantations/farms and either reduce or totally suspend the export of such plantation timber whenever public interest so requires; and

o. Free technical advice from government foresters and farm technicians.

The Department Head may provide other incentives in addition to those hereinafter granted to promote industrial tree plantations, tree farms and agro-forestry farms in special areas such as, but not limited to, those where there are no roads or where the roads are inadequate, or areas with rough topography and remote areas far from processing plants.¹³⁰

- **Control of Concession Area** - "In order to achieve the effective protection of the forest lands and the resources thereof from illegal entry, unlawful occupation, kaingin, fire, insect infestation, theft, and other forms of forest destruction, the utilization of timber therein shall not be allowed except through license agreements under which the holders thereof shall have the exclusive privilege to cut all the allowable harvestable timber in their respective concessions, and the additional right of occupation, possession, and control over the same, to the exclusive of all others, except the government, but with the corresponding obligation to adopt all the protection and conservation measures to ensure the continuity of the productive condition of said areas, conformably with multiple use and sustained yield management.

If the holder of a license agreement over a forest area expressly or impliedly waives the privilege to utilize any softwood, hardwood or mangrove species therein, a license may be issued to another person for the harvest thereof without any right of possession or occupation over the areas where they are found, but he shall, likewise, adopt protection and conservation measures consistent with those adopted by the license agreement holder in the said areas.¹³¹

- **Swamplands and Mangrove Forests** – "Strips of mangrove forest bordering numerous islands which protect the shoreline, the shoreline roads, and even coastal communities from the destructive force of the sea during high winds and typhoons, shall be maintained and shall not be alienated. Such strips must be kept from artificial obstruction so that flood water will flow unimpeded to the sea to avoid flooding or inundation of cultivated areas in the upstream.

All mangrove swamps set aside for coast-protection purposes shall not be subject to clear-cutting operation.

Mangrove and other swamps released to the Bureau of Fisheries and Aquatic Resources for fishpond purposes which are not utilized, or which have been abandoned for five (5) years from the date of such release shall revert to the category of forest land.¹³²

- **Roads and Other Infrastructure** – "Roads and other infrastructure in forest lands shall be constructed with the least impairment to the resource values thereof.

Government agencies undertaking the construction of roads, bridges, communications, and other infrastructure and installations inside forest lands, shall coordinate with the Bureau, especially if it will

¹³⁰ PD 705, as amended, Section 36.

¹³¹ PD 705, as amended, Section 38.

¹³² PD 705, as amended, Section 43.

involve the utilization or destruction of timber and/or other forest resources, or watershed disturbance therein, in order to adopt measures to avoid or reduce damage or injury to the forest resource values...¹³³

- **Wildlife** – “All measures shall be adopted to conserve wildlife. The Director shall regulate the hunting of wildlife in forest lands in order to maintain an ecological balance of flora and fauna.”¹³⁴ [As amended by PD No. 1559]

- **Authority of Department Head to Impose Other Fees** - In addition to the fees and charges imposed under existing laws, rules and regulations, the Department Head is hereby authorized, upon recommendation of the Director and in consultation with representatives of the industries affected, to impose other fees for forest protection, management, reforestation, and development, the proceeds of which shall accrue into a special deposit of the Bureau as its revolving fund for the aforementioned purposes.¹³⁵

- **Charges on Timber Cut in Forestland** - There shall be collected charges on each cubic meter of timber cut in forestland, whether belonging to the first, second, third or fourth group, twenty-five percent (25%) of the actual FOB market price based on species and grading: Provided, however, That, in the case of pulpwood and matchwood cut in forestland, forest charges on each cubic meter shall be ten percent (10%) of the actual FOB market price.¹³⁶ [As amended by RA No. 7161, 10 Oct. 1991]

- **Charges on Firewood, Branches and Other Recoverable Wood Wastes of Timber** - Except for all mangrove species whose cutting shall be banned, there shall be collected forest charges on each cubic meter of firewood cut in forestland, branches and other recoverable wood wastes of timber, such as timber ends, tops and stumps when used as raw materials for the manufacture of finished products. Ten pesos (P10.00).¹³⁷

Only third or fourth group wood can be taken for firewood. However, if jointly authorized by the Secretaries of both the Departments of Environment and Natural Resources and Agriculture, first and second group woods may be removed for firewood purposes from land which is more valuable for agricultural than for forest purposes. [As amended by RA No. 7161]

- **Charges on Minor Forest Products** – “All other forest products of forestland which are not covered by the preceding sections shall be exempt from any or all forest charges, except rattan, gums and resins, bees-wax, gutapercha, almaciga resin and bamboo which shall be charged at ten percent (10%) of the actual FOB market price.¹³⁸ [As amended by RA No. 7161]

- **Effectivity and Application of Forest Charges and Determination of Market Price of Forest Products** – “The rates of forest charges provided for in Sections 70, 71 and 72 hereof shall be effective upon approval of this Act. The new rates shall be published in the Official Gazette or in two (2)

¹³³ PD 705, as amended, Section 49.

¹³⁴ PD 705, as amended, Section 55.

¹³⁵ PD 705, as amended, Section 65.

¹³⁶ PD 705, as amended, Section 70.

¹³⁷ PD 705, as amended, Section 71.

¹³⁸ PD 705, as amended, Section 72.

newspapers of national circulation and shall also be posted in conspicuous places in the different Department of Environment and Natural Resources field offices.

The actual FOB market price of forest products shall be justly determined once a year by the Secretary of Environment and Natural Resources: Provided, That he shall cause the creation of a committee to be composed of representatives of the Department of Environment and Natural Resources, the National Economic Development Authority the Department of Trade and Industry, the Bureau of Internal Revenue and the wood and furniture industry and consumer sectors which shall formulate the criteria and/or guidelines in the determination of the actual FOB market price to be used as the basis for the assessment of the ad valorem tax. Taking into consideration production cost (developing cost, contingencies and miscellaneous cost), species and grade of timber, government share, reforestation, tariff duties, taxes, risk involved and a reasonable margin of profit for domestic and export market prices for wood and wood products.

These forest charges shall be applied to naturally growing timber and forest products gathered within public forestlands, alienable and disposable lands and private lands. Forest charges collected shall be in lieu of the administrative charge on environment and other fees and charges imposed thereon: Provided, That planted trees and other forest products harvested from industrial tree plantations and private lands covered by existing tiller or by approved land application are exempted from payment of forest charges.”

¹³⁹ [As amended by RA No. 7161]

- **Charges on Gums, Resins, and Other Forest Products** – “On gums, resins, rattan, and other forest products of forest lands which are not herein above provided for, there is herein imposed upon the person removing such forest product a charge of ten per centum of the actual market value thereof, determined in the manner indicated below.

The market value of the various forest products on which forest charges may thus be collected shall be determined from time to time by a joint assessment of the Commissioner and the Director of Forest Development, to be approved by their respective Ministry Heads (Department Heads), the same to be published for the information of public in the Official Gazette, in two daily newspaper of national circulation, and posted in a conspicuous place in the municipal building of a municipality concerned.”¹⁴⁰

[As amended by BP Blg. 83]

- **Tax Exemptions of Forest Products Lawfully Removed under Gratuitous License** - No charges shall be collected on forest products removed in conformity with the terms of a gratuitous license of the Bureau of Forest Development and in compliance with the law and the regulations of such Bureau.¹⁴¹ [As amended by BP Blg. 83]

- **Tax Exemption of Trees and Products Removed from Public Lands under a Tree Farm Lease**
No charges shall be collected on trees and products removed from public lands planted to ipil-ipil and/or falcata under a tree farm lease with the Government.¹⁴² [As amended by BP Blg. 83]

- **CRIMINAL OFFENSES AND PENALTIES**

- **Cutting, Gathering and/or Collecting Timber, or Other Forest Products Without License** - Any person who shall cut, gather, collect, remove timber or other forest products from any forestland, or

¹³⁹ PD 705, as amended, Section 73.

¹⁴⁰ PD 705, as amended, Section 74.

¹⁴¹ PD 705, as amended, Section 75.

¹⁴² PD 705, as amended, Section 76.

timber from alienable or disposable public land, or from private land, without any authority, or possess timber or other forest products without the legal documents as required under existing forest laws and regulations, shall be punished with the penalties imposed under Articles 309 and 310 of the Revised Penal Code: Provided, That in the case of partnership, associations, or corporations, the officers who ordered the cutting, gathering, collection or possession shall be liable, and if such officers are aliens, they shall, in addition to the penalty, be deported without further proceedings on the part of the Commission on Immigration and Deportation.

The Court shall further order the confiscation in favor of the government of the timber or any forest products cut, gathered, collected, removed, or possessed, as well as the machinery, equipment, implements and tools illegally used in the area where the timber or forest products are found. [As amended by PD No. 1559, and by EO No. 277, prom. July 25, 1987, 83 OG No. 31, Aug. 3, 1987]¹⁴³

- **Unlawful Occupation or Destruction of Forest Lands and Grazing Lands** – “Any person who enters and occupies or possesses, or makes kaingin for his own private use or for others, any forest land or grazing land without authority under a license agreement, lease, license or permit, or in any manner destroys such forest land or grazing land or part thereof, or causes any damage to the timber stand and other products and forest growth found therein, or who assists, aids or abets any other person to do so, or sets a fire, or negligently permits a fire to be set in any forest land or grazing land, or refuses to vacate the area when ordered to do so, pursuant to the provisions of Section 53 hereof shall, upon conviction, be fined in an amount of not less than five hundred pesos (P500.00), nor more than twenty thousand pesos (P20,000.00) and imprisoned for not less than six (6) months nor more than two (2) years for each such offense, and be liable to the payment of ten (10) times to the rental fees and other charges which would have accrued had the occupation and use of the land been authorized under a license agreement, lease, license or permit: Provided, That in the case of an offender found guilty of making kaingin, the penalty shall be imprisonment for not less than two (2) nor more than four (4) years and a fine equal to eight (8) times the regular forest charges due on the forest products destroyed, without prejudice to the payment of the full cost of production of the occupied area as determined by the Bureau: Provided, further, That the maximum of the penalty prescribed herein shall be imposed upon the offender who repeats the same offense and double the maximum of the penalty upon the offender who commits the same offense for the third time.

In all cases, the Court shall further order the eviction of the offender from the land the forfeiture to the government of all improvements made and all vehicles, domestic animals and equipment of any kind used in the commission of the offense. If not suitable for use by the Bureau, said vehicles, domestic animals, equipment and improvements shall be sold at public auction, the proceeds of which shall accrue to the Development Fund of the Bureau.

In case the offender is a government official or employee, he shall, in addition to the above penalties be deemed automatically dismissed from office and permanently disqualified from holding any elective or appointive position.” [As amended by PD No. 1559]¹⁴⁴

- **Pasturing Livestock** - Imprisonment for not less than six (6) months nor more than two (2) years and a fine equal to ten (10) times the regular rentals due, in addition to the confiscation of such livestock and all improvements introduced in the area in favor of the government, shall be imposed upon any person, who shall, without authority under a lease or permit, graze or cause to graze livestock in forest lands, grazing lands and alienable and disposable lands which have not as yet been disposed of in

¹⁴³ PD 705, as amended, Section 78.

¹⁴⁴ PD 705, as amended, Section 79.

accordance with the Public Land Act; Provided, That in case the offender is a corporation, partnership or association, the officers and directors thereof shall be liable.¹⁴⁵

- **Illegal Occupation of National Parks System and Recreation Areas and Vandalism Therein -** Any person who, shall, without permit, occupy for any length of time any portion of the national parks system or shall, in any manner cut, destroy, damage or remove timber or any species of vegetation or forest cover and other natural resources found therein, or shall mutilate, deface or destroy objects of natural beauty or of scenic value within areas in the national parks system, shall be fined not less than five hundred pesos (P500.00) pesos or more than twenty thousand (P20,000.00) pesos exclusive of the value of the thing damaged; Provided, That if the area requires rehabilitation or restoration as determined by the Director, the offender shall also be required to restore or compensate or the restoration of the damage: Provided, further, That any person who, without proper permit shall hurt, capture or kill any kind of bird, fish or wild animal life within the area in the national parks system shall be subject to the same penalty: Provided, finally, That the Court shall order eviction of the offender from the land and the forfeiture in favor of the government of all timber or any species or vegetation and other natural resources collected or removed, and any construction or improvement made thereon by the offender. If the offender is an association or corporation, the president or manager shall be directly responsible and liable for the act of his employees or laborers.

In the event that an official or employee of a city or municipal government is primarily responsible for detecting and convicting the violator of the provisions of this section, fifty per centum (50%) of fine collected shall accrue to such municipality or city for the development of local parks.¹⁴⁶ [As amended by PD No. 1559]

- **Destruction of Wildlife Resources -** Any person violating the provisions of Section 55 of this Code, or the regulations promulgated thereunder, shall be fined not less than one hundred (P100.00) pesos for each such violation and in addition shall be denied a permit for a period of three (3) years from the date of the violation.¹⁴⁷

- **Survey by Unauthorized Persons -** Imprisonment for not less than two (2) nor more than four (4) years, in addition to the confiscation of the implements used in the violation of this section including the cancellation of the license, if any, shall be imposed upon any person who shall, without permit to survey from the Director, enter any forestlands, whether covered by a license agreement, lease, license, or permit, or not, and conduct or undertake a survey for whatever purpose.¹⁴⁸

- **Misclassification and Survey by Government Official or Employee –** “Any public officer of employee who knowingly surveys, classifies, or recommends the release of forestlands as alienable and disposable lands contrary to the criteria and standards established in this Code, or the rules and regulations promulgated hereunder, shall, after an appropriate administrative proceeding, be dismissed from the service with prejudice to re-employment, and upon conviction by a court of competent jurisdiction, suffer an imprisonment of not less than one (1) year and a fine of not less then one thousand (P1,000.00) pesos. The survey, classification or release of forestlands shall be null and void.”¹⁴⁹

¹⁴⁵ PD 705, as amended, Section 80.

¹⁴⁶ PD 705, as amended, Section 81.

¹⁴⁷ PD 705, as amended, Section 82.

¹⁴⁸ PD 705, as amended, Section 83.

¹⁴⁹ PD 705, as amended, Section 84.

- **Coercion and Influence** - Any person who coerces, influences, abets or persuades the public officer or employee referred to in Sections 74 and 75 commit any of the acts mentioned therein shall suffer imprisonment of not less than one (1) year and pay a fine of five hundred (P500.00) pesos for every hectare or a fraction thereof so improperly surveyed, classified or released.

In all other cases, any person who coerces, influences, abets or persuades the public officer or employee by using power and influence in deciding any pending case or matter in his favor shall be punished by a fine of not more than five thousand pesos (P5,000.00) and imprisonment of not less than one (1) year.¹⁵⁰
[As amended by PD No. 1559]

- **Payment, Collection and Remittance of Forest Charges** - Any person who fails to pay the amount due and payable under the provisions of this Code, the National Internal Revenue Code, or the rules and regulations promulgated thereunder, shall be liable to the payment of a surcharge of twenty-five per centum (25%) of the amount due and payable.

Any person who fails or refuses to remit to the proper authorities said forest charges collectible pursuant to the provisions of this Code or the National Internal Revenue Code, or who delays, obstructs or prevents the same, or who orders, causes or effects the transfer or diversion of the funds for purposes other than those specified in this Code, for each such offense shall, upon conviction, be punished by a fine of not exceeding one hundred thousand pesos (P100,000) and/or imprisonment for a period of not exceeding six (6) years in the discretion of the Court. If the offender is a government official or employee, he shall, in addition, be dismissed from the service with prejudice to reinstatement and with disqualification from holding any elective or appointive office.

If the offender is a corporation, partnership or association, the officers and directors thereof shall be liable.¹⁵¹

AGRICULTURE (including small scale, subsistence and commodity)

Agriculture and Fisheries Modernization Act of 1997 (RA 8435)

- Policy Principles:¹⁵²
 - a. Poverty Alleviation and Social Equity
 - b. Food Security
 - c. Rational Use of Resources
 - d. Global Competitiveness
 - e. Sustainable Development
 - f. People Empowerment
 - g. Protection from Unfair Competition
- **Policy** – "to ensure that all sectors of the economy and all regions of the country shall be given optimum opportunity to develop through the rational and sustainable use of resources peculiar to each

¹⁵⁰ PD 705, as amended, Section 86.

¹⁵¹ PD 705, as amended, Section 87.

¹⁵² RA 8435, Section 2.

area in order to maximize agricultural productivity, promote efficiency and equity and accelerate the modernization of the agriculture and fisheries sectors of the country."¹⁵³

- **Network of Areas for Agricultural and Agro-Industrial Development** - The Department shall, within six (6) months after the approval of this Act, and in consultation with the local government units. Appropriate government agencies, concerned non-government organizations (NGOs) and organized farmers and fisherfolk's groups, identify the Strategic Agriculture and Fisheries Development Zones (SAFDZ) within the network of protected areas for agricultural and agro-industrial development to ensure that lands are efficiently and sustainability utilized for food and non-food production and agroindustrialization.

The SAFDZ, which shall serve as centers where development in the agriculture and fisheries sectors are catalyzed in an environmentally and socio-culturally sound manner, shall be identified on the basis of the following criteria:¹⁵⁴

1. Agro-climatic and environmental conditions giving the area a competitive advantage in the cultivation, culture, production and processing of particular crops, animals and aquatic products;
2. Strategic location of the area for the establishment of agriculture or fisheries infrastructure, industrial complexes, production and processing zones;
3. Strategic location of the area for market development and market networking both at the local and international level; and
4. Dominant presence of agrarian reform communities (ARCs) and/or small owner - cultivators and amortizing owners/agrarian reform beneficiaries and other small and fisherfolk in the area.

The SAFDZ shall have an integrated development plan consisting of production processing, investment, marketing, human resources and environmental protection components.

- **Preparation of Land Use and Zoning Ordinance** - Within one (1) year from the finalization of the SAFDZ, in every city and municipality, all cities and municipalities shall have prepared their respective land use and zoning ordinance incorporating the SAFDZ, where applicable. Thereafter, all land use plans and zoning ordinances shall be updated every four (4) years or as often as may be deemed necessary upon the recommendation of the Housing and Land Use Regulatory Board and must be completed within the first year of the term of office of the mayor. If the cities/municipalities fail to comply with the preparation of zoning and land use plans, the DILG shall impose the penalty as provided for under Republic Act No. 7160.¹⁵⁵

- **Penalty for Agricultural Inactivity and Premature Conversion** - Any person or juridical entity who knowingly or deliberately causes any irrigated agricultural lands seven (7) hectares or larger, whether contiguous or not, within the protected areas for agricultural development. As specified under Section 6 in relation to Section 9 of this Act, to lie idle and unproductive for a period exceeding one (1) year, unless due to force majeure, shall be subject to an idle land tax of Three Thousand pesos (P 3,000.00) per hectare per year. In addition, the violator shall be required to put back lands, to productive agricultural use. Should the continued agricultural inactivity, unless due to force majeure, exceed a period of two (2) years, the land shall be subject to escheat proceedings.

Any person found guilty of premature or illegal conversion shall be penalized with imprisonment of two (2) to six (6) years, or a fine equivalent to one hundred percent (100%) of the government's investment

¹⁵³ RA 8435, Section 5.

¹⁵⁴ RA 8435, Section 6.

¹⁵⁵ RA 8435, Section 10.

cost, or both, at the discretion of the court, and an accessory penalty of forfeiture of the land and any improvement thereon.

In addition the DAR may impose the following penalties, after determining in an administrative proceedings, that violation of this law has been committed.

- a. Cancellation or withdraw of the authorization for land use conversion, and
- b. Blacklisting, or automatic disapproval of pending and subsequent conversion applications that they may file with the DAR.¹⁵⁶

- **Global Climate Change** - The Department, in coordination with the Philippine Atmospheric Geophysical and Astronomical Service Administration ((P.A.G.A.S.A.) and such other appropriate government agencies, shall devise a method of regularly monitoring and considering the effect of global climate changes, weather distribution, and annual productivity cycles for the purpose of forecasting and formulating agriculture and fisheries production programs.¹⁵⁷

- **Credit: Declaration of Policy** – “to alleviate poverty and promote vigorous growth in the countryside through access to credit by small farmers, fisherfolk, particularly the women involved in the production, processing and trading of agriculture and fisheries products and the small and medium scale enterprises (SMEs) and industries engaged in agriculture and fisheries.”¹⁵⁸

- **Irrigation: Policy** – “to use its natural resources rationally and equitably. The State shall prevent the further destruction of watersheds, rehabilitate existing irrigation systems and promote the development of irrigation systems that are effective, affordable, appropriate, and efficient. In the choice of location-specific irrigation projects, the economic principle of comparative advantage shall always be adhered to.”¹⁵⁹

- **Other Infrastructure: Criteria for Prioritization** – “The prioritization of government resources for rural infrastructure shall be based on the following criteria:¹⁶⁰
 - a. Agro-industrial potential of the area;
 - b. Socio-economic contributions of the investments in the area;
 - c. Absence of public investment in the area; and
 - d. Presence of agrarian reform beneficiaries and other small farmers and fisherfolk in the area.”

- **Product Standardization and Consumer Safety: Policy** – “all sectors involved in the production, processing, distribution and marketing of food and non-food agricultural and fisheries products shall adhere to, and implement the use of product standards in order to ensure consumer safety and promote the competitiveness of agriculture and fisheries products.”¹⁶¹

¹⁵⁶ RA 8435, Section 11.

¹⁵⁷ RA 8435, Section 16.

¹⁵⁸ RA 8435, Section 20.

¹⁵⁹ RA 8435, Section 26.

¹⁶⁰ RA 8435, Section 47.

¹⁶¹ RA 8435, Section 60.

- **Counterpart Funding from LGUs** - The LGUs shall, within two (2) years from the effectivity of this Act, provide at least ten percent (10%) of the Maintenance and Other Operating Expenses (MOOE) budget for the operation of the provincial institutes within their area of responsibility.

In consultation with the LGUs, the CHED shall develop a provincial-national partnership scheme for a reasonable sharing of financial support taking into account social equity factors for poor provinces.¹⁶²

- **Research and Development: Policy** – “to promote science and technology as essential for national development and progress.

The State shall likewise give priority to research and development, invention, innovation, and their utilization and to science and technology education, training and services. In addition to appropriate and relevant technology, the State shall support indigenous and self-reliant scientific and technological capabilities, and their application to the country's productive system and national life.”¹⁶³

- **Funds for Research and Development** - Considering the nature of research, development and extension activities, funding shall be based on the following guidelines:¹⁶⁴

- a. Allocation of multi-year budgets which shall be treated as research and development grants.
- b. The budget for agriculture and fisheries research and development shall be at least one percent (1%) of the gross value added (GVA) by year 2001 allocating at least one percent (1%) of the total amount by 1999. The Department of Finance (DOF) in consultation with the Department shall formulate revenue enhancement measures to fund this facility.
- c. At least twenty percent (20%) shall be spent in support of basic research and not more than eighty percent (80%) shall be used for applied research and technology development, of which at least 10% shall be used for technology packaging and transfer activities.
- d. A science fund shall be established from which the scientific community in agriculture and fisheries shall draw its financial resource for sustained career development: Provided, That only the interest earnings of the funds shall be used.

The Department and other research agencies, in the national interest, are encouraged to go into co-financing agreements with the private sector in the conduct of research and development provided that the terms and conditions of the agreement are beneficial to the country.

- **TRADE AND FISCAL INCENTIVES**

Taxation policies must not deter the growth of value-adding activities in the rural areas;¹⁶⁵

- All enterprises engaged in agriculture and fisheries as duly certified by the Department in consultation with the Department of Finance and the Board of Investment, shall, for five (5) years after the effectivity of this Act, be exempted from the payment of tariff and duties for the importation of all types of agriculture and fisheries inputs, equipment and machinery such as, but not limited to, fertilizer, insecticide, pesticide, tractor, trailers, trucks, farm implements and machinery, harvesters, threshers, hybrid seeds, genetic materials, sprayers, packaging machinery and materials, bulk-handling facilities such as conveyors and mini loaders, weighing scales, harvesting equipment, spare parts of all agricultural equipment, fishing equipment and parts thereof, refrigeration equipment, and renewable energy systems such as solar panels, Provided however, That the imported agricultural and fishery inputs, equipment and machinery shall be for the exclusive use of the importing enterprise.

¹⁶² RA 8435, Section 71.

¹⁶³ RA 8435, Section 80.

¹⁶⁴ RA 8435, Section 83.

¹⁶⁵ RA 8435, Section 108.

The Department, in consultation with the Department of Finance and the Board of Investment, shall within ninety (90) days from the effectivity of this Act, formulate the implementing rules and regulations governing the importation of agriculture and fishery inputs, equipment and machinery.¹⁶⁶

- Any person, partnership, corporation, association and other juridical entity found circumventing the provisions of Section 109 of this Act shall suffer the penalty of imprisonment for a period of not less than six (6) months but not more than one (1) year, or a fine equivalent to two hundred percent (200%) of the value of the imported materials, or both, at the discretion of the court, and the accessory penalties of confiscation of the imported goods in favor of the government and revocation of the privileges given under this title.

In cases where the violation is a juridical entity, the officers responsible in the violation of Section 109 shall suffer the penalty of imprisonment prescribed in this section.

The importation of goods equivalent to or exceeding the declared assets of the enterprise, partnership, or the authorized capital stock in case of corporations, and/or the resale of the imported goods shall be a prima facie evidence of the violation of the provisions of Section 109 of this Act.¹⁶⁷

- **Continuing Appropriation¹⁶⁸** - The Department of Budget and Management (DBM) is hereby mandated to include annually in the next six (6) years, in the President's program of expenditures for submission to Congress, and release, an amount not less than P17,000,000,000.00, for the implementation of this Act.

Additional funds over and above the regular yearly budget of the Department shall be sourced from twenty percent (20%) of the proceeds of the securitization of government assets, including the Subic, Clark and other special economic zones.

Other sources of funds shall be from the following:

- a. 50% of the net earnings of the Public Estates Authority.
- b. Loans, grants, bequest, or donations, whether from local or foreign sources.
- c. 40% of the TESDA Skills Development Fund;
- d. Net proceeds from the privatization of the Food Terminal, Inc. (FTI), the Bureau of Animal Industry (BAI), the Bureau of Plant Industry (BPI), and other assets of the Department that will be identified by the DA Secretary and recommended to the President for privatization;
- e. Proceeds from the Minimum Access Volume (MAV) in accordance with the provisions of Republic Act No. 8178;
- f. Poverty Alleviation Fund; and Fifty Percent (50%) of the Support Facilities and Services Fund under RA No. 6657.

Organic Agriculture Act of 2010 (Republic Act No. 10068)

- **Policy** – It is hereby declared the policy of the State to promote, propagate, develop further and implement the practice of organic agriculture in the Philippines that will cumulatively condition and enrich the fertility of the soil, increase farm productivity; reduce pollution and destruction of the environment, prevent the depletion of natural resources, further protect the health of farmers, consumers and the general public, and save program for the promotion of community-based organic agriculture systems which include, among others, farmerproduced purely organic fertilizers such as compost, pesticides and other farm inputs, together with a nationwide educational and promotional campaign for their use and processing, as well as the adoption of organic agricultural system as a viable alternative shall be undertaken.¹⁶⁹

¹⁶⁶ RA 8435, Section 109.

¹⁶⁷ RA 8435, Section 110.

¹⁶⁸ RA 8435, Section 112.

¹⁶⁹ RA 10068, Section 2.

- **National Organic Agricultural Program** – There is hereby established a comprehensive organic agricultural program through the promotion and commercialization of organic farming practices, cultivation and adoption of production and processing methods which have already been developed, or to be developed, continuing research and upgrading thereof, the capacity building of farmers and the education of consumers thereon, the extension of assistance to local government units (LGUs), peoples' organizations (Pos), nongovernment organizations (NGOs) and other stakeholders including individuals and groups who are willing to do other pertinent activities, and documentation and evaluation of the program.¹⁷⁰

- **Incentives** - The government shall extend incentives for the production and propagation of organic farm inputs by maximizing their use in all government and government –supported agricultural production, research and demonstration programs. Incentives shall also be provided to farmers whose farms have been duly certified as compliant to the Philippine National Standard (PNS).

Further, the DA may give cash reward in recognition of the best organic farm in the country. The DA, the DAR, the DOST, the DILG, the Department of Trade and Industry (DTI), the DepED, the Department of Finance (DOF), the Land Bank of the Philippines (LBP), and other government leading and non-leading institutions shall also assist organic input producers and organic farmers through the provision of adequate financial, technical, marketing, and other services and resources. These include, but shall both be limited to the following:¹⁷¹

(a) Exemption from the payment of duties on the importation of agricultural equipment, machinery and implements as provided under Republic Act No. 9281, which amends Republic Act No. 8435 or the Agriculture and Fisheries Modernization Act (AFMA);

(b) Identification by LGUs of local taxes that may be offered as incentives to organic input producers and users by the LBP

(c) Provision of preferential rates and special window to organic input producers and users by the LBP.

(d) Subsidies for certification fees and other support services to facilitate organic certification;

(e) Zero-rated value-added tax (VAT) on transactions involving the sale/purchase of bio-organic products, whether organic inputs or organic produce; and

(f) Income tax holiday and exemption for seven (7) years starting from the date of registration of organic food and organic input producers on all income taxes levied by the National Government.

The tax incentives shall be given only to purely organic agriculture entities/farmers and shall be subject to the accreditation of the BAFPS and periodic reporting by BAFPS to the DOF: *Provided*, That the said incentives shall be available only to micro, small and medium enterprises as defined under Section 3 of Republic Act No. 9501 or the Magna Carta for Micro, Small and Medium Enterprises.

TOURISM AND RECREATION

The Tourism Act of 2009, RA No. 9593

- Policy to "promote a tourism industry that is ecologically sustainable, responsible, participative, culturally sensitive, economically viable, and ethically and socially equitable for local communities;"¹⁷²

¹⁷⁰ RA 10068, Section 5.

¹⁷¹ RA 10068, Section 24.

¹⁷² RA No. 9593, Section 2(c).

- The DOT, in coordination with the DENR, shall identify areas covered by the National Integrated Protected Areas System (NIPAS) with ecotourism potentials and cultural heritage value, and prepare policies, plans and programs for their development, preservation, operation or conversion into TEZs.¹⁷³
-

ENERGY (including exploration, transportation, extraction practices)

Renewable Energy Act of 2008 (Republic Act No. 9513)

- **Feed-In Tariff System.** - To accelerate the development of emerging renewable energy resources, a feed-in tariff system for electricity produced from wind, solar, ocean, run-of-river hydropower and biomass is hereby mandated.¹⁷⁴

- **Green Energy Option.** - The DOE shall establish a Green Energy Option program which provides end-users the option to choose RE resources as their sources of energy. In consultation with the NREB, the DOE shall promulgate the appropriate implementing rules and regulations which are necessary, incidental or convenient to achieve the objectives set forth herein.

Upon the determination of the DOE of its technical viability and consistent with the requirements of the green energy option program, end users may directly contract from RE facilities their energy requirements distributed through their respective distribution utilities.

Consistent herewith, TRANSCO or its successors-in-interest, DUs, PEMC and all relevant parties are hereby mandated to provide the mechanisms for the physical connection and commercial arrangements necessary to ensure the success of the Green Energy Option. The end-user who will enroll under the energy option program should be informed by way of its monthly electric bill, how much of its monthly energy consumption and generation charge is provided by RE facilities.¹⁷⁵

- **GOVERNMENT SHARE**

- **Government Share.** - The government share on existing and new RE development projects shall be equal to one percent (1%) of the gross income of RE resource developers resulting from the sale of renewable energy produced and such other income incidental to and arising from the renewable energy generation, transmission, and sale of electric power except for indigenous geothermal energy, which shall be at one and a half percent (1.5%) of gross income.

To further promote the development of RE projects, the government hereby waives its share from the proceeds of micro-scale projects for communal purposes and non-commercial operations, which are not greater than one hundred (100) kilowatts.¹⁷⁶

- **ENVIRONMENTAL COMPLIANCE**

- **Compliance with Environmental Regulations.** - All RE explorations, development, utilization, and RE systems operations shall be conducted in accordance with existing environmental regulations as prescribed by the DENR and/or any other concerned government agency.¹⁷⁷

¹⁷³ RA No. 9593, Section 33.

¹⁷⁴ RA No. 9513, Section 7.

¹⁷⁵ RA No. 9513, Section 9.

¹⁷⁶ RA No. 9513, Section 13.

¹⁷⁷ RA No. 9513, Section 14.

- **GENERAL INCENTIVES**

- ***Incentives for Renewable Energy Projects and Activities.*** - RE developers of renewable energy facilities, including hybrid systems, in proportion to and to the extent of the RE component, for both power and non-power applications, as duly certified by the DOE, in consultation with the BOI, shall be entitled to the following incentives:¹⁷⁸

(a) Income Tax Holiday (ITH) - For the first seven (7) years of its commercial operations, the duly registered RE developer shall be exempt from income taxes levied by the national government.

Additional investments in the project shall be entitled to additional income tax exemption on the income attributable to the investment: *Provided*, That the discovery and development of new RE resource shall be treated as a new investment and shall therefore be entitled to a fresh package of incentives: *Provided, further*, That the entitlement period for additional investments shall not be more than three (3) times the period of the initial avilment of the ITH.

(b) Duty-free Importation of RE Machinery, Equipment and Materials - Within the first ten (10) years upon the issuance of a certification of an RE developer, the importation of machinery and equipment, and materials and parts thereof, including control and communication equipment, shall not be subject to tariff duties: *Provided, however*, That the said machinery, equipment, materials and parts are directly and actually needed and used exclusively in the RE facilities for transformation into energy and delivery of energy to the point of use and covered by shipping documents in the name of the duly registered operator to whom the shipment will be directly delivered by customs authorities: *Provided, further*, That endorsement of the DOE is obtained before the importation of such machinery, equipment, materials and parts are made.

Endorsement of the DOE must be secured before any sale, transfer or disposition of the imported capital equipment, machinery or spare parts is made: *Provided*, That if such sale, transfer or disposition is made within the ten (10)-year period from the date of importation, any of the following conditions must be present:

- (i) If made to another RE developer enjoying tax and duty exemption on imported capital equipment;
- (ii) If made to a non-RE developer, upon payment of any taxes and duties due on the net book value of the capital equipment to be sold;
- (iii) Exportation of the used capital equipment, machinery, spare parts or source documents or those required for RE development; and
- (iv) For reasons of proven technical obsolescence.

When the aforementioned sale, transfer or disposition is made under any of the conditions provided for in the foregoing paragraphs after ten (10) years from the date of importation, the sale, transfer or disposition shall no longer be subject to the payment of taxes and duties;

(c) Special Realty Tax Rates on Equipment and Machinery. - Any law to the contrary notwithstanding, realty and other taxes on civil works, equipment, machinery, and other improvements of a Registered RE Developer actually and exclusively used for RE facilities shall not exceed one and a half percent (1.5%) of their original cost less accumulated normal depreciation or net book value: *Provided*, That in case of an integrated resource development and generation facility as provided under Republic Act No. 9136, the real property tax shall only be imposed on the power plant;

(d) Net Operating Loss Carry-Over (NOLCO). - The NOLCO of the RE Developer during the first three (3) years from the start of commercial operation which had not been previously offset as deduction from gross income shall be carried over as a deduction from gross income for the next seven (7) consecutive taxable years immediately following the year of such loss: *Provided, however*, That operating loss resulting from the avilment of incentives provided for in this Act shall not be entitled to NOLCO;

(e) Corporate Tax Rate. - After seven (7) years of income tax holiday, all RE Developers shall pay a corporate tax of ten percent (10%) on its net taxable income as defined in the National Internal Revenue

¹⁷⁸ RA No. 9513, Section 15.

Act of 1997, as amended by Republic Act No. 9337. *Provided*, That the RE Developer shall pass on the savings to the end-users in the form of lower power rates.

(f) Accelerated Depreciation. - If, and only if, an RE project fails to receive an ITH before full operation, it may apply for Accelerated Depreciation in its tax books and be taxed based on such: *Provided*, That if it applies for Accelerated Depreciation, the project or its expansions shall no longer be eligible for an ITH. Accelerated depreciation of plant, machinery, and equipment that are reasonably needed and actually used for the exploration, development and utilization of RE resources may be depreciated using a rate not exceeding twice the rate which would have been used had the annual allowance been computed in accordance with the rules and regulations prescribed by the Secretary of the Department of Finance and the provisions of the National Internal Revenue Code (NIRC) of 1997, as amended. Any of the following methods of accelerated depreciation may be adopted:

- i) Declining balance method; and
- ii) Sum-of-the years digit method

(g) Zero Percent Value-Added Tax Rate. - The sale of fuel or power generated from renewable sources of energy such as, but not limited to, biomass, solar, wind, hydropower, geothermal, ocean energy and other emerging energy sources using technologies such as fuel cells and hydrogen fuels, shall be subject to zero percent (0%) value-added tax (VAT), pursuant to the National Internal Revenue Code (NIRC) of 1997, as amended by Republic Act No. 9337.

All RE Developers shall be entitled to zero-rated value added tax on its purchases of local supply of goods, properties and services needed for the development, construction and installation of its plant facilities.

This provision shall also apply to the whole process of exploring and developing renewable energy sources up to its conversion into power, including but not limited to the services performed by subcontractors and/or contractors.

(h) Cash Incentive of Renewable Energy Developers for Missionary Electrification. - A renewable energy developer, established after the effectivity of this Act, shall be entitled to a cash generation-based incentive per kilowatt hour rate generated, equivalent to fifty percent (50%) of the universal charge for power needed to service missionary areas where it operates the same, to be chargeable against the universal charge for missionary electrification;

(i) Tax Exemption of Carbon Credits. - All proceeds from the sale of carbon emission credits shall be exempt from any and all taxes;

(j) Tax Credit on Domestic Capital Equipment and Services. - A tax credit equivalent to one hundred percent (100%) of the value of the value-added tax and custom duties that would have been paid on the RE machinery, equipment, materials and parts had these items been imported shall be given to an RE operating contract holder who purchases machinery, equipment, materials, and parts from a domestic manufacturer for purposes set forth in this Act: *Provided*, That prior approval by the DOE was obtained by the local manufacturer: *Provided, further*, That the acquisition of such machinery, equipment, materials, and parts shall be made within the validity of the RE operating contract.

- ***Environmental Compliance Certificate (ECC)***. - Notwithstanding Section 17 (b) (3) (iii) of Republic Act No. 7160, it would be sufficient for the renewable energy developer to secure the Environmental Compliance Certificate (ECC) from the corresponding regional office of the DENR.¹⁷⁹
- ***Exemption from the Universal Charge***. - Power and electricity generated through the RES for the generator's own consumption and/or for free distribution in the off-grid areas shall be exempted from the payment of the universal charge provided for under Section 34 of Republic Act No. 9136.¹⁸⁰

¹⁷⁹ RA No. 9513, Section 16.

¹⁸⁰ RA No. 9513, Section 17.

- **Hybrid and Cogeneration Systems.** - The tax exemptions and/or incentives provided for in Section 15 of this Act shall be availed of by registered RE Developer of hybrid and cogeneration systems utilizing both RE sources and conventional energy: *Provided, however,* That the tax exemptions and incentives shall apply only to the equipment, machinery and/or devices utilizing RE resources.¹⁸¹

- **Incentives for RE Commercialization¹⁸²** - All manufacturers, fabricators and suppliers of locally-produced RE equipment and components duly recognized and accredited by the DOE, in consultation with DOST, DOF and DTI, shall, upon registration with the BOI, be entitled to the privileges set forth under this section.

Consistent with Article 7, Item (20) of EO No. 226, the registration with the BOI, as provided for in Section 15 and Section 21 of this Act, shall be carried out through an agreement and an administrative arrangement between the BOI and the DOE, with the end-view of facilitating the registration of qualified RE facilities based on the implementing rules and regulations that will be developed by DOE. It is further mandated that the applications for registration will be positively acted upon by BOI on the basis of the accreditation issued by DOE.

The Renewable Energy Sector is hereby declared a priority investment sector that will regularly form part of the country's Investment Priority Plan, unless declared otherwise by law. As such, all entities duly accredited by the DOE under this Act shall be entitled to all the incentives provided herein.

(a) Tax and Duty-free Importation of Components, Parts and Materials. - All shipments necessary for the manufacture and/or fabrication of RE equipment and components shall be exempted from importation tariff and duties and value added tax: *Provided, however,* That the said components, parts and materials are: (i) not manufactured domestically in reasonable quantity and quality at competitive prices; (ii) directly and actually needed and shall be used exclusively in the manufacture/fabrication of RE equipment; and (iii) covered by shipping documents in the name of the duly registered manufacturer/fabricator to whom the shipment will be directly delivered by customs authorities: *Provided, further,* That prior approval of the DOE was obtained before the importation of such components, parts and materials;

(b) Tax Credit on Domestic Capital Components, Parts and Materials. - A tax credit equivalent to one hundred percent (100%) of the amount of the value-added tax and customs duties that would have been paid on the components, parts and materials had these items been imported shall be given to an RE equipment manufacturer, fabricator, and supplier duly recognized and accredited by the DOE who purchases RE components, parts and materials from a domestic manufacturer: *Provided,* That such components, and parts are directly needed and shall be used exclusively by the RE manufacturer, fabricator and supplier for the manufacture, fabrication and sale of the RE equipment: *Provided, further,* That prior approval by the DOE was obtained by the local manufacturer;

(c) Income Tax Holiday and Exemption. - For 7 years starting from the date of recognition/accreditation, an RE manufacturer, fabricator and supplier of RE equipment shall be fully exempt from income taxes levied by the National Government on net income derived only from the sale of RE equipment, machinery, parts and services; and

(d) Zero-rated value added tax transactions - All manufacturers, fabricators and suppliers of locally produced renewable energy equipment shall be subject to zero-rated value added tax on its transactions with local suppliers of goods, properties and services.

- **Incentives for Farmers Engaged in the Plantation of Biomass Resources.** - For a period of 10 years after the effectivity of this Act, all individuals and entities engaged in the plantation of crops and

¹⁸¹ RA No. 9513, Section 19.

¹⁸² RA No. 9513, Section 21.

trees used as biomass resources such as but not limited to jatropha, coconut, and sugarcane, as certified by the Department of Energy, shall be entitled to duty-free importation and be exempted from Value-Added Tax (VAT) on all types of agricultural inputs, equipment and machinery such as, but not limited to, fertilizer, insecticide, pesticide, tractor, trailers, trucks, farm implements and machinery, harvesters, threshers, hybrid seeds, genetic materials, sprayers, packaging machinery and materials, bulk handling facilities, such as conveyors and mini-loaders, weighing scales, harvesting equipment, and spare parts of all agricultural equipment.¹⁸³

- **Tax Rebate for Purchase of RE Components¹⁸⁴** - To encourage the adoption of RE technologies, the DOF, in consultation with DOST, DOE, and DTI, shall provide rebates for all or part of the tax paid for the purchase of RE equipment for residential, industrial, or community use. The DOF shall also prescribe the appropriate period for granting the tax rebates.

- **Adoption of Waste-To-Energy Technologies¹⁸⁵** - The DOE shall, where practicable, encourage the adoption of waste-to-energy facilities such as, but not limited to, biogas systems. The DOE shall, in coordination with the DENR, ensure compliance with this provision. As used in this Act, waste-to-energy technologies shall refer to systems which convert to biodegradable materials such as, but not limited to, animal manure or agricultural waste, into useful energy through processes such as anaerobic digestion, fermentation and gasification, among others, subject to the provisions and intent of Republic Act No. 8749 (Clean Air Act of 1999) and Republic Act No. 9003 (Ecological Solid Waste Management Act of 2000).

- **Incentives for RE Host Communities/LGUs¹⁸⁶** - 80% of the share from royalty and/or government share of RE host communities/LGUs from RE projects and activities shall be used directly to subsidize the electricity consumption of end users in the RE host communities/LGUs whose monthly consumption do not exceed one hundred (100) kwh. The subsidy may be in the form of rebates, refunds and/or any other forms as may be determined by DOE, DOF and ERC, in coordination with NREB. The DOE, DOF and ERC, in coordination with the NREB and in consultation with the distribution utilities shall promulgate the mechanisms to implement this provision within six months from the effectivity of this Act.

Biofuels Act of 2006 (Republic Act No. 9367)

- **Declaration Policy¹⁸⁷** - It is hereby declared the policy of the State to reduce dependence on imported fuels with due regard to the protection of public health, the environment, and the natural ecosystems consistent with the country's sustainable economic growth that would expand opportunities for livelihood by mandating the use of biofuels as a measure to:

¹⁸³ RA No. 9513, Section 22.

¹⁸⁴ RA No. 9513, Section 23.

¹⁸⁵ RA No. 9513, Section 30.

¹⁸⁶ RA No. 9513, Section 31.

¹⁸⁷ RA 9367, SEC. 2.

- **Mandatory Use of Biofuels** – Pursuant to the above policy, it is hereby mandated that all liquid fuels for motors and engines sold in the Philippines shall contain locally-sourced biofuels components as follows:¹⁸⁸

5.1 Within two years from the effectivity of this Act, at least five percent (5%) bioethanol shall comprise the annual total volume of gasoline fuel actually sold and distributed by each and every oil company in the country; subject to requirement that all bioethanol blended gasoline shall contain a minimum of five percent (5%) bioethanol fuel by volume *Provided*, that ethanol blend conforms to PNS.

5.2 Within four years from the effectivity of this Act, the NBB created under this Act is empowered to determine the feasibility thereafter recommend to DOE to mandate a minimum of ten percent (10%) blend of bioethanol by volume into all gasoline fuel distributed and sold by each and every oil company in the country.

In the event of supply shortage of locally-produced bioethanol during the four-year period, oil companies shall be allowed to import bioethanol but only to the extent of the shortage as may be determined by NBB.

5.3 Within three months from the effectivity of this Act, a minimum of one percent (1%) biodiesel by volume shall be blended into all diesel engine fuels sold in the country: *Provided* That the biodiesel blend conforms to PNS for biodiesel.

Within two years from the effectivity of this Act, the NBB created under this Act is empowered to determine the feasibility and thereafter recommend to DOE to mandate a minimum of two percent (2%) blend of biodiesel by volume which may be increased taking into account considerations including but not limited to domestic supply and availability of locally-sourced biodiesel component.

- **Incentive Scheme** – To encourage investments in the production, distribution and use of locally-produced biofuels at and above the minimum mandated blends, and without prejudice to enjoying applicable incentives and benefits under existing laws, rules and regulations, the following additional incentives are hereby provided under this Act.¹⁸⁹

a) Specific tax

The specific tax on local or imported biofuels component, per liter of volume shall be zero (0). The gasoline and diesel fuel component, shall remain subject to the prevailing specific tax rate.

b) Value Added Tax

The sale of raw material used in the production of biofuels such as, but not limited to, coconut, jatropha, sugarcane, cassava, corn, and sweet sorghum shall be exempt from the value added tax.

c) Water Effluents

All water effluents, such as but not limited to distillery slops from the production of biofuels used as liquid fertilizer and for other agricultural purposes are considered "reuse", and are therefore, exempt from wastewater charges under the system provided under section 13 of R.A No. 9275, also known as the Philippine Clean Water Act: *Provided, however*, That such application shall be in accordance with the guidelines issued pursuant to R.A. No. 9275, subject to the monitoring and evaluation by DENR and approved by DA.

d) Financial Assistance Government financial institutions, such as the Development Bank of the Philippines, Land Bank of the Philippines, Quedancor and other government institutions providing financial services shall, in accordance with and to the extent by the enabling provisions of their respective charters or applicable laws, accord high priority to extend financing to Filipino citizens or entities, at least sixty percent (60%) of the capital stock of which belongs to citizens of the Philippines that shall engage in activities involving production storage, handling and transport of biofuel feedstock, including the blending of biofuels with petroleum, as certified by the DOE.

¹⁸⁸ RA 9367, SEC. 5.

¹⁸⁹ RA 9367, SEC. 6.

- **Prohibited Acts.** The following acts shall be prohibited:¹⁹⁰

- a) Diversion of biofuels, whether locally produced or imported, to purposes other than those envisioned in this Act;
- b) Sale of biofuel-blended gasoline or diesel that fails to comply with the minimum biofuel-blend by volume in violation of the requirement under Section 5 of this Act;
- c) Distribution, sale and use of automotive fuel containing harmful additives such as, but not limited to, MTBE at such concentration exceeding the limits to be determined by the NBB.
- d) Noncompliance with the established guidelines of the PNS and DOE adopted for the implementation of this Act; and
- e) False labeling of gasoline, diesel, biofuels and biofuel-blended gasoline and diesel.

- **Penal Provisions¹⁹¹** - Any person, who willfully aids or abets in the commission of a crime prohibited herein or who causes the commission of any such act by another shall be liable in the same manner as the principal.

In the case of association, partnerships or corporations, the penalty shall be imposed on the partner, president, chief operating officer, chief executive officer, directors or officers, responsible for the violation.

The commission of an act enumerated in Section 12, upon conviction thereof, shall suffer the penalty of one year to five years imprisonment and a fine ranging from a minimum of One million pesos (P 1,000,000.00) to Five million pesos (P 5,000,000.00).

In addition, the DOE shall confiscate any amount of such products that fail to comply with the requirements of Sections 4 & 5 of this Act, and implementing issuance of the DOE. The DOE shall determine the appropriate process and the manner of disposal and utilization of the confiscated products. The DOE is also empowered to stop and suspend the operation of businesses for refusal to comply with any order or instruction of the DOE Secretary in the exercise of his functions under this Act. Further, the DOE is empowered to impose administrative fines and penalties for any violation of the provisions of this Act, implementing rules and regulations and other issuance relative to this Act.

CREATING AN ENERGY DEVELOPMENT BOARD, DEFINING ITS POWERS AND FUNCTIONS, PROVIDING FUNDS, THEREFOR, AND FOR OTHER PURPOSES (PD 910¹⁹²)

- **Policy** - It is declared policy of the State to achieve self-reliance in the country's energy requirements primarily through the intensified and coordinated exploration, exploitation and development of indigenous energy resources in order to accelerate overall economic growth.¹⁹³

- **Appropriations** - The sum of Five Million Pesos out of any available funds from the National Treasury is hereby appropriated and authorized to be released for the organization of the Board and its initial operations. Henceforth, funds sufficient to fully carry out the functions and objectives of the Board shall be appropriated every fiscal year in the General Appropriations Act.

All fees, revenues and receipts of the Board from any and all sources including receipts from service contracts and agreements such as application and processing fees, signature bonus, discovery bonus, production bonus; all money collected from concessionaires, representing unspent work obligations,

¹⁹⁰ RA 9367, SEC. 12.

¹⁹¹ SEC. 13.

¹⁹² 22 March 1976; This law is basis for creation of Malampaya funds.

¹⁹³ PD 910, Section 1.

finances and penalties under the Petroleum Act of 1949; as well as the government share representing royalties, rentals, production share on service contracts and similar payments on the exploration, development and exploitation of energy resources, shall form part of a Special Fund to be used to finance energy resource development and exploitation programs and projects of the government and for such other purposes as may be hereafter directed by the President.¹⁹⁴

DIRECTING THE ACCELERATION OF RESEARCH, DEVELOPMENT AND UTILIZATION OF NON-CONVENTIONAL ENERGY RESOURCES AND VESTING IN THE ENERGY DEVELOPMENT BOARD POWERS AND FUNCTIONS IN CONNECTION THEREWITH, AND FOR OTHER PURPOSES (PD 1068)

- **Policy** – "...to achieve self-reliance in the country's energy requirements primarily through the intensified exploration, development, exploitation and utilization of indigenous conventional energy resources such as petroleum, coal, natural gas and liquids, water and geothermal resources and nuclear fuel resources; and non-conventional alternatives such as solar, wind, tidal and bio-mass energy which have great potential for immediate and future applications. In furtherance of this policy there is an urgent need to coordinate, integrate and control the pursuit of research, development and utilization efforts of all government agencies and instrumentalities pursuant to and in accordance with a comprehensive national energy program."¹⁹⁵

- **Incentives** – "...(a) Costs incurred in the establishment and construction of non-conventional energy conversion facilities or equipment duly certified by the Energy Development Board may, at the option of the taxpayer, be directly chargeable to expense and shall fully deductible as such from gross income in the year wherein such expenses were incurred.

(b) Exemption from payment of tariff duties and compensating tax on the importation of machinery and equipment, and spare parts and all materials required in the establishment and construction of non-conventional energy facilities or equipment subject to the conditions that said machinery, equipment, spare parts and materials of comparable price and quality are not manufactured domestically; are directly and actually needed and will be used exclusively by the taxpayer in the establishment and construction of non-conventional facilities or equipment; are covered by shipping documents in the name of the taxpayer to whom the shipment will be delivered direct by the customs authorities; and prior approval of the Energy Development Board was obtained by the taxpayer before the importation of such machinery, equipment spare parts and materials which approval shall not be unreasonably withheld: Provided, however, that the taxpayer may not sell, transfer or dispose of these machinery, equipment, spare parts or materials without the prior approval of the Energy Development Board and payment of taxes due the government: Provided, further, that should the taxpayer sell, transfer, or dispose of these machinery, equipment, spare parts or materials without the prior consent of the Energy Development Board, it shall be twice the amount of the Tax exemption granted: Provided, finally that the Energy Development Board shall allow and approve the sale, transfer, or disposition of the said items without tax, if made: (1) to another taxpayer who will establish and construct non-conventional energy conversion facilities or equipment; (2) for reason of technical obsolescence; or (3) for purposes of replacement to improve and/or expand the operations of the taxpayer.

(c) Government financial institutions such as the Development Bank of the Philippines, the Philippine National Bank, the Government Service Insurance System, the Land Bank of the Philippines and such other government institutions as are now engaged or may hereafter engage in financing of investment operations shall, in accordance with and to the extent allowed by the enabling provisions of their respective charters or applicable laws, accord high priority to applications for financial assistance by individuals/enterprises/industries participating in the national program to accelerate the research,

¹⁹⁴ PD 910, Section 8.

¹⁹⁵ PD 910, **Section 1.**

development and utilization of non-conventional energy sources, as duly recommended and endorsed by the Energy Development Board.”¹⁹⁶

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TRANSPORTATION AND INFRASTRUCTURE

Philippine Clean Air Act of 1999 (RA 8749)

- “[p]olicy of balancing development and environmental protection. To achieve this end, the framework for sustainable development shall be pursued.”¹⁹⁷
- **Regulation of All Motor Vehicles and Engines** - Any imported new or locally-assembled new motor vehicle shall not be registered unless it complies with the emission standards...¹⁹⁸
- **Pollution from Smoking** - Smoking inside a public building or an enclosed public place including public vehicles and other means of transport or in any enclosed area outside of one's private residence, private place of work or any duly designated smoking area is hereby prohibited under this Act. This provision shall be implemented by the LGUs.¹⁹⁹
- **Prohibition on Manufacture, Import and Sale of Leaded Gasoline and of Engines and/or Components Requiring Leaded Gasoline** - ... no person shall manufacture, import, sell, offer for sale, introduce into commerce, convey or otherwise dispose of, in any manner leaded gasoline and engines and components requiring the use of leaded gasoline.²⁰⁰

PD 1586

- “policy of the State to attain and maintain a rational and orderly balance between socio-economic growth and environmental protection.”²⁰¹
- Environmental Impact Statement System founded and based on the environmental impact statement required of all agencies and instrumentalities of the national government, including government owned or controlled corporations, as well as private corporations, firms and entities for every proposed project and undertaking which significantly affect the quality of the environment.²⁰²

The Philippine Fisheries Code of 1998 (RA 8550)

- **Environmental Impact Statement (EIS)** - All government agencies as well as private corporations, firms and entities who intend to undertake activities or projects which will affect the quality

¹⁹⁶ PD 1068, Section 4.

¹⁹⁷ RA 8749, Section 3.

¹⁹⁸ RA 8749, Section 22.

¹⁹⁹ RA 8749, Section 24.

²⁰⁰ RA 8749, Section 29.

²⁰¹ PD 1586, Section 1.

²⁰² PD 1586, Section 2.

of the environment shall be required to prepare a detailed Environmental Impact Statement (EIS) prior to undertaking such development activity...²⁰³

- ***Environmental Compliance Certificate (ECC)*** - All Environmental Impact Statements (EIS) shall be submitted to the Department of Environment and Natural Resources (DENR) for review and evaluation. No person, natural or juridical, shall undertake any development project without first securing an Environmental Compliance Certificate (ECC) from the Secretary of the DENR.²⁰⁴
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WATER MANAGEMENT/UTILIZATION

The Water Code of the Philippines (PD 1067)

- Except as otherwise herein provided, no person, including government instrumentalities or government-owned or controlled corporations, shall appropriate water without a water right, which shall be evidenced by a document known as a water permit.

Water rights is the privilege granted by the government to appropriate and use water.²⁰⁵

- Preference in the development of water resources shall consider security of the State, multiple use, beneficial effects, adverse effects and cost of development.²⁰⁶

- The banks or rivers and streams and the shores of the seas and lakes throughout their entire length and within a zone of 3 meters in urban areas, 20 meters in agricultural areas and 40 meters in forest areas, along their margins, are subject to the easement of public use in the interest of recreation, navigation, flottage, fishing and salvage. No person shall be allowed to stay in this zone longer than what is necessary for recreation, navigation, flottage, fishing or salvage or to build structures of any kind.²⁰⁷

- In the consideration of a proposed water resource project, due regard shall be given to ecological changes resulting from the construction of the project in order to balance the needs of development and the protection of the environment.²⁰⁸

- The conservation of fish and wild life shall receive proper consideration and shall be coordinated with other features of water resources development programs to insure that fish and wildlife values receive equal attention with other project purposes.²⁰⁹

²⁰³ RA 8550, Section 12.

²⁰⁴ RA 8550, Section 13.

²⁰⁵ PD1067, Art. 13.

²⁰⁶ PD1067, Art. 31.

²⁰⁷ PD1067, Act. 51.

²⁰⁸ PD1067, Art. 72.

²⁰⁹ PD1067, Art. 73.

- Swamps and marshes which are owned by the State and which have a primary value for waterfowl propagation or other wildlife purposes may be reserved and protected from drainage operations and development.²¹⁰

- **PENAL PROVISIONS**

The following acts shall be penalized by suspension or revocation of the violator's water permit or other right to the use of water and/or a fine of not exceeding P1,000.00, in the discretion of the Council :

- Appropriation of subterranean or ground water for domestic use by an overlying landowner without registration required by the Council;
- Non-observance of any standard of beneficial use of water.
- Failure of the appropriator to keep a record of water withdrawal when required.
- Failure to comply with any of the terms or conditions in a water permit or a water rights grant.
- Unauthorized use of water for a purpose other than that for which a right or permit was granted.
- Construction or repair of any hydraulic work or structure without duly approved plans and specifications, when required.
- Failure to install a regulating and measuring device for the control volume of water appropriated, when required.
- Unauthorized sale, lease, or transfer of water and/or water rights.
- Failure to provide adequate facilities to prevent or control diseases when required by the Council in the construction of any work for the storage, diversion, distribution and utilization of water.
- Drilling of a well without permission of the Council.
- Utilization of an existing well or ponding or spreading of water for recharging subterranean or ground water supplies without permission of the Council.
- Violation of or non-compliance with any order, rules and regulation of the Council.
- Illegal taking or diversion of water in an open canal, aqueduct or reservoir.
- Malicious destruction of hydraulic works or structures valued at not exceeding P5,000.00.²¹¹

A. A fine of not exceeding P3,000.00 or imprisonment for not more than 3 years, or both such fine and imprisonment, in the discretion of the Court, shall be imposed upon any person who commits any of the following acts:

- Appropriation of water without a water permit, unless such person is expressly exempted from securing a permit by the provisions of this code;
- Unauthorized obstruction of an irrigation canal.
- Cultivation of river bed, sand bar or tidal flat without permission.
- Malicious destruction of hydraulic works or structure valued at not exceeding Twenty-Five Thousand Pesos (P25,000.00)

B. A fine exceeding Three Thousand Pesos (P3,000.00) but not more than Six Thousand Pesos (P6,000.00) or imprisonment exceeding three years (3) years but not more than (6) years or both such fine and imprisonment in the discretion of the Court, shall be imposed on any person who commits any of the following acts:

- Distribution for public consumption of water which adversely affects the health and safety of the public.
- Excavation or enlargement of the opening of a hot spring without permission.
- Unauthorized obstruction of a river or waterway, or occupancy of a river bank or seashore without permission.

²¹⁰ PD1067, Art. 74.

²¹¹ PD1067, Art. 90.

4. Establishment of a cemetery or a waste disposal area near a source of water supply or reservoir for domestic or municipal use without permission.
5. Constructing, without prior permission of the government agency concerned, works that produce dangerous or noxious substances, or performing acts that result in the introduction of sewage, industrial waste, or any substance that pollutes a source of water supply.
6. Dumping mine tailings and sediments into rivers or waterways without permission.
7. Malicious destruction of hydraulic works or structure valued more than Twenty-five Thousand (P25,000.00) but not exceeding One Hundred Thousand Pesos (P100,000.00)

C. A fine exceeding Six Thousand Pesos (P6,000.00) but not more than ten Thousand Pesos (P10,000.00) or imprisonment exceeding six (6) years but not more than twelve (12) years, or both such fine and imprisonment, in the discretion of the Court, shall be imposed upon any person who commits any of the following acts:

1. Misrepresentation of citizenship in order to qualify for water permit.
2. Malicious destruction of a hydraulic works or structure, valued at more than One Hundred Thousand Pesos (P100,000.00).²¹²

Agriculture and Fisheries Modernization Act of 1997 (RA 8435)

- **Protection of Watershed Areas** - All watersheds that are sources of water for existing and potential irrigable areas and recharge areas of major aquifers identified by the Department of Agriculture and the Department of Environment and Natural Resources shall be preserved as such at all times.²¹³

Sector 8: Fisheries (including artisanal, subsistence and commercial)

The Philippine Fisheries Code of 1998 (RA 8550)

- objectives of the fishery sector:
 1. Conservation, protection and sustained management of the country's fishery and aquatic resources;
 2. Poverty alleviation and the provision of supplementary livelihood among municipal fisherfolk;
 3. Improvement of productivity of aquaculture within ecological limits;
 4. Optimal utilization of off-shore and deep-sea resources; and
 5. Upgrading of post-harvest technology.
- **Fees and Other Fishery Charges**²¹⁴ - The rentals for fishpond areas covered by the Fishpond Lease Agreement (FLA) and license fees for Commercial Fishing Boat License (CFBL) shall be set at levels that reflect resource rent accruing from the utilization of resources and shall be determined by the Department: *Provided*, That the Department shall also prescribe fees and other fishery charges and issue the corresponding license or permit for fishing gear, fishing accessories and other fishery activities beyond the municipal waters: *Provided, further*, That the license fees of fishery activity in municipal waters shall be determined by the Local Government Units (LGUs) in consultation with the FARMCs. The FARMCs may also recommend the appropriate license fees that will be imposed.
- **Catch Ceiling Limitations**²¹⁵ - The Secretary may prescribe limitations or quota on the total quantity of fish captured, for a specified period of time and specified area based on the best available

²¹² PD1067, Art. 91.

²¹³ RA 8435, Section 12.

²¹⁴ RA 8550, Section 6.

²¹⁵ RA 8550, Section 8.

evidence. Such a catch ceiling may be imposed per species of fish whenever necessary and practicable: *Provided, however,* That in municipal waters and fishery management areas, and waters under the jurisdiction of special agencies, catch ceilings may be established upon the concurrence and approval or recommendation of such special agency and the concerned LGU in consultation with the FARMC for conservation or ecological purposes.

- **Introduction of Foreign Aquatic Species²¹⁶** - No foreign fin fish, mollusks, crustacean or aquatic plants shall be introduced in Philippine waters without a sound ecological, biological and environmental justification based on scientific studies subject to the biosafety standard as provided for by existing laws: *Provided, however,* That the Department may approve the introduction of foreign aquatic species for scientific/research purposes.

- **Protection of Rare, Threatened and Endangered Species²¹⁷** - The Department shall declare closed seasons and take conservation and rehabilitation measures for rare, threatened and endangered species, as it may determine, and shall ban the fishing and/or taking of rare, threatened and/or endangered species, including their eggs/offspring as identified by existing laws in concurrence with concerned government agencies.

- **Commercial Fishing Vessel License and Other Licenses** - The municipal/city government shall have jurisdiction over municipal waters as defined in this Code. The municipal/city government, in consultation with the FARMC shall be responsible for the management, conservation, development, protection, utilization and disposition of all fish and fishery/aquatic resources within their respective municipal waters.

The municipal/city government may, in consultation with the FARMC, enact appropriate ordinances for this purpose and in accordance with the National Fisheries Policy. The ordinances enacted by the municipality and component city shall be reviewed pursuant to Republic Act No. 7160 by the *sanggunian* of the province which has jurisdiction over the same.

The LGUs shall also enforce all fishery laws, rules and regulations as well as valid fishery ordinances enacted by the municipal/city council.

The management of contiguous fishery resources such as bays which straddle several municipalities, cities or provinces, shall be done in an integrated manner, and shall not be based on political subdivisions of municipal waters in order to facilitate their management as single resource systems. The LGU s which share or border such resources may group themselves and coordinate with each other to achieve the objectives of integrated fishery resource management. The Integrated Fisheries and Aquatic Resources Management Councils (IFARMCs) established under Section 76 of this Code shall serve as the venues for close collaboration among LGUs in the management of contiguous resources.²¹⁸

- **Incentives for Commercial Fishers to Fish Farther into the Exclusive Economic Zone - (EEZ)** - In order to encourage fishing vessel operators to fish farther in the EEZ and beyond, new incentives for improvement of fishing vessels and acquisition of fishing equipment shall be granted in addition to incentives already available from the Board of Investments (BOI). Such incentives shall be granted subject to exhaustive evaluation of resource and exploitation conditions in the specified areas of fishing operations. The incentive shall include, but not be limited to:

²¹⁶ RA 8550, Section 10.

²¹⁷ RA 8550, Section 11.

²¹⁸ RA 8550, Section 26.

- a. long term loans supported by guarantee facilities to finance the building and acquisition and/or improvement of fishing vessels and equipment;
- b. commercial fishing vessel operators of Philippine registry shall enjoy a limited period of tax and duty exemptions on the importation of fishing vessels not more than five (5) years old, equipment and paraphernalia, the period of exemptions and guidelines shall be fixed by the Department within ninety (90) days from the effectivity of this Code;
- c. commercial fishing operator of Philippine registry engaged in fisheries in the high seas shall be entitled to duty and tax rebates on fuel consumption for commercial fisheries operations. Guidelines shall be promulgated within ninety (90) days from the effectivity of this Code by the Department; and
- d. all applicable incentives available under the Omnibus Investment Code of 1987: *Provided*, That the fishing operation project is qualified for registration and is duly registered with the BOI.²¹⁹

- **Incentives and Disincentives for Sustainable Aquaculture Practices²²⁰** - The Department shall formulate incentives and disincentives, such as, but not limited to, effluent charges, user fees and negotiable permits, to encourage compliance with the environmental standards and to promote sustainable management practices.

- **PROHIBITIONS AND PENALTIES**

- **Unauthorized Fishing or Engaging in Other Unauthorized Fisheries Activities²²¹**

No person shall exploit, occupy, produce, breed, culture, capture or gather fish, fry or fingerlings of any fishery species or fishery products, or engage in any fishery activity in Philippine waters without a license, lease or permit.

Discovery of any person in an area where he has no permit or registration papers for a fishing vessel shall constitute a *prima facie* presumption that the person and/or vessel is engaged in unauthorized fishing: *Provided*, That fishing for daily food sustenance or for leisure which is not for commercial, occupation or livelihood purposes may be allowed.

It shall be unlawful for any commercial fishing vessel to fish in bays and in such other fishery management areas which may hereinafter be declared as over-exploited.

Any commercial fishing boat captain or three (3) highest officers of the boat who commit any of the above prohibited acts upon conviction shall be punished by a fine equivalent to the value of catch or Ten thousand pesos (P10,000.00) whichever is higher, and imprisonment of six (6) months, confiscation of catch and fishing gears, and automatic revocation of license.

It shall be unlawful for any person not listed in the registry of municipal fisherfolk to engage in any commercial fishing activity in municipal waters. Any municipal fisherfolk who commits such violation shall be punished by confiscation of catch and a fine of Five hundred pesos (P500.00).

- **Poaching in Philippine Waters²²²** - It shall be unlawful for any foreign person, corporation or entity to fish or operate any fishing vessel in Philippine waters.

The entry of any foreign fishing vessel in Philippine waters shall constitute a *prima facie* evidence that the vessel is engaged in fishing in Philippine waters.

Violation of the above shall be punished by a fine of One hundred thousand U.S. Dollars (US\$100,000.00), in addition to the confiscation of its catch, fishing equipment and fishing vessel:

²¹⁹ RA 8550, Section 35.

²²⁰ RA 8550, Section 48.

²²¹ RA 8550, Section 86.

²²² RA 8550, Section 87.

Provided, That the Department is empowered to impose an administrative fine of not less than Fifty thousand U.S. Dollars (US\$50,000.00) but not more than Two hundred thousand U.S. Dollars (US\$200,000.00) or its equivalent in the Philippine currency.

- **Fishing Through Explosives, Noxious or Poisonous Substance, and/or Electricity**²²³

1. It shall be unlawful for any person to catch, take or gather or cause to be caught, taken or gathered, fish or any fishery species in Philippine waters with the use of electricity, explosives, noxious or poisonous substance such as sodium cyanide in the Philippine fishery areas, which will kill, stupefy, disable or render unconscious fish or fishery species: *Provided*, That the Department, subject to such safeguards and conditions deemed necessary and endorsement from the concerned LGUs, may allow, for research, educational or scientific purposes only, the use of electricity, poisonous or noxious substances to catch, take or gather fish or fishery species: *Provided, further*, That the use of poisonous or noxious substances to eradicate predators in fishponds in accordance with accepted scientific practices and without causing adverse environmental impact in neighboring waters and grounds shall not be construed as illegal fishing.

It will likewise be unlawful for any person, corporation or entity to possess, deal in, sell or in any manner dispose of, any fish or fishery species which have been illegally caught, taken or gathered. The discovery of dynamite, other explosives and chemical compounds which contain combustible elements, or noxious or poisonous substances, or equipment or device for electrofishing in any fishing vessel or in the possession of any fisherfolk, operator, fishing boat official or fishworker shall constitute *prima facie* evidence, that the same was used for fishing in violation of this Code. The discovery in any fishing vessel of fish caught or killed with the use of explosive, noxious or poisonous substances or by electricity shall constitute *prima facie* evidence that the fisherfolk, operator, boat official or fishworker is fishing with the use thereof.

2. Mere possession of explosive, noxious or poisonous substances or electrofishing devices for illegal fishing shall be punishable by imprisonment ranging from six (6) months to two (2) years.

3. Actual use of explosives, noxious or poisonous substances or electrofishing devices for illegal fishing shall be punishable by imprisonment ranging from five (5) years to ten (10) years without prejudice to the filing of separate criminal cases when the use of the same result to physical injury or loss of human life.

4. Dealing in, selling, or in any manner disposing of, for profit, illegally caught/gathered fisheries species shall be punished by imprisonment ranging from six (6) months to two (2) years.

In all case enumerated above, the explosives, noxious or poisonous substances and/or electrical devices, as well as the fishing vessels, fishing equipment and catch shall be forfeited.

- **Use of Fine Mesh Net**²²⁴ - It shall be unlawful to engage in fishing using nets with mesh smaller than that with which may be fixed by the Department: *Provided*, That the prohibition on the use of fine mesh net shall not apply to the gathering of fry, glass eels, elvers, *tabios*, and *alamang* and such species which by their nature are small but already mature to be identified in the implementing rules and regulations by the Department.

Violation of the above shall subject the offender to a fine from Two thousand pesos (P2,000.00) to Twenty thousand pesos (P20,000.00) or imprisonment from six (6) months to two (2) years or both such fine and imprisonment at the discretion of the court: *Provided*, That if the offense is committed by a commercial fishing vessel, the boat captain and the master fisherman shall also be subject to the penalties provided herein: *Provided, further*, That the owner/operator of the commercial fishing vessel who violates this provision shall be subjected to the same penalties provided herein: *Provided, finally*,

²²³ RA 8550, Section 88.

²²⁴ RA 8550, Section 89.

That the Department is hereby empowered to impose upon the offender an administrative fine and/or cancel his permit or license or both.

- **Use of Active Gear in the Municipal Waters and Bays and Other Fishery Management Areas**²²⁵ - It shall be unlawful to engage in fishing in municipal waters and in all bays as well as other fishery management areas using active fishing gears as defined in this Code. Violators of the above prohibitions shall suffer the following penalties:

1. The boat captain and master fisherman of the vessels who participated in the violation shall suffer the penalty of imprisonment from 2 years to 6 years;
2. The owner/operator of the vessel shall be fined from P2,000.00 to P20,000.00 upon the discretion of the court.

If the owner/operator is a corporation, the penalty shall be imposed on the chief executive officer of the Corporation.

If the owner/operator is a partnership, the penalty shall be imposed on the managing partner.

The catch shall be confiscated and forfeited.

- **Ban on Coral Exploitation and Exportation**²²⁶ - It shall be unlawful for any person or corporation to gather, possess, sell or export ordinary precious and semi-precious corals, whether raw or in processed form, except for scientific or research purposes.

Violations of this provision shall be punished by imprisonment from six (6) months to two (2) years and a fine from Two thousand pesos (P2,000.00) to Twenty thousand pesos (P20,000.00), or both such fine and imprisonment, at the discretion of the court, and forfeiture of the subject corals, including the vessel and its proper disposition.

The confiscated corals shall either be returned to the sea or donated to schools and museums for educational or scientific purposes or disposed through other means.

- **Ban on Muro-Ami, Other Methods and Gear Destructive to Coral Reefs and Other Marine Habitat**²²⁷ - It shall be unlawful for any person, natural or juridical, to fish with gear method that destroys coral reefs, seagrass beds, and other fishery marine life habitat as may be determined by the Department. "Muro-Ami" and any of its variation, and such similar gear and methods that require diving, other physical or mechanical acts to pound the coral reefs and other habitat to entrap, gather or catch fish and other fishery species are also prohibited.

The operator, boat captain, master fisherman, and recruiter or organizer of fishworkers who violate this provision shall suffer a penalty of two (2) years to ten (10) years imprisonment and a fine of not less than One hundred thousand pesos (P100,000.00) to Five hundred thousand pesos (P500,000.00) or both such fine and imprisonment, at the discretion of the court. The catch and gear used shall be confiscated.

It shall likewise be unlawful for any person or corporation to gather, sell or export white sand, silica, pebbles and any other substances which make up any marine habitat.

The person or corporation who violates this provision shall suffer a penalty of two (2) years to ten (10) years imprisonment and a fine of not less than One hundred thousand pesos (P100,000.00) to Five hundred thousand pesos (P500,000.00) or both such fine and imprisonment, at the discretion of the court. The substance taken from its marine habitat shall be confiscated.

²²⁵ RA 8550, Section 90.

²²⁶ RA 8550, Section 91.

²²⁷ RA 8550, Section 92.

- Illegal Use of Superlights²²⁸** - It shall be unlawful to engage in fishing with the use of superlights in municipal waters or in violation of the rules and regulations which may be promulgated by the Department on the use of superlights outside municipal waters. Violations of this provision shall be punished by imprisonment from 6 months to 2 years or a fine of P5,000.00 per superlight, or both such fine and imprisonment at the discretion of the courts. The superlight, fishing gears and vessel shall be confiscated.
- Conversion of Mangroves²²⁹** - It shall be unlawful for any person to convert mangroves into fishponds or for any other purposes. Violation of the provision of this section shall be punished by imprisonment of six (6) years and one (1) day to twelve (12) years and/or a fine of Eighty thousand pesos (P80,000.00): *Provided*, That if the area requires rehabilitation or restoration as determined by the court, the offender should also be required to restore or compensate for the restoration of the damage.
- Fishing in Overfished Area and During Closed Season²³⁰** - It shall be unlawful to fish in overfished area and during closed season. Violation of the provision of this section shall be punished by imprisonment of six (6) months and one (1) day to six (6) years and/or fine of Six thousand pesos (P6,000.00) and by forfeiture of the catch and cancellation of fishing permit or license.
- Fishing in Fishery Reserves, Refuge and Sanctuaries²³¹** - It shall be unlawful to fish in fishery areas declared by the Department as fishery reserves, refuge and sanctuaries. Violation of the provision of this section shall be punished by imprisonment of two (2) years to six (6) years and/or fine or P2,000.00 to Twenty thousand pesos (P20,000.00) and by forfeiture of the catch and the cancellation of fishing permit or license.
- Fishing or Taking of Rare, Threatened or Endangered Species²³²** - It shall be unlawful to fish or take rare, threatened or endangered species as listed in the CITES and as determined by the Department. Violation of the provision of this section shall be punished by imprisonment of twelve (12) years to twenty (20) years and/or fine of One hundred and twenty thousand pesos (P120,000.00) and forfeiture of the catch, and the cancellation of fishing permit.
- Capture of Sabalo and Other Breeders/Spawners²³³** - It shall be unlawful for any person to catch, gather, capture or possess mature milkfish or "sabalo" and such other breeders or spawners of other fishery species as may be determined by the Department: *Provided*, That catching of "sabalo" and other breeders/spawners for local breeding purposes or scientific or research purposes may be allowed subject to guidelines to be promulgated by the Department.

²²⁸ RA 8550, Section 93.

²²⁹ RA 8550, Section 94.

²³⁰ RA 8550, Section 95.

²³¹ RA 8550, Section 96.

²³² RA 8550, Section 97.

²³³ RA 8550, Section 98.

Violation of the provision of this section shall be punished by imprisonment of six (6) months and one (1) day to eight (8) years and/or a fine of Eighty thousand pesos (P80,000.00) and forfeiture of the catch, and fishing equipment used and revocation of license.

- **Exportation of Breeders, Spawners, Eggs or Fry** - Exportation of breeders, spawners, eggs or fish as prohibited in this Code shall be punished by imprisonment of 8 years, confiscation of the same or a fine equivalent to double the value of the same, and revocation of the fishing and/or export license/permit.

- **Importation or Exportation of Fish or Fishery Species²³⁴** - Any importation or exportation of fish or fisheries species in violation of this Code shall be punished by eight (8) years of imprisonment, a fine of Eighty thousand pesos (P80,000.00) and destruction of live fishery species or forfeiture of non-live fishery species in favor of the Department for its proper disposition: *Provided*, That violator of this provision shall be banned from being members or stock holders of companies currently engaged in fisheries or companies to be created in the future, the guidelines for which shall be promulgated by the Department.

- **Violation of Catch Ceilings²³⁵** - It shall be unlawful for any person to fish in violation of catch ceilings as determined by the Department.

Violation of the provision of this section shall be punished by imprisonment of six (6) months and one (1) day to six (6) years and/or a fine of Fifty thousand pesos (P50,000.00) and forfeiture of the catch, and fishing equipment used and revocation of license.

- **Aquatic Pollution²³⁶** - Aquatic pollution, as defined in this Code shall be unlawful.

Violation of the provision in this section shall be punished by imprisonment of six (6) years and one (1) day to twelve (12) years and/or a fine of Eighty thousand pesos (P80,000.00) plus an additional fine of Eight thousand pesos (P8,000.00) per day until such violation ceases and the fines are paid.

Marine Pollution Decree of 1976 (PD 979)

- **Prohibited Acts²³⁷**

a. discharge, dump or suffer, permit the discharge of oil, noxious gaseous and liquid substances and other harmful substances from or out of any ship, vessel, barge, or any other floating craft, or other man-made

structures at sea, by and method, means or manner, into or upon the territorial and inland navigable waters of the Philippines;

b. throw, discharge or deposit,, dump, or cause suffer or procure to be thrown, discharged, or deposited either from or out of any or from the shore, wharf, manufacturing establishment, or mill of any kind, any

²³⁴ RA 8550, Section 100.

²³⁵ RA 8550, Section 101.

²³⁶ RA 8550, Section 102.

²³⁷ RA 8550, Section 4.

refuse matter of any kind or description whatever other than that flowing from streets and sewers and passing therefrom in a liquid state into tributary of any navigable water from which the same shall float or be washed into such navigable water; and
c. deposit or cause, suffer or procure to be deposited material of any kind in any place on the bank of any navigable water or on the bank of any tributary of any navigable water, where the same shall be liable to be washed into such navigable water, either by ordinary or high tides, or by storms or floods, or otherwise, whereby navigation shall or may be impeded or obstructed or increase the level of pollution of such water.

- **Penalties for Violations²³⁸** - Any person who violates Section 4 of this Decree or any regulations prescribed in pursuance thereof, shall be liable for a fine of not less than Two Hundred Pesos nor more than Ten Thousand Pesos or by imprisonment of not less than thirty days nor more than one year or both such fine and imprisonment, for each offense, without prejudice to the civil liability of the offender in accordance with existing laws.

Any vessel from which oil or other harmful substances are discharged in violation of Section 4 or any regulation prescribed in pursuance thereof, shall be liable for the penalty of fine specified in this section, and clearance of such vessel from the port of the Philippines may be withheld until the fine is paid.

MINING AND EXTRACTION OF MATERIALS (including commercial and small-scale operations)

Water Code

- Tailings from mining operations and sediments from placer mining shall not be dumped into rivers and waterways without prior permission from the Council upon recommendation be the National Pollution Control Commission.²³⁹

Philippine Mining Act of 1995 (RA No. 7942)

- In the event of an agreement with an **indigenous cultural community** pursuant to the preceding section, the royalty payment, upon utilization of the minerals shall be agreed upon by the parties.²⁴⁰
- **“Government Share in Other Mineral Agreements.²⁴¹** - The share of the Government in co-production and joint-venture agreements shall be negotiated by the Government and the contractor taking into consideration the: (a) capital investment of the project, (b) risks involved, (c) contribution of the project to the economy, (d) other factors that will provide for a fair and equitable sharing between the Government and the contractor. The Government shall also be entitled to compensations for its other contributions which shall be agreed upon by the parties, and shall consist, among other things, the contractor's foreign stockholders arising from dividend or interest payments to the said foreign stockholders, in case of a foreign national, and all such other taxes, duties and fees as provided for under existing laws.”

²³⁸ RA 8550, Section 7.

²³⁹ Art. 77.

²⁴⁰ RA No. 7942, Section 17.

²⁴¹ RA No. 7942, Section 81.

The Government share in financial or technical assistance agreement shall consist of, among other things, the contractor's corporate income tax, excise tax, special allowance, withholding tax due from the contractor's foreign stockholders arising from dividend or interest payments to the said foreign stockholder in case of a foreign national and all such other taxes, duties and fees as provided for under existing laws.

The collection of Government share in financial or technical assistance agreement shall commence after the financial or technical assistance agreement contractor has fully recovered its pre-operating expenses, exploration, and development expenditures, inclusive.”

- **“Incentives.** - The contractors in mineral agreements, and financial or technical assistance agreements shall be entitled to the applicable fiscal and non-fiscal incentives as provided for under Executive Order No. 226, otherwise known as the Omnibus Investments Code of 1987: Provided, That holders of exploration permits may register with the Board of Investments and be entitled to the fiscal incentives granted under the said Code for the duration of the permits or extensions thereof: Provided, further, That mining activities shall always be included in the investment priorities plan.”²⁴²

People's Small-scale Mining Act of 1991 (RA 7076)

- “policy of the State to promote, develop, protect and rationalize viable small-scale mining activities in order to generate more employment opportunities and provide a equitable sharing of the nation's wealth and natural resources.”²⁴³

²⁴² RA No. 7942, Section 90.

²⁴³ RA 7076, Section 2.

SECTION 1: BIODIVERSITY MAINSTREAMING AND SUSTAINABLE USE	Sectoral practices, market forces, policies and policy factors that contribute to NEGATIVE biodiversity and ecosystem status and trends		Sectoral practices, market forces, policies and policy factors that contribute to POSITIVE biodiversity and ecosystem status and trends	
	Sectoral practices that result in <i>negative</i> biodiversity and ecosystem status	Contributing market forces, policies and policy factors	Sectoral practices that result in <i>positive</i> biodiversity and ecosystem status	Contributing market forces, policies and policy factors

ANNEX B

Sector 1: <u>Industrial manufacturing and processing</u>	<ul style="list-style-type: none"> - Pollution - Disposal of waste (solid, liquid, gas) in waterways, leachates, atmosphere, etc. - Some reports that while industries segregate, they are just mixed together by the waste collector - Poor packaging (non-use of biodegradable materials i.e., tetrapacks, Styrofoam, plastics) 	<ul style="list-style-type: none"> - Failure to strictly comply with the law - Weak policy implementation/ monitoring - Cheap waste disposal cost - No/Low incentive for waste reduction - Limited support for recycling (urban mining) 	<ul style="list-style-type: none"> - Practice of segregation. Collections based on type of waste are scheduled - Regulation, restriction or prohibition of Toxic Substances and Hazardous and Nuclear Wastes that present unreasonable risk and/or injury to health or the environment - Existence of Waste Water Treatment/ Sewage Treatment Plants and Septage Treatment Facility, waste processing industries, Solid waste recycling facilities (MRFs), Total Pollution Load - Desludging of biosolid / sludge from septic tanks - Issuance of ECCs 	<ul style="list-style-type: none"> - Ecological Solid Waste Management Act of 2000 - Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (RA 6969) - Clean Water Act - Clean Air Act - Mining Act - Presidential Decree No. 1586²⁴⁴
	<ul style="list-style-type: none"> - Inefficient use of raw materials - Illegal Material sourcing (non-agricultural production of pharmaceuticals) 	<ul style="list-style-type: none"> - Low/no incentive for waste reduction - Weak penalty implementations - Limited CSR programs 	<ul style="list-style-type: none"> - Prohibition on Use of Plastic - Use of reusable bags 	<ul style="list-style-type: none"> - Local Ordinances prohibiting use of plastic. Or if a customer requests for plastic, a certain fee is charged which is remitted to the local government²⁴⁵
	<ul style="list-style-type: none"> - deliberate non-compliance or lack of compliance with environmental laws (eg., Programmatic impact assessment) due to ignorance/misinterpretation of terms 	<ul style="list-style-type: none"> - Weak enforcement; - lack of monitoring teams who can monitor 24/7 	<ul style="list-style-type: none"> - awards, International Organization for Standardization (ISO), Global Reporting Initiative, Extractive Industries Transparency Initiative (EITI), Kalabasa Awards 	<ul style="list-style-type: none"> - Proactive/compliant practices
	<ul style="list-style-type: none"> - Poor Industrial Planning 	<ul style="list-style-type: none"> - No comprehensive zoning policy with respect to location of industries 		
Sector 2: <u>Forestry and forest-related activities</u>	<ul style="list-style-type: none"> - over exploitation of forest resources - Indiscriminate & Illegal logging, and clearing and 	<ul style="list-style-type: none"> - Market demand for wood, especially fuel wood, high value crops, roads, aquaculture and residential 	<ul style="list-style-type: none"> - Reforestation/ rainforest initiatives - community-based forest management 	<ul style="list-style-type: none"> - EO 23 on moratorium on cutting and harvesting timber - Implementation of the

²⁴⁴ Establishing an Environmental Impact Statement System, including Environmental Management Related Measures and for Other Purposes.

²⁴⁵ Example is Quezon City ordinance.

SECTION 1: BIODIVERSITY MAINSTREAMING AND SUSTAINABLE USE	Sectoral practices, market forces, policies and policy factors that contribute to NEGATIVE biodiversity and ecosystem status and trends		Sectoral practices, market forces, policies and policy factors that contribute to POSITIVE biodiversity and ecosystem status and trends	
	Sectoral practices that result in <i>negative</i> biodiversity and ecosystem status	Contributing market forces, policies and policy factors	Sectoral practices that result in <i>positive</i> biodiversity and ecosystem status	Contributing market forces, policies and policy factors

<i>(including industrial, subsistence, small-scale)</i>	conversion to other uses such as mining and other development (0.73 percent annual loss in forest cover during the period 2005-2010. ²⁴⁶ As of 2010, the country has 76, 650 sq. km. classified as forest) ²⁴⁷ - Deforestation due to unsustainable farming practices leading to Habitat Loss and Degradation - slash and burn - government reforestation efforts are not science-based	areas - The burgeoning human population against a limited land base causes forestland conversion ²⁴⁸ - rural poverty	initiatives - private sector (Chamber of Mines) initiatives such as adopt a forest, NGP and CBFM participation, Palawan Council for Sustainable Development, maintenance of forest parks - Intercropping of cash crops (i.e. coffee, cacao and other fruit trees) which maybe a source of livelihood to the community - On-farm conservation - In-situ and Ex-situ Seed Banking	National Greening Program (NGP) as a government priority. The NGP aims to plant 1.5 billion trees covering 15,000 sq. km. of public lands by the year 2016 and is the main strategy for reforestation of the Philippine government. ²⁴⁹ - Strategic Environmental Plan
	- plantation agriculture - unsustainable agriculture practices in forest lands - conversion into settlements	- forest bill and permanent forest boundary policy not finalized yet - corruption	- experiential tourism - landscape management approach	

Sector 3: <i>Agriculture (including small scale, subsistence and commodity)</i>	- Land Use and Zoning Ordinances (e.g., CLUP), in some instances, are not enacted, or if enacted, are not strictly followed - overlap with PAs, KBAs and critical habitats - land conversion including upland - Property awarded pursuant to CARP was not used for agricultural purposes; Conversion of agricultural land (prime productive areas) into residential, recreational	- Lack of enforcement of law and practice (e.g., SALT) - Lack of knowledge on Land Use and Zoning Ordinances - Corruption (some reports) - Lack of coordination among government agencies such as Department of Agrarian Reform, Department of Agriculture, Department of Environment and Natural Resources, National Mapping and Resource	- Legal framework identifying Network of Areas for Agricultural and Agro-Industrial Development, requiring Land Use and Zoning Ordinances - Integrated pest management, organic law, agro-eco-tourism (e.g. costales farms), integration of agro tourism in curriculum - Some CARP awardees are able to use land for agricultural purposes	- Agriculture and Fisheries Modernization Act of 1997 (RA 8435) - Local Government Code of 1991 supporting CLUP
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²⁴⁶ UN-FAO 2010.

²⁴⁷ UN-FAO 2010.

²⁴⁸ Satellite maps show that the remaining forest habitats in key biodiversity areas are slowly being threatened by the infiltration of perennial crops such as coconut, abaca, as well as annual crops such as corn. A significant number of animals, such as the Palawan peacock pheasant

(*Polyplectron emphanum*), Philippine cockatoo (*Cacatua haematuropygia*), talking mynah (*Gracula religiosa*), blue naped parrot (*Tanygnathus lucionensis*), and Asian small-clawed otter (*Amblonyx cinereus*), are also overharvested.

²⁴⁹ Executive Order No. 26 (26 February 2011).

SECTION 1: BIODIVERSITY MAINSTREAMING AND SUSTAINABLE USE	Sectoral practices, market forces, policies and policy factors that contribute to NEGATIVE biodiversity and ecosystem status and trends		Sectoral practices, market forces, policies and policy factors that contribute to POSITIVE biodiversity and ecosystem status and trends	
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	areas	<p>Information (NAMRIA), National Commission on Indigenous Peoples (NCIP)</p> <ul style="list-style-type: none"> - CLUPs are done as a matter of compliance - lack of tenurial rights, conflict between CLUP & Forest Land Use Planning (FLUP) - No financial & technical assistance provided by the government for farmers to start their own project - Economic benefits to conversion - Market Demand 	<ul style="list-style-type: none"> - Crops are no longer dictated by land owners resulting in biodiversity (native species) 	
	- Planting of High Value Crops (resulting in decrease in biodiversity)	<ul style="list-style-type: none"> - High demand for HVC - Incentives to farmers & researchers - High Value Crops (HVCC law; 7900) as traditional crops are not promoted 	<ul style="list-style-type: none"> - Farmers plant traditional varieties (promoting biodiversity) 	<ul style="list-style-type: none"> - AO encouraging use of traditional varieties per town
	<ul style="list-style-type: none"> - Bringing in of exotic species of plants (probable introduction of IAS) - Bulk importation of seeds 	<ul style="list-style-type: none"> - Market demand - Aesthetic purposes (e.g., collection of a certain individual) 	<ul style="list-style-type: none"> - Prevention of inadvertent introduction of pests & diseases 	<ul style="list-style-type: none"> - RA1416 (Quarantine Rules)
	<ul style="list-style-type: none"> - Planting of GM crops (e.g., RR corn) 	<ul style="list-style-type: none"> - Convenience due to Modern technology - Less weeds as herbicide kills everything (only RR corn crops are left) - Food security - High population growth 		
	<ul style="list-style-type: none"> - Planting of modern varieties registered with National Seed Industry Council (NSIC) (resulting in decrease to biodiversity in affected area & displacement of traditional varieties) 	<ul style="list-style-type: none"> - Crop Loans offered by the government - Plant Variety Protection Law 		
	<ul style="list-style-type: none"> - Planting of F1 hybrid 	<ul style="list-style-type: none"> - Seed subsidy for high-yielding varieties (specifically F1 hybrid varieties) 		
	<ul style="list-style-type: none"> - Promotion of specific breeds of livestock & poultry 	<ul style="list-style-type: none"> - Market demand - Economic reasons 		

SECTION 1: BIODIVERSITY MAINSTREAMING AND SUSTAINABLE USE	Sectoral practices, market forces, policies and policy factors that contribute to NEGATIVE biodiversity and ecosystem status and trends		Sectoral practices, market forces, policies and policy factors that contribute to POSITIVE biodiversity and ecosystem status and trends	
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	for economic purposes			
	<ul style="list-style-type: none"> - Land Pollution [In the agriculture sector, application of agrochemicals (i.e. fertilizers, herbicides, pesticides) remains a common practice among farmers in rural areas. Intensive use of agrochemicals has been known to create and result to both environmental problems and diseases.] - excessive use of agro chemicals - use of prohibited chemicals (e.g.DDT) 	<ul style="list-style-type: none"> - Lack of technical support in harnessing technology to utilize methane - Demand for high-yielding varieties - Over population (more mouths to feed, less lands to till) 	<ul style="list-style-type: none"> - Existence of National Organic Agriculture Program - Indigenous knowledge practice on farming - Sustainable agricultural practices (crop-rotation, mixed livestock & crops) - DA AO 15-2010 establishing a program for conservation and utilization of domesticated native food animals - DA AO on crops (for the conservation of genetic material of wild relatives of domesticated crops) - Development of livestock waste management program including harnessing of biogas/methane - Use of chicken dung for fertilizer - rice, alternate wetting and drying to lessen methane emissions upon introduction of fertilizer; also lessens water usage 	<ul style="list-style-type: none"> - Organic Agriculture Act of 2010 (RA 10068) - Heritage of those practicing indigenous farming - Niche market - RA 7160 which empowers LGU to implement environmental laws - LLDA regulation on wastewater regulation - RA 8749 Clean Air Act an act providing comprehensive air pollution control policy and other purposes - RA 9275 Philippine Clean Water Act of 2004
	<ul style="list-style-type: none"> - commercial scale piggeries do not have ECCs - absence of proper waste management practices (livestock production due to increased demand for meat (64% of hog industry is backyard, BAS) contributes to pollution) - improper waste disposal waste management 	<ul style="list-style-type: none"> - Increased demand for meat and sources of livelihood for farmers and households 		
	<ul style="list-style-type: none"> - Displacement of local varieties by modern varieties planted in monocropping system - Cultivation of GMOs that contaminate local varieties - Commercial agriculture promoting monoculture 	<ul style="list-style-type: none"> - Policy favoring GMOs and hybrids - Over emphasis on agronomic performance to the detriment of sustainability and biodiversity - Demand for agricultural food products - subsidies for high value 	<ul style="list-style-type: none"> - seed conservation 	<ul style="list-style-type: none"> - Existence of network of farmers practicing (e.g. MASIPAG)

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	- production of high value agricultural products that result into forest conversion and PA encroachment	crops - entry of agricultural products at lesser prices - Demand for medicinal and ornamental plants - No policy on ABS; traditional knowledge digital library		
	Insufficient Funding		- On-farm conservation - In-situ and Ex-situ Seed Banking	- Heritage of farmers

Sector 4: <u>Tourism and Recreation</u>	- systems not fully developed to capitalize on alternative revenue streams from ecotourism and ecosystem services	- moratorium on the tourism enterprise zone applications due to impasse with the Bureau of Internal Revenue to issue necessary Revenue Regulation	- management of ecotourism parks which funds conservation of ecosystem within the area	- funding initiated/donations by the government, private sector or third parties to causes on endangered species such as the Philippine Eagle
		- Lack of awareness on Biodiversity with respect to tourism utilization and sustainable Biodiversity conservation - No full costing of ecosystem services - insufficient policies that will ensure sustainable tourism to take place such as:		- Updated National Ecotourism Strategy which identifies priority areas - Accredited resorts practicing Sustainable diving (green fin UNEP)
	- Crowding of visitors and infrastructures - carrying capacity of tourist attractions exceeded	- Carrying capacity;	Pioneering projects on valuation (e.g. WAVES Project - Wealth Accounting and Valuation of Ecosystems Services; TEEB Project - The Economics of Ecosystem and Biodiversity)	- Puerto Princesa Underground River and Tubattaha Nature Park have carrying capacity studies
	Practices not according to standards (i.e. liquid and solid waste)	Standards (structures, transport, support services, accreditation, zoning/spatial planning, etc.);	Local initiatives on Agro Tourism	
	Marginalization of local communities	Lack of Benefit sharing mechanism; Weak implementation of existing policies Need for Capacity building;		
	- Improper use of	- Local policies not		-

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	spaces for easements and buffer zones - conversion of coastal zones and foreshore lands	harmonized/consistent with national policies (e.g. foreshores)		
	- differentiation between tourism and ecotourism	- DOT's program on conservation of species for tourism (sea turtles, mantas, except thresher sharks) -	- It's more fun in the Philippines campaign stress on conservation of BD and responsible tourism	-
	- awareness of tourist sector workers (eg., dive masters who allow vandalism on coral reefs)	- baselines not established for visitor awareness neither is the progress on awareness monitored	WTO Code of Conduct	
Sector 5: <u>Energy (including exploration, transportation, extraction practices)</u>	- green options are still limited (availability of resources, cost, technology)	- lack of enforcement	- Green Energy Option program (provides end-users the option to choose RE resources as their sources of energy) - Incentives for Renewable Energy Projects and Activities - Incentives for Farmers Engaged in the Plantation of Biomass Resources (without necessarily displacing biodiversity) - Adoption of Waste-To-Energy Technologies	- Renewable Energy Act of 2008 ²⁵⁰ - Biofuels Act of 2006 - clean water, clean air, R.A. No. 6969, NIPAS law, IPRA, solid waste, forestry law, local government code, Energy Regulation 194 (1 centavo per kilowatt hour -- 1/2 for electrification ; 1/4 for livelihoods and health; 1/4 for reforestation) 700 million per 100 megawatt and then 15,000 megawatt in total
	- Inefficient public transport system		- Incentives on use of locally produced biofuel	- Biofuels Act of 2006 - CSR of power companies
	- Emission of coal-fired power plants - No comprehensive policy to encourage alternative and sustainable sources of energy (e.g. wind, solar)	- Increasing demand for energy	- Environmental monitoring - Shift to Natural Gas - Mainstream Green Architecture	

²⁵⁰ RA 9513.

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	- Lack of campaign on sustainable energy lifestyle			
	- Funds from the environment are used for non-environmental purposes (e.g., Malampaya funds)	- PD 910 whereby Energy Development Board may use funds "for such other purposes as may be hereafter directed by the President" - Corruption		
			- Incentives on use of Non-conventional Energy Sources	- PD 1068
	- Convergence of concerned agencies (DOE & EMB) i.e., circulating fluidized beds. DOE says that we should use CFB but fly ash is not suitable for cement production and ends up in landfills			
	- land conversion - cutting trees and clearing land	- long gestation period of RE allows entry of fossil fired such as coal capturing market for at least 25 years	- Reforestation	- IFC safeguards- 80% of loans in the world, 78 international banks have embraced this IFC safeguards (you cannot loan if you cannot show the triple bottomline - human rights, labor practices, IP welfare, gender equality, biodiversity) equator banks
		RE law has plenty of incentives but it is not actualized; implementation of incentives of the law --- feed in tariff; renewable portfolio standard - 1% of the supply is from RE.		- mega trends for KPMG and Price waterhouse;
	waste treatment		sharing of economic benefits (through taxes, CSR which is more strategic)	adoption of a rare species as indicator of habitat health (habitat management and tracking of species)
	waste management such as sludge		low carbon footprint	long term ecological research station
			resource security through technology and innovation	carbon column to measure the carbon
				- passage of land use act
non renewable (fossil, bunker, fuel, coal, carbon)	land conversion - cutting trees and clearing land	12% VAT on non-renewable and 0 VAT for renewable; but still the price is cheaper for	compliance with EIA, CSR, waste management	

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		non- RE and widely available		
	acid rain from coal - all with sulfur content;		waste management and accounting	
	subsidy to oil (coming from oil producing countries)			
		- Construction of large dams requires land clearing		

Sector 6: <u>Transportation and infrastructure</u>	- Air Pollution (Based on the 2009 national emissions inventory, the transport sector is the major source of air pollution in many regions of the country. It was estimated that 65% of the pollutants came from mobile sources, 21% from stationary sources, and the remaining 14% from area sources ²⁵¹) GHG that can cause climate change; more cars because of inefficient mass transit and crime incidence	- Non-compliance with law - Corruption (not rampant but there are instances)	- Regulation of All Motor Vehicles to ensure that they comply with the prescribed emission standards - Prohibition on Smoking except for designated areas - Prohibition on Manufacture, Import and Sale of Leaded Gasoline and of Engines and/or Components Requiring Leaded Gasoline which significantly reduced - use of low emission fuels; natural gas, electricity - alternative transport modalities (waterways)	- Implementation of the Philippine Clean Air Act of 1999 - Support from local government through enactment of ordinances on prohibition on smoking - Marine Pollution Act
	Import of used vehicles import of old engines	Not abreast with technology Lack of awareness on clean energy options	- Environmental Impact Statement & Environment Compliance Certificate requirements to ensure projects have no adverse effects on environment	- PD1586 - The Philippine Fisheries Code of 1998 ²⁵²
	Non-regulation of vehicle purchase and ownership thus number coding scheme/vehicle reduction schemes are not sufficient	Urbanization; poor planning of road networks		
	- Lack of appropriate policies that encourage green design - Little or no access to technology that allows		- Sustainable Cities, green buildings	

²⁵¹ EMB, DENR, 2009.

²⁵² RA 8550.

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	infrastructure to be more friendly (ex cement mix that is porous)			
	- Lack of capacity of LGU to adopt to green technology; DPWH is not a BD friendly agency			
	- Release of ballast water and dumping (pathway for IAS and pollution)			
	compliance on grounding incidents			- redefinition of shipping lanes to avoid PSSA
	- Coastal reclamation	- Absence of policy governing proposed reclamation sites/areas in coastal and marine and riparian areas		
	- improper siting of infrastructure (forests, coastal) ineffective road expansion /construction	- sometimes the deployment of infra is politically influenced		
	- land use conflicts			

Sector 7: <u>Water management/ utilization</u>	<ul style="list-style-type: none"> - Water Pollution due to persistent organic pollutants (POPS), etc. <p>(For the whole country, only half of the garbage generated is collected. Uncollected garbage ends up mostly in rivers, esteros, and other water bodies, clogging the drainage system and leading to floods and the pollution of major water bodies.)</p> <ul style="list-style-type: none"> - Seeding of IAS - Outdated Water Code 		- Regulation on use of water with penal provisions for violation thereof	<ul style="list-style-type: none"> - Water Code of the Philippines²⁵³ - Clean Water Act of 1995 - Institutionalization of water quality management areas (WQMA)
	Diverting natural water systems to other areas for domestic use (e.g		-Existence of policy on protection of watershed areas	- Agriculture and Fisheries Modernization Act of 1997 ²⁵⁴

253 PD 1067.

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	Angat-Umiray) - Conflicting objectives in multiple use water system (e.g. Laguna Lake - recreation, fishing, wastes)		- business and civil society groups initiatives to adopt a waterway and commit to clean and rehabilitate it	- Adopt An Estero Program [In its 15 months of implementation, around 250 Memoranda of Agreements (MOAs) between the DENR and various LGUs, companies and NGOs have been signed. Visible signs of improvement were also observed in the adopted waterways.]
	- Lakes and rivers are not prioritized for ecosystem integrity and conservation	- Informal settlers and patronage politics	- Marikina Riverbanks c/o Bayani Fernando (political will to implement easements) except Riverbank Mall - Pasig River Rehabilitation Program - Iloilo River Rehabilitation focusing on native species - Lake Mainit Development Alliance initiatives - Laguna Lake - Taal PA	- Laguna Lake Development Authority
	No sense of water conservation	No penalty for wasting water	Water recycling	Water conservation Policy Water Code
	- Very weak linkage on the cost and benefits of water usage- distribution- production- disposal - Weak appreciation by water concessionaires in the management of watersheds	- Weak implementation of policies and programs - Lack of policies	Environmental Fees	Existence of policy on protection of watershed areas
	Loss of water through leakage (50% system loss in Metro Manila)	Need to know who covers cost of system loss if not, passed on to customers No resolution yet on system loss management		
	Illegal Ground Water extraction	Weak implementation and monitoring of policies No efficient water distribution system	Water Code	
	- Loss of habitat because of over extraction, and alteration of water	- Demand for fresh water is uncontrolled - Increasing demand		

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	courses and supply - Cheap water rates			
	High volume of water used for irrigation	No regulation in the use of agricultural water	Establishment of small rain water harvest facilities/ reservoirs to reduce the usage of service and ground water	Local Government Ordinances
			<ul style="list-style-type: none"> - Implementation of Buffer Zones in water ways - Completion of the Geo-hazard Map of the Philippines 	<ul style="list-style-type: none"> - Different laws i.e. mining act, forest, local government codes - Pasig and Manila Bay rehabilitation activities - "Ilog ko, Linis ko" Program

Sector 8: <u><i>Fisheries (including artisanal, subsistence and commercial)</i></u>	<ul style="list-style-type: none"> - illegal-unreported-and-unregulated fishing (e.g., Dynamite Fishing, Poaching) - Habitat Loss - Introductions of exotic species have also taken a toll, particularly in wetlands [The following groups have had a particularly negative impact on wetland biodiversity: fish such as the giant catfish and black bass; toads and frogs, including the marine toad (<i>Bufo marinus</i>), the American bullfrog (<i>Rana catesbeiana</i>) and leopard frog (<i>Rana tigrina</i>); and aquatic plants like the water hyacinth and water fern]. 	<ul style="list-style-type: none"> - Lack of knowledge & information - Lack of enforcement, Corruption - Poverty - Overpopulation 	<ul style="list-style-type: none"> - Use of incentives to promote sustainable practices - Regulation on Foreign Aquatic Species - Incentives for Commercial Fishers to Fish Farther into the EEZ - Incentives and Disincentives for Sustainable Aquaculture Practices - Prohibition & Penalties (Unauthorized Fishing Activities, Poaching, Fishing through Explosives, Use of Fine Mesh, Ban on Coral Exploitation & Exportation, Muro-Ami, etc.) 	<ul style="list-style-type: none"> - The Philippine Fisheries Code of 1998²⁵⁵ - Marine Pollution Decree of 1976²⁵⁶
	<ul style="list-style-type: none"> - Conversion of Mangrove Areas resulting in Habitat Loss 	<ul style="list-style-type: none"> - Aquaculture 	<ul style="list-style-type: none"> - Restoration of mangroves 	<ul style="list-style-type: none"> - Law prohibiting conversion of mangroves - Regulation/program on restoration of mangroves
	<ul style="list-style-type: none"> - Importation & 	<ul style="list-style-type: none"> - Aesthetics 	<ul style="list-style-type: none"> - Regulation on Foreign 	<ul style="list-style-type: none"> - Fisheries Act

²⁵⁵ RA 8550.

²⁵⁶ PD979.

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	Aquaculture of exotic species or non-indigenous species for food & ornamental industry	- Market demand	Aquatic Species	
	- Overharvesting of fish (juveniles & adults) - Fishermen who fish despite Closed Season	- Market demand - Lack of knowledge & awareness & misinformation - Lack of alternative on source of income; - Shortage of policy on catch and seasonal limits	- Regulation on Mesh Size - Closed Season - Initiatives (government, private sector, third parties) to incentivize best practices in MPA	- Fisheries Act - For example, Para El Mar seeks to recognize and - provide incentives for best practices in marine protected area (MPA) management
	- Water Pollution - Unregulated aquaculture (e.g., fishponds) - Overstocking of fish - Aquaculture of carnivore species	- Industries, aquaculture (feeds, antibiotics) - Lack of knowledge - Market demand		
	- Coral-reef transplanting	- Lack of alternative source	- Initiatives on coral-reef restoration - Coral-reef transplanting	- CSR - Existence of MPA
	- Lack of technology to culture indigenous local species			
	- Overfeeding on capture fisheries			
	- Overfishing - Live reef food fish trade	- High demand of live fish locally and internationally - high demand for ornamental fish and marine ornamental products	FARMCs, MPAs, MSN, CTI,	Fisheries Code, open and closed seasons for certain species, EO 533, EO 578
	- land-based sedimentation (irresponsible land use practices) - land-based pollution (agri inputs and livestock)			
	Harvesting of specific species resulting into the disruption of ecological processes (eg. Predator of COT)			
	- IAS			
	- conversion of mangroves to aquaculture	- low lease rates for Fishpond Lease Agreement		implement ICM, Fisheries Code
	- conversion of mangroves to human settlements and other industrial use	- LGUs fail to integrate CRM with CLUPs		

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Sector 9: Mining and extraction of materials (including commercial and small-scale operations)				
Sector 9: <u>Mining and extraction of materials (including commercial and small-scale operations)</u>	<ul style="list-style-type: none"> - Mining claims and rights overlap with defined areas for PAs, ancestral lands including those planned for conservation areas that threaten ecological sustainability - prevalence of legal and illegal small-scale mining - in relation to small scale mining, use of toxic materials such as mercury for recovery and processing of metals 	<ul style="list-style-type: none"> - Lack of coordination & enforcement - Corruption - poverty as a contributing force to small scale mining high demand for metals for jewelry and electronics and other industries * in relation to small scale mining, high prices offered by offshore buyers in relation to tax imposed by BIR 	<ul style="list-style-type: none"> - Regulation mineral agreements, financial or technical assistance - recognition of no-go zones - CSR and biodiversity enhancement programs such as adopting species for protection (ex. Holcim adopting rafflesia), maintenance of forest parks (see forest) - baseline data on biodiversity by mining companies - membership of Chamber Of Mines of the Philippines to International Council on Minerals and Metals 	<ul style="list-style-type: none"> - Philippine Mining Act of 1995²⁵⁷ - People's Small-Scale Mining Act of 1991²⁵⁸ - EO 79
	<ul style="list-style-type: none"> - Open pit mining operations that necessitate land clearing and habitat destruction 		<ul style="list-style-type: none"> - Regulation on Tailings from mining operations and sediments into rivers and waterways 	<ul style="list-style-type: none"> - Water Code
	<ul style="list-style-type: none"> - Destructive small scale mining companies 		<ul style="list-style-type: none"> - CSR (mining companies) 	
	<ul style="list-style-type: none"> - Black sand mining - 	<ul style="list-style-type: none"> Incorporate BD conservation into mining 		
Sector 10: Human Settlements				
Section 10: <u>Human Settlements</u>	<ul style="list-style-type: none"> - Conversion of Forest to Agricultural Lands to residential settlements to the extent of affecting the ecosystems 		<ul style="list-style-type: none"> - Enforcement of Waste Segregation 	
	<ul style="list-style-type: none"> Deficit in Agrarian Reform is being filled by public lands usually forests 	<ul style="list-style-type: none"> CARP Weak Land Use Planning No Existing National Land Use Plan 	<ul style="list-style-type: none"> Implementation of Land Use Management Plan in Settlement i.e. IP Settlements Maintaining and protecting territories that assumes that the value of the community is consistent on the 	

²⁵⁷ RA 7942.

²⁵⁸ RA 7076.

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			conservation of biodiversity (i.e. Batanes)	
	Informal Settlers	No Anti-squatting law for government/public lands	Anti-squatting Law	
	No consideration of long term impact on biodiversity and habitat			
	Actual household wastes		Existence of household composting facilities	
			Mainstreaming of biodiversity conservation in Local Government	Organize Human Settlements

Section 11: <u>Wildlife Management</u>	<ul style="list-style-type: none"> - Illegal Wildlife Trading²⁵⁹ - The exploitation of some by-products of wildlife species also endangers their survival, such as the nests produced by the edible-nest swiftlets (<i>Collocalia fuciphaga</i>) Captive Breeding of critically endangered species 	<ul style="list-style-type: none"> - Weak implementation of habitat conservation, and PA Management strategy 	<ul style="list-style-type: none"> - Captive Breeding of critically endangered species 	<ul style="list-style-type: none"> - Ensures the existence of the endangered species
	<ul style="list-style-type: none"> - Over-harvesting of resources such as medicinal and ornamental plants and wild animals for trade and domestic use has contributed to habitat degradation and dramatic reductions in species populations. Among the most highly prized ornamental plants are the jade vine (<i>Strongylodon macrobotrys</i>), giant staghorn fern (<i>Platyserium grande</i>), waling waling (<i>Euanthe sanderiana</i>) and many tree fern species. 	<ul style="list-style-type: none"> - Market demand for “exotic” animals - Violation of existing relevant laws - Lack of enforcement 	<ul style="list-style-type: none"> - A legal framework that protects forest resources and access, and application of all relevant laws (Areas needed for Forest Purposed, Incentives to engage in agro-forest farm, Penalty Clauses for violation of law,²⁶⁰ etc.) 	<ul style="list-style-type: none"> - Revised Forestry Code of the Philippines (PD 705, as amended by relevant laws)
	Migratory Animals	Weak implementation of Conservation Law	LGUs – flagship species to conserve	

²⁵⁹ Hornbills, parrots, doves, cockatoo are most favored targets for pet trade. Likewise, ivory tusks from elephants are smuggled out of the country either to be sold to nearby countries.

²⁶⁰ Revised Forestry Code.

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	Monkey Farms	No regulations		
	- illegal trade and poaching (terrestrial and marine) in wildlife resulting to extraction of biodiversity resources	- Non-compliance with intellectual property rights - poverty is a driver eg. Is continued selling of turtle eggs - attractive prices in the international markets		- implementation of wildlife act; need for accession to nagoya protocol - need for bio prospecting law
Data sources and assumptions	Laws and regulations, news reports. For details, see Footnotes.			

ANNEX C

AGROBIODIVERSITY SECTION 2: PROTECTION	Policies and policy factors that contribute to INEFFECTIVE species and ecosystem protection		Policies and policy factors that contribute to EFFECTIVE species and ecosystem protection		RECOMMENDATIONS
	<i>Ineffective</i> system- and site-level protection practices	Contributing policies and policy factors	<i>Effective</i> system-level and site-level protection practices	Contributing policies and policy factors	
Agrobiodiversity - comprises the diversity of genetic resources of plants, animals, and microorganisms that are important to food production and agriculture. (A component of this are plant genetic resources defined as "any genetic material of plant of actual or potential value for food and agriculture".) - ITPGRFA 2004			- Indigenous protection practices/farming systems e.g. Muyong system, farm cultivation practices (1ha with 5 varieties)	- customary or indigenous knowledge systems - IPRA law - DA Policy being implemented promoting at least 2 traditional varieties of rice, and seed banking of these traditional varieties per municipality	- Document and promote indigenous practices - review land conversion guidelines - Promote/popularize DA policy - Revisit tax policy on agriculture land conversion - fast track the approval of National Land Use Act (NLUA)
		-	*Organic farming	- Organic Agriculture Act of 2010 - Certification for good agriculture practices	*Advocate organic farming
			*Designate a central disposal facility for organic waste processed as organic material	Ecological Solid Waste Management Act	*Wide dissemination & technology transfer of organic farming
			* Davao City supported the ban on aerial spraying.		* Reduce overuse of pesticides. Advocate G.A.P. Following set parameters.
			Integrated Pest Management (IPM)		

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	<i>Ineffective</i> system- and site-level protection practices	Contributing policies and policy factors	<i>Effective</i> system-level and site-level protection practices	Contributing policies and policy factors	
			Diversification	Organic Agriculture Act	Assessment of agricultural based One Town One Product (OTOP) on biodiversity conservation
			PPP (private public partnership)	Clean Water Act DA Guidelines on use of agricultural waste water EIA System	*Monitor implementation of Clean Water Act plan for piggery and poultry farms * broaden scope of PP partnerships
			Rainforestation promoting native species		Promote and implement Rainforestation and/or use of indigenous forest species in National Greening Program

COASTAL, MARINE, WETLANDS SECTION 2: PROTECTION	Policies and policy factors that contribute to INEFFECTIVE species and ecosystem protection		Policies and policy factors that contribute to EFFECTIVE species and ecosystem protection		RECOMMENDATIONS
	<i>Ineffective</i> system- and site-level protection practices	Contributing policies and policy factors	<i>Effective</i> system-level and site-level protection practices	Contributing policies and policy factors	
Coastal & marine (coral reefs, mangroves, seagrass)	<ul style="list-style-type: none"> Zoning practices for coastal areas are not science based Absolute prohibition/shotgun policy of mangrove cutting 	<p>Fisheries Code</p> <ol style="list-style-type: none"> For reversion of fishponds: Concern: undeclared abandoned fishponds; slow mechanism ; Tourism policies/unregulated tourism Pros: can protect Cons: can attract tourists/boost tourism which then can contribute to the destruction of the mangroves/ mangrove areas Unregulated water use 	<p>Community-led mangrove reforestation initiatives (e.g. Masinloc & Palauig by Benguet Corp.)</p> <ul style="list-style-type: none"> Aquasilviculture Inter-LGU alliances for coastal and resource management (i.e. Batman in Tanon, Banate Bay, VIP, Northern Negros Development Alliance) Strong enforcement of policies Regulation of waste water and solid waste disposal into inland and open bodies of water including vessels and ships 	<p>*Ecotourism, mangrove planting, policy on AUU (abandoned, underutilized and unused fishponds) - FAO 197-1 of BFAR</p> <p>* Provincial mangrove plan (mapping) in Batangas;</p> <p>* In Palawan – mangrove planting by students and civil society</p> <ul style="list-style-type: none"> LGC Fisheries Code Solid Waste Management Act Clean Water Act Supreme Court Jurisprudence on Manila Bay 	<p>*Implement fisheries code</p> <p>*Policy on reversion, income diversification, marine conservation agreements on mangrove, silviculture,</p> <ul style="list-style-type: none"> Buy-back scheme for fishponds/mangrove reforestation that were foreclosed by the banks Expand the coverage of the seal of good governance Increase/heighten the incentive schemes for good costal management (based on the study conducted by the ICRMP)
			<p>*MPA establishment</p> <p>*Awareness raising by former dynamite fishers against destructive fishing working with LGUs. Needs</p>	<p>* 1989-1994 FAO 166 was strictly implemented to abolish Sangab (giant filter net stationary deployed against the current which caught</p>	<p>*Increase protection and rehabilitated destroyed habitat inside PAs</p> <p>*Affect social change through CEPA together with implementation of</p>

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			improvement to upscale this practice. *Multiple use zoning. Special management zones for scaling up MPAs. Set up more multi use PAs *establishing multiple habitats	everything brought about by the current in Pangil and Sibugay bays)	sustainable livelihood *Ban Sangab which is extremely destructive means of fishing
			*In southern Negros LGU issues special permit for commercial fishers to fish from 10-15 km. Seasonal open access *Inter LGU alliances. Bay wide law enforcement. Not always successful but has potential. *In Panaon - Florida institute of technology partnered with MUST, to propagate aquarium fishes. Instead of harvesting from the wild they get from the cultured fishes. This was stopped. * Implement Ridge to reef resource management		*Strengthen law enforcement *Enforcement of zoning ordinance *Need to strengthen tenurial instrument for communities. *Strengthening coastal enforcement team e.g. In Danahon bank enforcement team plans are linked with the LGU. *encourage LGUs to set up offshore MPAs. Give emphasis on fisheries management aside from MPA protection. *strengthen MPA/Fish Policy to stop live fish trade

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			*Total log ban in upland *Gear selectivity		
	Note: 70% are already delineated by NAMRIA while the remaining 30% are those which are separated/in closed areas/islands Lack of conflict resolution mechanisms re overlapping municipal waters		* Bicol municipalities have their municipal waters delineated e.g. Camsur, Albay		Delineation of municipal waters (No IRR on delineation of big island municipalities. This is a problem for the whole country.)
			*ZSL project - mangrove rehabilitation in Panay and danajon bank *manual on mangrove rehab developed that can be distributed *coral reef rehab in apo island with siliman and ECCF (funder DENR and PAMB) *developing protocol on coral reef recovery and resiliency on climate change through research in partnership with LGUs and CCF in Siquijor funded by LGU Disaster Risk Management		*Replicate good practices *Integration in local government planning platforms i.e., DRR, CLUP, Comprehensive land and water use plans. Implement enhanced CLUP or CLWUP *capacity building for LGUs for climate smarting *continue financial support to implement good practices (BFAR projects) *Popularization of good practices through CEPA

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			Council *PNAP - Phil National Aquasilviculture Program 1. resource habitat rehabilitation of mangroves 2. aquasilviculture project 3. community-based multi-species hatchery project (hatchery of gravid blue-swimming crab or "pag-pag" method) *reversion of abandoned and underutilized fishponds into mangrove rehabilitation areas in Panay		
			Database keeping overtime to monitor coral bleaching (e.g. early 2001 to present for Cebu and Siquijor, Bohol)		
			Creation of national wildlife committee		
	Permitting system -cheap permit fees -no limit		Permitting system -regulation of access, entry, etc		
	Planning Practices		Planning Practices		

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	-no available data Implementation -political influences -no data and validation -not science based		-well crafted and implemented plans		
Inland / wetlands (lakes, rivers, marsh)	<ul style="list-style-type: none"> Setback zone is not enforced/implemented 	<ul style="list-style-type: none"> LGC specifically on building permits Lina Law re informal settlers 	<ul style="list-style-type: none"> *Collective decision to stop reclamation (e.g. Bohol) *Valuation studies on quarrying and reclamation * Apo island has a policy requiring each household to have their toilets. • Resettlement of informal settlers are being implemented by multi-agency taskforce (i.e. MMDA, NHA, DPWH, LGU) 	<ul style="list-style-type: none"> • 10m & 3m easement 	<ul style="list-style-type: none"> *Conduct studies on impacts of reclamation *strengthen the implementation EIA system *Engage various stakeholders *Replicate Cost benefit analysis/valuation studies
			<ul style="list-style-type: none"> • Enforcement of Watershed Management Programs (i.e. reforestation) <p>Note: Successful plans are implemented at the Angat Watershed, Ipo Watershed and Lamesa Dam)</p>		Pass the Alternative Minerals Management Bill

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			<p>*Mindanao River Basin Management Plan is ready for implementation that covers Bukidnon, Maguindanao and Cotabato City under RBCO of DENR.</p> <p>*Upland Rice Development Program to address food security using traditional varieties usually through organic farming. For lowland rice, hybrid seeds, certified seeds are used.</p>		
			<p>Fish cages along the waterways were transferred to coves. Reduction by 50% (5 ha) to reduce sediment transport to intake turbine.</p>		<p>*Proper zoning for fish cages and pens should only be in viable fish-cage areas</p> <p>*Harmonize relevant environmental laws/policies (i.e. NIPAS, IPRA, local and cultural policies)</p>
			<p>*Ban on use plastics. Some municipalities/cities schedule ban on specific days</p> <p>*recycling of used fishernets (project networks) e.g. in</p>		<p>*Replicate good practices in other sites</p> <p>*Conduct CEPA activities i.e. earth day, coastal clean up</p> <p>*strengthening of Implementation of MO on SRF.</p>

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			<p>Danajon, Bantayan, Bais and Tanjay, Negros Oriental.</p> <ul style="list-style-type: none"> *Compliance of LGUs to environmental audit requirement (similar to ISO) *Community should be part of cleanup activities and not only government agencies *Limit settlements in coastal areas * port waste collection - Shore Reception Facility - collection of garbage from the vessels *forerunner of zero waste management in Linamon Lanao Del Norte. They were able to sustain it. *DEPED - zero waste management of DepEd Region 10, banning of use of plastics in schools in region 10 , 3Rs (reduce, reuse, recycle), coastal cleanup *IEC in Xavier U. National Service Training Program 		<ul style="list-style-type: none"> *integration of advocacy on solid waste mgt in DEPED curriculum *continue and sustain the good practices *DEPED - implementation of orders from central office on solid waste management *Junk shops - increase awareness of junk shops in handling toxic and hazardous wastes

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			(NSTP) class taught marine conservation then brought to coastal elementary schools for NSTP students to teach the students in the coastal elementary schools. *Lanao Aquatic and Marine Fisheries Center for Community Development Incorporated (LAFCCOD) - education on solid waste, coastal cleanup *junk shops recycling solid wastes *KGMC - program to exchange one sack of garbage with one raffle ticket		
			<ul style="list-style-type: none"> - Adopt an estero - Provision of easement - Water effluence (34/35) 	Replace heavy metals/chemicals used to process minerals i.e., Less harmful heavy metals such as cyanidization rather than mercury in gold processing	

ENDANGERED AND THREATENED SPECIES	Policies and policy factors that contribute to INEFFECTIVE species and ecosystem protection		Policies and policy factors that contribute to EFFECTIVE species and ecosystem protection		Recommendations
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SECTION 2: PROTECTION Endangered & threatened species (a) Marine (b) Freshwater (c) Terrestrial				Wildlife Act (cuts across all issues)	Install fish ladders in concerned areas
			*Oplan Sagip Ludong; *Inter-agency efforts; *trainings for fisher folks * Banning of use of beach seine all over the lake * igat (angula marmorata) seeding in San Roque reservoir by San Roque Power and BFAR * Preservation/ improvement of declining Igat population in Itogon as igat is part of their culture (ie. Seeding of igat/eel elvers for stock enhancement)	Presence of Red List Committee	*Establish baseline data for native fish and fisheries for all types of ecosystems * Not only for goby: encourage research institutions in propagating/breeding/hatchery production of these vanishing fresh water fish native species
			* Dismantling of fish cages and fish pens in Taal Lake and Pansipit River		* Provide alternative livelihoods or other incentives
			* Monitoring and regulation at the municipal level	* Fisheries Code * Political will * Code of Conduct on	* Monitoring and regulation: cancellation of Foreshore Lease

			<ul style="list-style-type: none"> *Dismantling of fishpens *Zoning *Fish cages along the waterways were transferred to coves *Reduction by 50% (5 ha) to reduce sediment transport to intake turbine *Path foundation *ICRMP - population health and environment - path foundation *community banking *In Siquijor -Sea-Camp catering to youth integrating population and CRM issues * Northern Zamboanga - BFAR project to ease fishing pressure and advocate protection of Lupoy. Beneficiary LGUs formulated fisheries management plan *Ecogov - Illana bay Integrated Coastal Management (ICM) with population program implemented * Commission on Higher Education Project (CHED)- integrated multi trophic aquaculture system using different species at different feeds such that excess feeds 	<p>Aquaculture (mandate of the Fisheries Code)</p>	<p>Agreement (FLAs) of violators, allocation of X number of fishpens in each municipality, including the stocking density for the fishpens</p> <ul style="list-style-type: none"> * Inventory of government and private aquaculture facilities, operators and species raised *Mapping of fish cages *M and E on production, spawning, stocking, waste water, fish health etc. *Policy review or guidelines on wild harvest planktons and other flora and fauna * CEPA *Integrate good practices into the existing planning practices. *Replicate and institutionalize and sustain good practices
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			from the top goes to bottom to be consumed by bottom benthic species ex. siganid and sea cucumber *Organic aquaculture in Davao		
			*Filing cases against violators *Designation of Green Courts (cross cutting)	Wildlife Act (RA 9147) Fisheries Code	DFA, BFAR, LGUs, CSOs and Academe should come up with a holistic strategy to address this.
	* Zoos	* Law enforcement * Lack of awareness and education	* Incentives for community reporting on poaching activities specifically for pawikan * Intelligence work/tips from informers * POGI Awards * Destruction of confiscated ivory which is a powerful political message * Wildlife rescue centers * Ex-situ (i.e Zoos) * Wildlife farms (crocodile)	* Cooperation between law enforcement agencies * DAOs on nationally threatened species * Species-specific conservation programs (Phil Eagle, Tamaraw, Cockatoo, Pawikan) - Adopt A Wildlife Species Program	* Fast track resolution on incentives from BIR
		*Fisheries Code *Barangay and municipal ordinances should impose fishing guidelines e.g. prescribed size of nets, closed seasons, etc.	*Seasonal closure for siganids (leyte - during april) *Instilling bans, close and open seasons for catching specific fish species *Integrated Coastal Resources Management Project (ICRMP)	* Fisheries Code	*Promotes sustainable forest protection and reforestation * Improve management effectiveness of PAs * Introduce Alternative (environment friendly) livelihood *Strengthen and replication of good

			<p>component in 6 provinces on enterprise development</p> <ul style="list-style-type: none"> *Fisher folk registration which makes them eligible for insurance and will be prioritized as beneficiaries for programs * LGUs that can complete registration of fisher folk are given incentives 		<p>practices</p> <ul style="list-style-type: none"> *Conduct research on the life history of specific species targeted for management for designing MPAs *Integrated Coastal Management (ICM) - Ridge to reef * Capacity building
		-		<ul style="list-style-type: none"> * NISSAP * PBSAP 	<ul style="list-style-type: none"> * strengthen policy on IAS
			<ul style="list-style-type: none"> *Directed research results that can explain phenomena related to Climate Change and fisheries and adaptive measures Use of science based research 		<ul style="list-style-type: none"> * Research in monitoring important fisheries ie. Sardines, anchovies, tuna, pelagic, demersal, siganid may be affected by temperature, small coral reef fishes may be affected * Include section on species in National Climate Change Action Plan
	Critical Habitat	Wildlife Act	Critical Habitat -declaration of LGUs of critical habitat		
Forests		Lack of manpower in DENR regional offices	<ul style="list-style-type: none"> *Controlled burning as a cultural practice in CAR for instance, particularly for grazing areas (e.g. Zambales and pasture areas) * Communities 	CBFM NIPAS	<ul style="list-style-type: none"> *Strict implementation of forest protection laws * Maintain and increase forest stand to sequester carbon *Engage other stakeholders (eg.

			established firebreaks (e.g. Kitanglad)		ancestral domain holders); Barangay forest protection teams (anti-logging, poaching, resource abuse)s *Establish firebreaks *CEPA *Add volunteer community forest ranger * Include in Disaster Risk Reduction Management plans of LGUs
		<ul style="list-style-type: none"> * Local zoning laws are not strictly enforced * No strategic zoning process * Biodiversity is not integrated into zoning * Preparation of CLUPs is only for compliance 	<ul style="list-style-type: none"> *Requiring the creation of fire breaks/fire lines (e.g. Coffee and Maguey plantations planted in periphery of Benguet pine plantation in Ambuklao) * Community Based Forest Management Agreement (CBFMA)/Protected Area Community Based Resource Management Agreement (PACBRMA) - Central Cebu, Alcoy. All PAs have this for POs/qualified tenured migrants within forestlands/PAs * Livelihood provision to resettled families and family receives a monthly stipend as a forest warden and is solely 	* HLURB guidelines on BD mainstreaming	<ul style="list-style-type: none"> *Enactment of National Land Use Bill * Capacity building of POs (accounting, financial management, proposal preparation, environment); sustaining support for PO; DENR to present to LGU the existing issues *Fruit crops, agroforestry for identified BD areas

			<p>responsible for restoring the area (started in 2004 thru Cebu BD Conservation Foundation, Inc. (CBCF) from a Haribon grant). There is an annual allocation from the Dalaguete LGU</p> <ul style="list-style-type: none"> * Plant Welfare Act * PAMB (i.e. Mt. Kitanglad) initiated a resolution urging the city SP to pass a resolution banning the sale of land rights within buffer zone and adjacent areas * Indigenous Community Conserved Area (ICCAs), Proposed Integrated Ecosystem Management approaches 		
			<ul style="list-style-type: none"> *Deployment of additional forest guards e.g. Aurora Memorial National Park. 		Improved implementation of ENR policies (use agreements) in collaboration with LGUs
			<ul style="list-style-type: none"> * Adopt a Forest of Chamber of Mines (reforestation of mined out areas) 	<ul style="list-style-type: none"> * Formation of multi-sectoral forest management council * Executive Order 26 (National Greening Program) * EO 23 (Moratorium on Cutting Forest Trees) 	
				<ul style="list-style-type: none"> * Executive Order 79 	

				(Policies & Guidelines to ensure Environmental Protection and Responsible Mining in the Utilization of Mineral Resources)	
	Absence of green labelling for raw materials extracted from the forest for utilization/livelihood		Value chain analysis involving all line agencies		*Establishment of plantations in private and public lands * Establish green labelling system for forest products
	Upland deforestation causing downstream sedimentation (e.g. Cagayan, Zambales, Danajon bank inner reef Talibon, Getafe)		Enforcement on dynamite fishing at municipal level		
			Tenorial instruments	CBFM IFMA PACBARMA	

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Forests	Non-existence of fire breaks and community based alarm system	Insufficient scientific basis (ecological succession of a natural forest was not considered) in the crafting of policy ; Limited consultation to stakeholders prior to issuance	* EO 23 - Moratorium on logging * Minimized cases of illegal logging --- (e.g. Decrease incidence in illegal logging hotspots -- - from 51 to 11) Soil conservation practice SALT Agricultural Technology		
	* Potential tree farm holders are discourage to establish commercial tree plantations	Absence of supporting policy instrument to clarify harvesting procedures between naturally grown and privately-owned plantation (ex. EDC experience shows that vague policies (e.g. "Tree for Food Program") on tree harvesting lead to more unsustainable practices)	Commercial plantation of cash crops in the production forest	Forest Land Use Plan	
	Ineffective system for confiscation and conveyances of illegally harvested logs	Lack of policy guidelines on disposition of confiscated logs and conveyances			Speed-up creation of more "green courts"
Chainsaw Act	No data base of apprehended cases and registered chainsaw				Establish data basing and monitoring mechanism

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					Forest Certification - Ensures that there will be a labelling procedure of the forest product
CBFM			Communities are involved in the protection of forests		Strict monitoring of CBFM rights holder
			Provide livelihood to CBFM holders	Poverty alleviation	M&E Framework
Eco-tourism (DAO)			* Care for biodiversity and maintain ecological balance * Diverts communities towards sustainable utilization of their forests		Identify Mining areas with good practices to showcase tourism
	Most eco-tourism destination are not sustainably packaged	Limited information dissemination on how to sustainably develop sites for eco-tourism	Livelihood opportunities are created for community Establishment of ecotourism areas		More IEC
					Need to clearly define sharing of revenue generation for non-PA
				Soft-infra policies - minimal development	Capacitate local Tourism officers

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	Absence of guidelines to implement PPP in eco-tourism sites		Private sectors are initiating eco-tourism projects with the LGUs	Technical support of DENR to LGUs, POs etc.	Development of guidelines on PPP
Watershed Management			Integrating Integrated Environment Management approach	* 18 major river basins master plan already developed ; others on-going * convergence of activities being implemented by different NGAs and other stakeholders to avoid overlaps	Payment for Environmental Services (PES) mechanism
					* LGU can enact ordinances for the protection of watershed * Provincial administrative boundary to harmonize with the delineation of watershed boundaries
	* Overlapping functions of WMC, Water Quality Management (WQM) Board, and PAMB * Conflicting and overlapping tenurial instruments within the watershed		Creation of Watershed Management Council		

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	Vague implementation of policy incentives for private sector to continue initiatives on forest protection Lack of training, incentives on deputation	No policy on how to off- set initiatives of private sector	Enhanced forest protection Policies on Deputation of different individuals and entities on forest protection		Review current policy incentives for private sector involve in forest protection and enforce the same
	Accidents, casualties, and exposure to hazards of deputized individuals during their forest protection patrols	Lack of mechanism to ensure security and safety of deputized individuals and entities on forest protection			
Co-management of Forests	Vague delineation of mandate and area coverage for forest protection between PNOC (as government entity) vis- a-vis EDC (recently privatized) within geothermal reservation	Moratorium on co- management with LGUs	Private sector forest protection program Co-management of Forests		
	Devolution of forest protection functions to LGUs				
Forest Land Use Planning			Will now be able to zone production and protection forests	Forest Land Use Planning (FLUP)	Opportunities for complementation to CLUP
Caves & cave systems	* LGUs use caves without ecosystem assessment (e.g. Sagada) * Promotion of	Cave Management Act	Implementation of guidelines on caves classification.	Cave Management Act	

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	<ul style="list-style-type: none"> unassessed caves for tourism * Lack of carrying capacity studies * Inappropriate lighting aides inside caves 				

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Government and co-managed protected areas	<ul style="list-style-type: none"> - Poor protection and management of PAs leading to illegal activities e.g. logging for good lumber and round timber, gold panning, unregulated wildlife gathering (flora), wildlife hunting (fauna), rattan overharvesting, improper bird's nest harvesting and almaciga overharvesting - mangrove cutting and tanbarking - poison based river fishing - wildlife gathering (i.e 	<ul style="list-style-type: none"> - Lack of capacity - lack of budget allocation for implementation of environmental laws -weak enforcement of laws and light penalties for the violators - ineffective implementation of Land Reform Law -Political Consideration -NIPAS 	<ul style="list-style-type: none"> *Bantay Gubat volunteers (but others are Bantay Salakay) *Installation of biodiversity monitoring system in Mt. Kitanglad. Initiated by Nordeco and now being continued by PA staff and KGV *Establishment of Critical Habitats 	<ul style="list-style-type: none"> - Wildlife Act 	<ul style="list-style-type: none"> *Improve management effectiveness of PAs *B+WISER improvements, Strengthen IEC to really get them on board the project. *Capacitate PAMB

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	sharks, shells, marine turtles, aquarium fish - Suspension of the Policy on Co-management of forests - Absence of the National Land and Water Use Policy - NOT science based establishment of PAs - Bureaucratic process to establish a PA				
		* Low Taxes and penalties imposed on environmental damages * Ecosystem services and long term economic returns are inadequately considered	- Convergence mechanisms and partnerships with CSOs, LGUs and other stakeholders		
	no uniform methodology in resource assessment, thus, data is incomparable		Conduct of resource assessments		
	LGU managed - not science based (MPA size and resources in the site) - arbitrary maps; not properly delineated/table mapping - no LGU budget allocation/no investment in	- lack of capacity in managing the MPAs	- MPA networking - Unified fishery ordinance	Local government code (LGC)	

PROTECTED AREAS SECTION 2: PROTECTION	Policies and policy factors that contribute to INEFFECTIVE species and ecosystem protection		Policies and policy factors that contribute to EFFECTIVE species and ecosystem protection		RECOMMENDATIONS
	<i>Ineffective</i> system- and site-level protection practices	Contributing policies and policy factors	<i>Effective</i> system-level and site-level protection practices	Contributing policies and policy factors	
	protecting or implementing MPA plans <ul style="list-style-type: none"> - no local/genuine stakeholder; no local buy-in; uninformed stakeholders - no monitoring and evaluation - no resource mobilization - lack of/no enforcement - unsustained pilots <ol style="list-style-type: none"> 1. National Managed MPAs under the NIPAS <ul style="list-style-type: none"> - Conflict with LGU and National Agencies - Overlapping management regime - Zoning practices (i.e. multiple zones for fisherfolk, lack of alternative), - Management plans that are not science based - Identification/participation in the PAMB - Lack of budget - No business planning/lack of financing 2. Community Managed (Ancestral areas, CBFM areas) <ul style="list-style-type: none"> - IP agendas are not 				

PROTECTED AREAS SECTION 2: PROTECTION	Policies and policy factors that contribute to INEFFECTIVE species and ecosystem protection		Policies and policy factors that contribute to EFFECTIVE species and ecosystem protection		RECOMMENDATIONS
	<i>Ineffective</i> system- and site-level protection practices	Contributing policies and policy factors	<i>Effective</i> system-level and site-level protection practices	Contributing policies and policy factors	
	linked to LGUs - Partner selection - Lack of capacity and lack of enforcement - Conversion from abandoned fishponds to settlements				
		- Poverty	* IEC on negative effects of charcoal making * Use Planning Standards for tourism related infrastructures. * IP's assisted in planting Abaca in open areas. IP Bantay Gubat.		* Provide livelihood project, NGP, vermi culture, bio intensive gardens, fund sourcing for livelihood projects * Create design guidelines for PA's and tourism area development. Review possible information sources for the Standards. Strong emphasis of strong baseline data for designing the guidelines. * Specify Areas for Production. Barangay and Municipal Intervention. Alternative Livelihood for IP's. Regulate Charcoal Making.

PROTECTED AREAS SECTION 2: PROTECTION	Policies and policy factors that contribute to INEFFECTIVE species and ecosystem protection		Policies and policy factors that contribute to EFFECTIVE species and ecosystem protection		RECOMMENDATIONS
	<i>Ineffective</i> system- and site-level protection practices	Contributing policies and policy factors	<i>Effective</i> system-level and site-level protection practices	Contributing policies and policy factors	
			Seedling production and maintenance for NGP		
	* Lack of incentives for the community & relevant watershed managers where the headwaters are located. * Watersheds are not valued for their watershed functions compared to investment to water system Community may not have the capacity to negotiate PES	* Lack of policy * Need to protect communal/individual property rights	PES of water cooperative (for protection, restoration, etc)		* PA rewards & recognition system
			Log ban which protects forests on one side but causes unemployment of locals on the other side (e.g. Cordillera woodcarvers)	*EO 23 enforcement. CARAGA wood processing plants from natural and planted species.	Oplan Likas Lakas Lunas to come up with a good alternative livelihood source.
	* Implementation of the maximum sustainable yield provision in RA 8550 has not been implemented		Vertical farming using high yielding varieties without expanding areas; tire gardens; delineation and demarcation for enacted Pas		Need for sustainable limits
					*Facilitate boundary delineation and demarcation of PAs * Cancel CLOAs or free patents within PAs and

PROTECTED AREAS SECTION 2: PROTECTION	Policies and policy factors that contribute to INEFFECTIVE species and ecosystem protection		Policies and policy factors that contribute to EFFECTIVE species and ecosystem protection		RECOMMENDATIONS
	<i>Ineffective</i> system- and site- level protection practices	Contributing policies and policy factors	<i>Effective</i> system-level and site-level protection practices	Contributing policies and policy factors	
					revert these into timberland/public forest
Community protected areas and other conserved areas			Harmonization of mining and IPRA laws (e.g. CAR RDC)		

ANNEX D

AGROBIODIVERSITY SECTION 3: RESTORATION	Policies and policy factors that contribute to INEFFECTIVE species and ecosystem restoration		Policies and policy factors that contribute to EFFECTIVE species and ecosystem restoration		RECOMMENDATIONS
	<i>Ineffective</i> restoration practices	Contributing policies and policy factors	<i>Effective</i> restoration practices	Contributing policies and policy factors	
Agrobiodiversity			Adoption by Unifruitti of sustainable agricultural practices under the certification system Bukidnon municipalities - e.g. Malaybalay and Valencia has passed resolution mandating a stop to the expansion of these areas (No expansion policy)		
			Reversion of abandoned unproductive underutilized Fishponds Reintroduction of traditional varieties in calamity stricken areas	Organic Agriculture Act Forestry Code (PD 705)	Fast track the approval of the draft DA-BFAR Joint Administrative Order on AUU

COASTAL, MARINE, WETLANDS SECTION 3: RESTORATION	Policies and policy factors that promote INEFFECTIVE species and ecosystem restoration		Policies and policy factors that promote EFFECTIVE species and ecosystem restoration		RECOMMENDATIONS
	<i>Ineffective</i> restoration practices	Contributing policies and policy factors	<i>Effective</i> restoration practices	Contributing policies and policy factors	
Coastal & marine (coral reefs, mangroves, seagrass)			<ul style="list-style-type: none"> • coral farming/gardening • MPA establishment 	<ul style="list-style-type: none"> • Fisheries Code • Wildlife Act for Critical Habitat • NIPAS 	
Inland / wetlands (lakes, rivers, marsh)		<ul style="list-style-type: none"> • Policy on high value crops 	<ul style="list-style-type: none"> • Local management movements leading to restoration of soils and prevention of siltation (i.e. local initiatives of LGUs to develop their watersheds) 	<ul style="list-style-type: none"> • Local watershed management • LGC 	
		<ul style="list-style-type: none"> • Biodiversity • AFMA • Fisheries Code 	<ul style="list-style-type: none"> • Reduction of aquaculture 	<ul style="list-style-type: none"> • RA 8550; • carrying capacity 	
				<ul style="list-style-type: none"> • Solid Waste Management Program 	
				<ul style="list-style-type: none"> • Clean Water Act 	
			Social Networks (e.g. Allah Valley Alliance for Land Development (AVLDA) established to address identified concerns		

ENDANGERED AND THREATENED SPECIES SECTION 3: RESTORATION	Policies and policy factors that promote INEFFECTIVE species and ecosystem restoration		Policies and policy factors that promote EFFECTIVE species and ecosystem restoration		RECOMMENDATIONS
	<i>Ineffective</i> restoration practices	Contributing policies and policy factors	<i>Effective</i> restoration practices	Contributing policies and policy factors	
(d) Marine	* Policies (Municipal Fishery Ordinance; no commercial fishers within 15 kms.; mayor owns trawls: Quarrying (Governors owns mining/quarrying company)) * political influence in enforcing policies		color coding of fishing boats within the Municipalities of Bato, Balatan and Bula of Camarines Sur ;	Local Ordinances	
		* Monitoring capability of EMB			* Support structure (water treatment, technology, use of chemicals) for small scale mining
			Coral reef rehabilitation	*Sustainable Coral Reef Ecosystems Management (SCREMP) * Coral Triangle Initiative National Plan of Action for the Coral Triangle Initiative on Coral (CTI-NPOA)	
			Mangrove rehabilitation by both government and private sector		
(e) Freshwater				*NIPAS	
(f) Terrestrial				NIPAS	

FORESTS & CAVES SECTION 3: restoration	Policies and policy factors that contribute to INEFFECTIVE species and ecosystem restoration		Policies and policy factors that contribute to EFFECTIVE species and ecosystem restoration		RECOMMENDATIONS
	<i>Ineffective system- and site-level restoration practices</i>	Contributing policies and policy factors	<i>Effective system-level and site-level restoration practices</i>	Contributing policies and policy factors	
Private Reforestation Programs (EDC-Binhi, Adopt a Forest of Mining Companies)	Rehabilitation is not science based resulting to Low survival rate of indigenous species	* Lack of standards and protocols to ensure high survival of indigenous species * Limited local and national researches on the use of indigenous species as planting material for reforesting different forest types and formation	* Rehabilitation of mined out sites * Use of native species and exotic species (as nurse trees e.g. Acacia auriculiformis)		Research on indigenous species
			Source of livelihood for the community thus strengthens the social fence of our forest		
			Stratification of forest species for reforestation (multi-storey) that leads to * Recruitment of wildlife species * Recruitment of regenerates with endemic species Close canopy gaps after 10-20 years (accelerated forest succession)		
National Reforestation Program	Limited science-based preparation of seedling materials, and appropriate planting procedures are not adopted in the field		Source of livelihood for the community thus strengthens the social fence of our forest		Research on indigenous species
			Further support of DBM to NGP (Php 6.2B)		
	Use of indigenous species but are monoculture	Lack of study for possible adoption and implementation of Accelerated Climax Pioneer			

		Species (ACPS) strategy			
	Most restoration strategies are enrichment planting and reforestation which poses high mortality	Lack of study for possible implementation/adoption of other strategies to restore degraded forest such as Assisted Natural Regeneration (ANR), etc.			
	Lack of technical guidance from Provincial Environment and Natural Resources Office (PENRO) and City Environment & Natural Resource Office (CENRO) on science-based reforestation procedures				Increase budget for extension works of the CENRO and PENRO that include refresher trainings
	Minimal funding for maintenance and protection of reforestation projects				
Rainforestation of NGOs and SUCs	Limited dissemination of their experiences that could have improved the system of reforestation projects				Promote the use of endemic and native species
			Seed technology (DAO 2010-11)		

PROTECTED AREAS SECTION 3: RESTORATION	Policies and policy factors that promote INEFFECTIVE species and ecosystem restoration		Policies and policy factors that promote EFFECTIVE species and ecosystem restoration		RECOMMENDATIONS
	<i>Ineffective</i> restoration practices	Contributing policies and policy factors	<i>Effective</i> restoration practices	Contributing policies and policy factors	
On government lands		- ineffective implementation of Land Reform Law	Establishment of social networking to address identified concern (e.g. Allah Valley Alliance for Land Development (AVLDA) established to address identified concerns)	PP 1747 declaring Carac-an river, Buyaan River, Alamyo River, Panikyan, and Sipangpang Waterfalls as critical watershed areas	
			Implementation of EIS, ECC, Progressive rehabilitation plan, Final Mine Rehabilitation Plan implemented by Tribal Mining Corporation (TMC) in region 12; Creation of mine rehabilitation fund committee and multipartite monitoring team in TMC		
	Overlapping of biodiversity conservation areas with mining tenements and with other incompatible uses.		protection of ecosystems services and participation of IPs (establishment of new conservation areas; Mt. Kalatungan in Bukidnon - in terms of capacity - leaderships of IPs; willingness of IP to protect their sacred areas; documentation of resources by IPs; with recognition of LGU ;		
			Deployment of local volunteers particularly the Ips in the protection of Mt. Kalatungan and Mt. Kitanglad. They do forest patrol along perimeter of Pas.		
	Promotion of exotic species	Policy on reforestation			

PROTECTED AREAS SECTION 3: RESTORATION	Policies and policy factors that promote INEFFECTIVE species and ecosystem restoration		Policies and policy factors that promote EFFECTIVE species and ecosystem restoration		RECOMMENDATIONS
	<i>Ineffective</i> restoration practices	Contributing policies and policy factors	<i>Effective</i> restoration practices	Contributing policies and policy factors	
	& monoculture for reforestation				
			Implemented closed season for sardines in Zamboanga		
On private lands			IP community in Esperanza, Agusan del Sur; Bayugan City, Sibagat, Prosperida, San Luis, Talacogon used their customary law to allow researches in the area (the community is accredited by the NCIP)	- Enforcement of existing laws	
On community lands			282 ha MPA in Pilar, Cebu; rainforestation demo farm (11 ha) [for conservation not income generation];		

ANNEX E

SECTION 4: ACCESS AND BENEFITS SHARING (ABS)	Policies and policy factors that promote INEFFECTIVE ABS practices		Policies and policy factors that promote EFFECTIVE ABS practices		RECOMMENDATIONS
	<i>Ineffective</i> ABS practices	Contributing policies and policy factors	<i>Effective</i> ABS practices	Contributing policies and policy factors	
	Lack of awareness of resource custodians on ABS rules	Lack on information dissemination activities about ABS	Permitting System	PCSD-DENR -DA JAO no. 1 s. 2005 International Treaty on Plant Genetic Resources for Food and Agriculture Nagoya Protocol CBD	Assess effectiveness of PCSD-DENR -DA JAO no. 1 s. 2005
	Conflict between NIPAS act and IPRA as regards the refusal of indigenous communities to allow biodiversity inventories in Cabangahan, Cantilan, Surigao del Sur		IP community in Esperanza, Agusan del Sur; Bayugan City, Sibagat, Prosperida, San Luis, Talacogon used their customary law to allow researches in the area (the community is accredited by the NCIP)	Trade related aspects of Intellectual Property ²⁶¹	
	lack of consolidated reporting due to different formats required by various agencies (CHED, PAWB, etc.)				
					Explore the need for a comprehensive framework for research on biodiversity

²⁶¹ Cuts across other issues as well.

SECTION 4: ACCESS AND BENEFITS SHARING (ABS)	Policies and policy factors that promote INEFFECTIVE ABS practices		Policies and policy factors that promote EFFECTIVE ABS practices		RECOMMENDATIONS
	<i>Ineffective</i> ABS practices	Contributing policies and policy factors	<i>Effective</i> ABS practices	Contributing policies and policy factors	
					Tracking mechanisms should have accountability
					accreditation of researchers in NCIP may also be an option so that those accredited may avail of some fast-tracking in their applications
					there should also be a mechanism for the exchange of data, both public and private
		Trade related aspects of Intellectual Property (cross cutting)		Trade related aspects of Intellectual Property (cross cutting)	

SECTION 4: ACCESS AND BENEFITS SHARING (ABS)	Policies and policy factors that promote INEFFECTIVE ABS practices		Policies and policy factors that promote EFFECTIVE ABS practices		RECOMMENDATIONS
	<i>Ineffective</i> ABS practices	Contributing policies and policy factors	<i>Effective</i> ABS practices	Contributing policies and policy factors	
	<p>Lack of awareness of LGU Cantilan on ABS rules such that no arrangements for benefit sharing were entered into as regards the inventory of flora and fauna in the Isla General</p> <ul style="list-style-type: none"> No clear benefit sharing scheme No inventory and valuation of resources Limited baselining Lack of information and monitoringLack of capacity to negotiate 	<p>No adoption on ABS in existing policies</p>	<ul style="list-style-type: none"> ER 1-94 (Financial Benefits to Host Communities) 	<ul style="list-style-type: none"> Wildlife Act LGU Code IPRA Law <p>*PBSAP *DENR-DA-PCSD-NCIP Joint AO No. 1 (subsumes ABS provisions and supersedes EO 247) * Mining Act (royalties to IPs, excise tax to LGUs) * Revised FPIC guidelines (NCIP AO No. 3 – 2012) which includes ABS * NCIP AO 1-2012 on IKSP * IP Code (RA 8293) * IPRA (RA 8371), * TAMA (RA 8423), * PVP Act (RA 9168), TechTransfer Act (RA 10055); * Cultural Heritage Act (RA10066)</p>	<ul style="list-style-type: none"> Inventory and valuation of resources Benefit sharing formula Knowledge management/ database <p>* Passage of ABS Bill</p>
	<p>Ownership of data esp. those from biodiversity research activities of mining and other companies</p> <ul style="list-style-type: none"> Bureaucratic processes for IPR Patenting of intellectual property Lack of clear monetary value for intellectual properties 				<ul style="list-style-type: none"> There should be a clear mechanism to differentiate the needed process when conducting academic from industrial researches

SECTION 4: Access and Benefits Sharing	Policies and policy factors that contribute to INEFFECTIVE species and ecosystem Access and Benefits Sharing Practices		Policies and policy factors that contribute to EFFECTIVE species and ecosystem Access and Benefits Sharing Practices		RECOMMENDATIONS
	<i>Ineffective system ABS practices</i>	Contributing policies and policy factors	<i>Effective Access and Benefits Sharing practices</i>	Contributing policies and policy factors	
	Benefits are not equitably distributed among IP communities				
	Rampant presence of "Tribal dealers"	Absence policy to address the issue on "Tribal dealers"			
	Process of securing FPIC is long and tedious that discourages developers and projects	Lack of policy to streamline FPIC process			
	Consultation fatigue of some IP communities and the proponent	Lack of policy to streamline FPIC process			
	No mechanism to bring back to communities the benefits from the international and locally patented researches on genetic resources	No law yet on ABS			
	Lack of monitoring on progress of researches. No biodive assessment and database.				
				RA 8550	
	Lack of resources to implement IPRA Law	IPRA Law	Strict implementation of the FPIC Process Legal recognition of ancestral domains	IPRA Law	
	Environmental fees collected by utility companies are not shared with watershed communities		Piloting of the ICCA as strategy towards ABS (i.e. Cagayan de Oro residents provide funds to upland communities in Mt. Kalatungan to protect and restore the forest.)		Transparency mechanism on fees collected (how much, where funds go to. Etc.)

	Cheap permit costs		Permitting system		
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ANNEX F

SECTION 5: OVERALL POLICY ANALYSIS	Factors of the broader policy environment that INHIBIT biodiversity conservation, sustainable use and equitable benefits sharing	Factors of the broader policy environment that PROMOTE biodiversity conservation, sustainable use and equitable benefits sharing	RECOMMENDATIONS
	Policy on crop loans and insurance applied by banks (e.g. Landbank) - farmers cannot avail if they do not plant recommended varieties, which are products of plant breeding, per list of National Seed Industry Council (NSIC). As an alternative, farmers get loans from traders with 15% monthly interest	Policy on promotion of biodiversity friendly agricultural principles and practices Nationally Important Agriculture Heritage System (NIAHS)	Include traditional varieties in the list of varieties qualified for crop loans and crop insurance
	<ul style="list-style-type: none"> • The benefit sharing system is not a proactive one. • Overemphasis on economic growth and production/consumption and not on sustainability. • Lack of sustainability indicators. • Lack of statistical system to improve natural resource accounting. • Focus more on employment generation than wealth creation and distribution 	<ul style="list-style-type: none"> • International commitments • Transparency and availability of information • Higher awareness on biodiversity 	
	Lack of biodiversity inclusive impact assessment of policies plans and programs	International agreements ; multilateral environmental agreements	
	Lack of awareness of decision makers on biodiversity conservation		
	Lack of sharing and dissemination of technology and research breakthroughs		

ANNEX G

Workbook 1 B: Institutional Review (Sections 1, 2 & 3)

Drivers of change	Financial triggers	Who Benefits and How	Who pays the cost	How can my sector help in BD conservation	Actors and institutions likely to contribute to achieve item 5
Energy	tax policies to support easements or promote alternative energy technology	consumers, national government, Local Government Units by hosting energy projects	consumers/users	channel royalties/ government shares in energy production to biodiversity funding reforestation program, participation in ecotourism projects increase incentives for clean/green energy production	DOE, energy companies, host communities
	EPIRA Fit for renewable energy	Community, government, business sectors	national government, tax payers	adherence to EIA	Private institutions, LGUs, field offices, DENR and academe
Transportation and infrastructure					
	road users tax	road users (motorists), general public	road users, public (impact on pollution, increase in impervious surface area, loss of personal mobility, limitation of access across areas)	inclusion of biodiversity conservation on plans (infraworks)	DPWH, DOTC, TRB, ROAD BOARD, LGU
Fisheries (Capture)	Cheap permits/licenses (PhP 2 pesos/ fisher folk) cost to no penalty for overfishing	Fish traders Fishers – fees used in processing the permits and licenses	Future generation	Study, assessment or increase fees	NGOs SUCs
(Aquaculture)	High profit/low cost of production Low importation cost, taxes	Companies, hobbyists	DA, DENR, local stakeholders affected by impact National government	Promote aquasilviculture when appropriate Facilitate consultation to pay for probable content	BFAR DTI

Drivers of change	Financial triggers	Who Benefits and How	Who pays the cost	How can my sector help in BD conservation	Actors and institutions likely to contribute to achieve item 5
	Introduction of non-native species for aquaculture and ornamental industry			and mitigation Reversion of AUU to mangrove areas	
Mining (large scale)	Social Development Management Plan (SDMP) Mandate Fiscal/non fiscal incentives Government share Taxes Royalties / excise tax Mining companies investment related to power plants Infrastructure (housing, schools, hospitals, roads, which are free to the community)	Mining and adjacent communities LGUs Foundations Academe/research institutions Nat'l govt (DENR, MGB, EMB) economy	Mining companies Government (incentives) Communities in case of disasters	Species BD Scoping BD restoration & enhancement during operation Develop programs that focus on species restoration Adopt a forest	Member companies of the chamber of mines Foundations
Mining (small scale)	LGU Permits (should be a must)	Small scale miners Communities government	Small scale miners Future generations	Academe – serve as avenue for open and fair dialogue among sectors Secure permits and register mining act activities	LGU MGB EMB DENR
Water Management and Utilization	Water districts not including costs of water conservation are source Low cost of water (value distribution cost)	Current water users (irrigation, industrial, domestic, energy)	Future generations who will have less stable water supply Present situation: DENR pays/maintains head waters Proposed: water districts contribute	Incorporating BD in maintenance of head waters	Local water district LWUA
Settlements	Population increase = income Profit margins in real	NGAs/LGUS tenured migrant communities Real estate developers	Lower income families NGA LGU Private institutions	Policies, IEC, monitoring, law enforcement Prohibit IS	LGUs NGAs HLURB NHA

Drivers of change	Financial triggers	Who Benefits and How	Who pays the cost	How can my sector help in BD conservation	Actors and institutions likely to contribute to achieve item 5
	<p>estate development – high</p> <p>Expatriate migration (retirement investment)</p> <p>Migration of poverty stricken areas</p> <p>Relocation of Informal Settler Families (ISF)</p> <p>CSR projects on upland community</p>	<p>Trend: lower income families “open up” areas which are the developed by higher income ones/companies</p> <p>once developed, the areas are then sold for profit</p> <p>the lower income families are then forced to leave and look for new areas to “open up”</p> <p>communities / LGU</p>		<p>Strict implementation</p> <p>Mobilizes communities on BD conservation</p>	<p>DILG</p> <p>DSWD</p> <p>DENR</p> <p>DPWH</p>
Wildlife	Funding through IPAF and WMF	General public, local stakeholders, environment	National government, LGUs, private sector, wildlife traders/permits	Policy support and IEC, including enforcement	SUCs LGUs NGOs
	Adopt a wildlife species (AAWS)	BMB LGU and other agencies w/ mandate to conserve endangered species	Private institution adopting/conserving specific species	Restore degraded lands which are habitat of these species	BIR can help a lot if they would provide clear guidelines on how to avail the tax incentive; BMB to assist in lobbying
Forestry and Forest-related activities	Public spending on research (subsidy)	Managers of sectors	National govt	* Resource valuation	DENR, other NGAs, NGOs
	Permits/Licenses	Public DENR Stakeholders	Community Based Forest Management (CBFM), Forest Management Bureau (FMB)	* Development of tracking * Determination of carrying capacity * Habitat preservation	, SUCs, LGUs, Private sectors, Public Officers Ecosystems Research & Development Bureau (ERDB), Consultants, Academe
	CSR budget of private companies	DENR and communities	Integrated Forest Management Agreement (IFMA)/Timber License Agreement (TLA) holders Private institutions	Promote and invest on science based method for restoring our degraded lands and partnering of	Academe Beneficiaries LGUs POs DENR

Drivers of change	Financial triggers	Who Benefits and How	Who pays the cost	How can my sector help in BD conservation	Actors and institutions likely to contribute to achieve item 5
			Local communities	communities	BMB BIR
	Low penalties imposed in violations on collection of wildlife Volunteer reforestation programs of private ministries Low rent of forests by IFMA/TLA holders	Traders Pet shops Collectors Local communities, IPs, consumers	Local communities – pest infestation Local businesses National/local government	Increase rent fees and penalties	Traders Permittees
Industrial and Manufacturing and Processing	Rental on forest lands imposed by DENR and DOE fees	National treasury	Energy development companies	Include fees	Communities, LGU, DENR Academe CENRO PENRO etc
	Air quality management fund				
	Environmental regulatory fund				
	Low waste collection and disposal fees	Economic zones	Local businesses Government community	Include fees	Business inside the economic zones
Tourism and Recreation	Discharge permit Permit to operate and other necessary programs	National govt LGUs communities	Industrial manufacturers		DENR EMB LGU
	Fines/penalties for violations				
	Multiple investment incentives				
Tourism and Recreation	SAPA/ User fees/ TIEZA Fees / LGU Fees	Local and Foreign Tourists Local communities	Local and foreign tourists, national government Private sector	BD friendly infrastructure	DENR LGUs DOT People's Organizations Academe

Drivers of change	Financial triggers	Who Benefits and How	Who pays the cost	How can my sector help in BD conservation	Actors and institutions likely to contribute to achieve item 5
					DTI Tourists
	Loans/ grants for the development of ecotourism sites	LGUs, local community, local entrepreneur	Donor agencies	Approve only the BD friendly ecotourism plans with continuous monitoring and assessment Development of BD friendly tourism branding and marketing	DOT, EMB, BMB
	Rental property taxes, entrance fees	No clear distribution of "who benefits" since collected fees goes to national treasury	Private institutions	We ensure minimal development on ecotourism sites	LGU Guidelines from BMB DOT
Agriculture	Low importation taxes Introduction of non-native ornamental plants	Ornamental industries, landscapes, hobbyist	Ornamental industry	Remove subsidies (non-traditional varieties) and/or include traditional varieties in seed subsidies Research and development IEC for probable impacts	DA BPI Ornamental industry DTI
	Seed subsidies	Farmer Seed producer	Some LGUs, DA (other programs)	Provide support in the establishment of seed production area Provide subsidies for traditional varieties	DA LGUs Farmers Association Community based organization
	Agri-industrialization			Community seed banking Organic farming	AFMA

