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Wealth Accounting and the Valuation of Ecosystem Services (WAVES)

Philippines Country Report 2016

WAVES

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Wealth Accounting and the
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WAVES – Global Partnership for Wealth Accounting and Valuation of Ecosystem Services

Wealth Accounting and Valuation of Ecosystem Services (WAVES) is a global partnership led by the World Bank that aims to promote sustainable development by mainstreaming natural capital in development planning and national economic accounting systems, based on the System of Environmental-Economic Accounting (SEEA). The WAVES global partnership (www.wavespartnership.org) brings together a broad coalition of governments, UN agencies, nongovernment organizations and academics for this purpose. WAVES core implementing countries include developing countries—Botswana, Colombia, Costa Rica, Guatemala, Indonesia, Madagascar, the Philippines and Rwanda—all working to establish natural capital accounts. WAVES also partners with UN agencies—UNEP, UNDP, and the UN Statistical Commission—that are helping to implement natural capital accounting. WAVES is funded by a multi-donor trust fund and is overseen by a steering committee. WAVES donors include—Denmark, the European Commission, France, Germany, Japan, The Netherlands, Norway, Switzerland, and the United Kingdom.

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1| Global WAVES and Philippines WAVES (Phil-WAVES)

Wealth Accounting and the Valuation of Ecosystem Services (WAVES) is a global partnership led by the World Bank that aims to promote sustainable development by mainstreaming natural capital in development planning and national economic accounting systems, based on the United Nation's System of Environmental-Economic Accounting 2012 (UN-SEEA 2012). The WAVES global partnership (www.wavespartnership.org) brings together a broad coalition of governments, UN agencies, non-government organizations (NGO), and academics for this purpose.

WAVES core implementing countries include developing countries—Botswana, Colombia, Costa Rica, Guatemala, Indonesia, Madagascar, the Philippines and Rwanda—all working to establish natural capital accounts. WAVES also partners with UN agencies—United Nations Environment Programme (UNEP), United Nations Development Programme (UNDP), and United Nations Statistical Commission (UNSC)—that are helping to implement natural capital accounting (NCA). WAVES is funded by a multi-donor trust fund (MDTF) and is overseen by a steering committee. WAVES donors include Denmark, the European Commission, France, Germany, Japan, The Netherlands, Norway, Switzerland, and the United Kingdom.

Past attempts to institutionalize NCA—both globally and in the Philippines—have not been fully institutionalized due to the lack of a clear policy link, disagreements on methodology, lack of global leadership, and limited capacity and resources. The WAVES global partnership program tries to tackle these issues by helping countries adopt and implement natural capital accounts that are relevant for their policy priorities and using a universally accepted standard—SEEA.

The Philippines was identified as one of the pilot countries for WAVES for several reasons. There is a high government demand for indicators, tools, and methodologies that will help determine the sustainable use of natural resources and inform development planning and policy analysis. Also, a more sustainable use of natural resources potentially could have a large impact on the poor and thus economic growth, as the incidence of poverty is particularly high among natural resource-dependent sectors. Finally, the government of the Philippines has a high latent capacity in NCA from previous initiatives,[1] while academic and private organizations have the necessary skills for ecosystem accounting.

2| Macroeconomic and Environmental Context in the Philippines

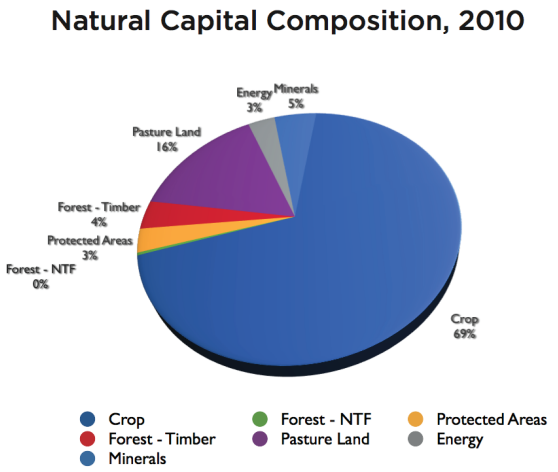
The implementation of NCA in the Philippines is well timed. The Philippine Government emphasizes governance reforms that include transparent and science-based decision making, while pursuing sustainable, inclusive, and

[1] The two major Philippine initiatives in environmental accounting were the Environmental and Natural Resources Accounting Project (ENRAP) and the Philippine Economic-Environmental and Natural Resources Accounting (PEENRA) Project. Both started in the 1990s and continued to about 2000. ENRAP was a led by the Department of Environment and Natural Resources, funded by USAID, and adopted the Henry Peskin approach to environmental accounting, focusing on data use for public policy. PEENRA, which started later, was implemented by the National Statistical Coordination Board, which used the SEEA framework for environmental accounting, with the UN providing financial and technical support.

resilient growth. Approaches such as NCA, market-based instruments, environmental valuation, and payments for ecosystem services—which are mentioned in the 2011–2016 Philippine Development Plan (PDP) and the National Climate Change Action Plan (NCCAP)—would be facilitated by the regular production of SEEA modules.

Figure 1. Wealth of the Philippines ($ per capita, 2010 estimates)

$ per capita (2010 estimates)	
Total Wealth	**34,172**
Produced Capital	5,049
Natural Capital	6,337
Intangible Capital	23,090
Net Foreign Assets	(305)



Source: World Bank interim estimates, 2014.

The results of the policy analysis and recommendations from the Phil-WAVES accounts will provide solid understanding of how the government can address policy issues like effective management of competing and overlapping claims on the country's natural resources. Moreover, these results can inform the government strategies and programs that could be considered in the development of the successor Philippine Development Plan (PDP).

Initial estimates suggest that natural capital accounts for about 15 percent of the Philippines' total wealth in 2010 (World Bank, forthcoming).[2] As indicated in Figure 1, agricultural land accounts for the highest proportion, followed by pasture land, subsoil assets, and minerals.

The 2011-2016 PDP Medium Term Plan continues to recognize the importance of natural capital for reaching the objective of inclusive growth. As can be seen in Table 1, agriculture, forestry, and fishing accounted for almost a third of employment in the Philippines in 2015. Nonetheless, the poverty incidence is particularly high for those who source their livelihood from the natural resource-dependent sectors, in particular, poverty incidence for farmers reached 38 percent in 2009 and inched up to 38.3 percent in 2012 (Philippine Statistics Authority; 2012a). Meanwhile, in the case of fisherfolks, poverty incidence is higher at 41.3 percent in 2009. A notable decline, however, was recorded in 2012 as poverty incidence for fishermen fell to 39.2 percent.

Further, as supported by the 2012 poverty data, the poorest provinces have the largest share of rural population (Philippine Statistics Authority 2013), signifying that these provinces that rely

[2]Based on an initial analysis that includes agricultural land (crop land and pasture), forest land (timber and non-timber forest products), protected areas, minerals, and energy.

Table 1. Employment by Sector, 2014

	2015[a]		January 2016	
Employment by Sector	In Thousand Persons	As Percent of Total	In Thousand Persons	As Percent of Total
All Sectors	**38,741**	**100.0%**	**40,047**	**100.0%**
Agriculture	**11,292**	**29.1%**	**10,811**	**27.0%**
Agriculture, Hunting, and Forestry	9,971	25.7**%**	9,506	23.7**%**
Fishing	1,321	3.4**%**	1,305	3.3**%**
Industry	**6,276**	**16.2%**	**6,699**	**16.7%**
Mining and Quarrying	235	0.6%	215	0.5%
Services	**21,173**	**54.7%**	**22,536**	**56.3%**

Source: Philippine Statistics Authority, Labor Force Survey

Note: [a] 2015 annual employment data averages January, April, July and October rounds of LFS and excludes Leyte.

heavily on natural resources fall among the poorest provinces. In contrast, the richest provinces are the most urbanized (Philippine Statistics Authority 2010).[3] With this development, government action is crucial to curb the deterioration of the country's environment and natural resources, which is likely to be exacerbated by strong demographic pressures and the country's natural vulnerability to climate change.

Agriculture: From 2004–2010, the average growth rate of the agricultural sector, including fishery and forestry, was 2.5 percent. However, most recent data indicates that the sector grew slower with an average growth rate of 1.7 percent from 2011-2015. The slower growth in agriculture can be attributed to a series of climate-related disasters, in particular, the largest dent in agricultural production was due to Typhoon Yolanda (Haiyan) in 2013 (Philippine Statistics Authority; 2012b and 2014). As such, the sector's contribution to the gross domestic product (GDP) was reduced to 10.5 percent in 2011-2015 from 12.8 percent average GDP in 2004-2010. In terms employment, the sector accounted for 29.1 percent of total employment in 2015.

Key issues identified in the agricultural sector were vulnerability to climate change and disaster risk, plus the conversion of agricultural land to other uses, declining productivity and competitiveness, and increase in food commodity prices, a stagnant poverty headcount, inadequate support services, and unsustainable resource utilization (National Economic and

[3]The three poorest regions in 2012 (ARMM, Region VIII, and Region XII) had an average poverty incidence of 49 percent (Philippine Statistics Authority; 2013) but an average urbanization level of only 23 percent (2010 data; Philippine Statistics Authority; 2013), while the three richest regions in 2012 (Region III, Region IV-A, and NCR) had an average poverty incidence of 9 percent and average urbanization level of 70 percent.

Development Authority 2011 and 2012). Future increases in agricultural productivity and food security are further hampered by a limited irrigation system—merely 55.6 percent of total irrigable areas were serviced by irrigation in 2013 (Philippine Statistics Authority 2013) — and extensive land degradation, due to expansion of grazing lands, slash-and-burn practices, and deforestation of watershed areas.

Forests: The country's forestland, which officially make up about 53 percent of the country's total land area,[4] are increasingly under pressure. Based on the 2010 Philippine Land Cover by the National Mapping and Resource Information Authority (NAMRIA), the total forest cover of the Philippines is estimated at 6.8402[5] million hectares (22.8% of the total land area of the Philippines). The main drivers of deforestation and forest degradation include gathering of fuel wood for cooking and charcoal making, slash-and-burn practices, upland agricultural cultivation, and illegal logging. The increase in the rural population due to high fertility rates, the dependence on shifting cultivation, and rural poverty have placed further stress on forest resources.

Coastal and marine resources: The Philippines has some of the richest marine biodiversity in the world. Overall, its marine waters hold more than 500 species of stony or scleractinian corals, 12 of which are endemic, in addition to more than 2,724 species of marine fish, about 42 species of mangrove, and 16 species of sea grass (State of the Coral Triangle Report- Philippines 2012). With these abundant fisheries and marine resources, the Philippines' fisheries sector contributes significantly to fisheries output nationally and worldwide. However, the fisheries sector has been facing key development challenges over the years, due to unsustainable use and management of its resources, resulting in an overall decline in fisheries productivity. The unsustainable practices included the loss of critical coastal habitat due to the conversion of mangroves to aquaculture and settlement, timber cutting for fuel and housing materials, and the degradation of coral reefs due to overfishing and destructive practices.

Water supply: Due to rapid population increase, urbanization, and economic growth, the demand for water has also been increasing. New water sources must be identified to address the increasing demand for water by residential, commercial, and industrial users, especially in industrial areas and highly urbanized cities. As a consequence, at least nine major urban centers are experiencing water stress, and per capita water availability in the Philippines is the second lowest among Southeast Asian countries (National Water Resources Board, 2006). In addition, some areas suffer devastating floods during the wet season, while many areas experience water shortages during the dry season. The latter can lead to massive crop failures and water shortages, as experienced after the 1997–1998 ENSO events of temperature variations in the tropical eastern Pacific Ocean (Cruz et al. 2007). Climate change will further aggravate these impacts, with more than 40 percent of the 70 provinces, including metropolitan Manila, predicted to have 20 percent to 40 percent less precipitation during the summer months (Philippine Atmospheric, Geophysical, and Astronomical Services Administration 2011).

[4]This figure includes both classified forestland (50.2 percent) and unclassified forest land (2.5 percent) (Department of Environment and Natural Resources 2012).

[5]6.840 million hectares consist of: open forest, 4.595 million hectares; closed forest, 1.934 million hectares, and mangrove forest, 0.311 million hectares.

Water quality: Since surface water is more abundant than groundwater in the Philippines, ideally most of the potable water should be sourced from surface water. However, only about 36 percent of the river systems and surface water areas are potential sources for drinking water, with the remaining 64 percent unfit for drinking even after complete treatment. Given the low sewage cover—an average of 4 percent in urban areas and 8 percent in metro Manila (National Water Resources Board 2006)—discharge of inadequately treated domestic sewage is a major contributor of pollution of surface waters. Furthermore, aquatic ecosystems are threatened by this poor water quality.

Minerals: The Philippines ranked as fifth mineralized country in the world[6]. About 30 percent (9 million hectares) of the country's total land area have been identified with high mineral potential by the Mines and Geosciences Bureau (MGB)[7]. Notwithstanding, the contribution of mining sector to the GDP between 2011 and 2015, minerals account only an average of 0.7 percent (Mines and Geosciences Bureau; Mining Industry Statistics 10 March 2016). Therefore, questions are frequently raised about the mining industry's benefits to the country which is being measured through payment of various taxes, (i.e., excise taxes and royalties, income taxes) and other non-tax incentives.The Mining Industry Coordinating Council (MICC) has developed the go and no-go zone map for mining activities. Also, reforms in regulations and implementation of mining in the country were instituted to address social and environmental concerns on mining. A proposed bill on the new fiscal regime and revenue arrangement between the government and the mining contractor, benefit sharing for the indigenous peoples and local communities, and the associated environmental and social cost of mining activities has been drafted.

Climate change: The World Risk Report[8] ranked the Philippines as the second most vulnerable country to disaster risk from weather-related extreme events, earthquakes, and sea level rise (Alliance Development Works 2014). Reports showed that significant warming will occur in the Philippines with expected mean temperature rise by 1.5 to 2.6 degree Celsius over the coming 50 years (Second National Communication Report 2014)[9]. In addition, a reduction in rainfall is expected in most parts of the country from March to May and greater rainfall during the monsoon season of June to August, and September to November. Sea-level rise will have further adverse impacts on coastal areas. (http://germanwatch.org/fr/download/13503.pdf)

The Philippines has formulated framework strategies and actions towards climate change adaptation and mitigation espoused in the 2011-2028 National Climate Change Action Plan (NCCAP). Since the Philippines is an insignificant emitter of greenhouse gases, the country puts greater emphasis on adaptation with mitigation co-benefits as the strategy to manage risks and adjust the economic activities to reduce vulnerability[10].

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[6]http://www.denr.gov.ph/index.php/component/content/article/16.html. Last accessed on 26 March 2014.
[7]http://www.mgb.gov.ph/images/links-images/ThePhilippineMineralsIndustryAtAGlance.pdf. Last accessed on 5 May 2016.
[8]This ranking is based on the 2014 WorldRiskIndex, which was developed by the United Nations Institute for Environment (UNU-EHS) in cooperation with the Alliance Development Works. It assesses a country's disaster risk by combining four components: exposure to natural hazards (i.e., earthquakes, storms, floods, droughts, and sea-level rise), susceptibility, coping capacity, and adaptive capacity.
[9]Second National Communications to the UNFCCC, last accessed at http://unfccc.int/resource/docs/natc/phlnc2.pdf, 26 March 2015.
[10]NCCAP. Last accessed at http://adaptationmarketplace.org/data/librarydocuments/NCCAP_TechDoc.pdf on 26 March 2015

Other Sectoral Concerns: During the preparation for WAVES, feasibility studies reviewed the past NCA experience in the Philippines and assessed the current capacity and institutional support for SEEA. In addition, the feasibility of NCA for minerals, soils, land, water, forests, fisheries, and coastal and marine resources was assessed. These efforts were complemented by workshops and meetings with officials from policy, planning, and statistics offices to identify policy priorities.

The feasibility studies and stakeholder consultations concluded that there is a long list of policy issues that could be addressed by WAVES technical assistance (TA) (summarized in Table 2). Out of the long list of potential policy issues, minerals, mangroves, and water resources were prioritized for Phil-WAVES. The main reasons were that these issues (1) urgently needed policy inputs; (2) had the potential to make a big impact on poverty and economic growth; and (3) complemented other initiatives by the World Bank, government of the Philippines, and development partners.

Table 2. Policy Issues for a Long-Term WAVES Program in the Philippines

Sector	Economic & Social Policy Issue	Environmental Concerns
A. Sectors to be Funded by Phil-WAVES (2013–2017)		
Minerals	• Sustaining income from resource rents • Increasing benefits for indigenous peoples& local communities • Allowing mining activities only in the identified go zones	• Mitigating environmental damages • Increasing water-use efficiency • Rehabilitating post-mining • Building credible data & information
Mangroves[11]	• Resolving competing use of mangroves • Increasing tourism benefits for the poor • Effectively& efficiently rehabilitating mangroves	• Reversing degradation & scaling up conservation • Valuing mangrove protection • Valuing sustainable marine-based economy
Cross-cutting issues	• Resolving competing uses through institutional & pricing reforms • Generating employment, income,& local benefits	• Reducing environmental impacts • Reducing vulnerability to climate risk & geo-hazards

(*continued on next page*)

[11] Since the 1st meeting of the Phil-WAVES Steering Committee (PWSC) on 26 July 2013, the mangrove accounts have been agreed upon for consideration. A series of meetings and discussions were started to scope out available data in the development of mangrove accounts. This will help assess the feasibility and utility of developing the accounts in terms of data availability and support from Phil-WAVES partners.

Table 2. Policy Issues for a Long-Term WAVES Program in the Philippines (*continued*)

Sector	Economic & Social Policy Issue	Environmental Concerns
Site case studies on ecosystem accounting	• *Southern Palawan:* competing uses of land & coastal and marine areas; equitable access to ecosystem benefits	• Development of methodology • Mitigation of environmental damage • Increased water-use efficiency • Post-mining rehabilitation • Local benefit sharing • Climate risk
	• *Laguna Lake basin*: water & habitat ecosystem; update of fee on water abstracted for consumption	• Water supply • Pollution • Sedimentation • Other economic values associated with fisheries, recreation, waste assimilation, flood control, health impacts, & habitat
B. Sectors Recommended for Funding by Other Sources		
Agriculture	• Attaining food security amid climate risk • Addressing agricultural land conversion • Increasing productivity & competitiveness	• Scaling up sustainable land management • Increasing water efficiency • Adapting to climate change
Coastal and Fisheries	• Increasing fish catch and benefits among local fishers • Increasing tourism benefits for the poor • Identifying sustainable financing for Marine Protected Areas	• Reversing degradation • Scaling up conservation
Forest	• Resolving competing forest land uses • Developing competitive & sustainable forest industries • Increasing benefits for indigenous peoples& upland communities • Sustainably financing Protected Areas	• Reversing deforestation & scaling up conservation • Protecting downstream water supply • Protecting biodiversity-rich areas • Increasing carbon sequestration
Water	• Resolving competing uses • Water pricing • Financing watershed management • Integrated water resources management	• Reducing pollution • Address flooding & sewerage infrastructure gap • Adapting to climate change
Tourism	• Increasing benefits for the poor & the local economy • Resolving competing ecosystem uses • Increasing competitiveness • Meeting the infrastructure & skills gaps	• Managing environmental impacts • Adapting to climate change
Energy	• Improve balance and efficiency of renewable-nonrenewable energy mix • Improving price of electricity • Reducing health impacts of emissions	• Ensuring responsible geothermal energy in protected areas • Sustaining hydropower • Adapting to climate change

3| Policy Objectives of Phil-WAVES

The objective of the Phil-WAVES TA is to inform development planning and policy analysis on the sustainable use of key natural resources.

Policy Objective 1: Developing macroeconomic indicators that account for natural capital values, to measure the sustainability of economic development

New macroeconomic indicators that integrate natural resource values and are complementary with existing indicators are developed to guide and facilitate monitoring of sustainable development.

The Philippine System of National Accounts (SNA) and macroeconomic indicators make scant reference to natural capital values. In fact, there has not been comprehensive NCA at the national scale during the last decade due to a failure to fully institutionalize the donor-funded NCA initiatives implemented in the 1990s. Yet with growing environmental awareness and concerns, there is now heightened demand from government, NGO, civil society, and the private sector for NCA to aid science-based and evidence-based policy making. A priority activity for WAVES will be to undertake a comprehensive review of the SNA that evaluates the current situation and makes concrete recommendations for its improvement by future integration of natural resource issues.

Progressive inclusion of natural capital values in the SNA, from selected SEEA modules and the development of macroeconomic indicators, will improve the country's ability to monitor the sustainability of its economic development and manage key natural resource-based sectors. For the purposes of WAVES activities, the focus will be on developing new, complementary macroeconomic indicators, including adjusted net savings, adjusted net national income, produced capital, and comprehensive wealth. A progressive approach to development of these macroeconomic indicators will be applied. In the short term, existing preliminary estimates prepared by the World Bank (WB) will be refined and adjusted using available country-specific data. In the medium to long term, the outcomes of the selected SEEA modules will be progressively included to further refine the indicators. Technical activities will be complemented by capacity building, both in the development and maintenance of these indicators, as well as in their use and interpretation.

The proposed WAVES activities in the Philippines related to this policy objective are:

- Technical evaluation of the System of National Accounts and recommendations for improving the integration of natural capital into that system; and
- Continued incremental improvement of macroeconomic indicators (adjusted net savings, adjusted net national income, produced capital& comprehensive wealth) throughout WAVES, including mining sector and mangrove accounts that are generated through other WAVES components. and mangrove accounts that are generated through other WAVES components.

Policy Objective 2: Developing national accounts for prioritized natural resources—minerals and mangroves[12]—based on the UN's SEEA2012, and analyzing the impact of different natural resource management and revenue-sharing scenarios on income and economic development

3.1| Minerals

- ***Information on the value of subsoil assets is generated, to contribute to medium- to long-term policy dialogue on rent recovery, distribution, and reinvestment.***
- ***Information on the value of ecosystem services associated with terrestrial as well as coastal and marine resources in Southern Palawan is generated, under different resource-use scenarios, to contribute to local medium- and long-term development planning and sustainable management.***

Minerals were prioritized for Phil-WAVES because there is a strong demand from the Philippines' National Economic and Development Authority (NEDA), Department of Environment and Natural Resources (DENR), and Climate Change Commission (CCC) to develop tools and indicators for sustainably managing mineral resources and the adverse impacts of climate change on the mineral areas. In fact, Section 15 of Executive Order 79 on institutionalizing and reforming the Philippine mining sector refers to WAVES as a significant tool for conducting resource accounting and cost-benefit analyses. In addition, minerals could potentially have a large impact on economic growth. However, the minerals sector is highly contentious in the Philippines.

Phil-WAVES can inform this debate by constructing, updating, and refining mineral accounts at the national level. This will allow the government to determine whether resource rents have been reinvested and to compare mineral rents with environmental degradation based on different market conditions, investment incentives, and governance structures. Revenue allocation between national and local governments and benefits sharing with local communities and indigenous people will also be studied.

In addition, Phil-WAVES will test and develop tools and methodologies for an ecosystem account in Southern Palawan, which is considered to be highly mineralized. However, mining is not allowed in environmentally critical and sensitive areas declared as Core and Restricted Zones under the nationally legislated Strategic Environmental Plan for Palawan Act, and is often in direct conflict with existing or proposed protected areas, as well as ancestral domains. In fact, Southern Palawan is characterized by high levels of biodiversity and extensive mangroves and fisheries and thus has a large potential for conservation and tourism, which could be put at risk by minerals exploitation. There is also a potential to further develop commercial agriculture, including rice, coconut and oil palm area. A comprehensive investigation taking into account all the ecosystem services and their management structures is thus necessary, covering below- and above-ground natural, coastal, and marine resources. This work will be closely coordinated with the Philippine Statistics Authority (PSA) to ensure the information can be incorporated into the national-level mineral accounts.

These activities will be aligned with other proposed WB initiatives, most notably the Extractive Industries Transparency Initiative (EITI) and Open Data Initiative (ODI). Moreover, synergies in data collection, analysis, and dissemination exist for the Southern Palawan ecosystem account with the Capturing Coral Reef and Related Ecosystem Services (CCRRES) project.

[12]Mangrove accounts still subject to the result of the rapid assessment to be conducted in May 2015

The proposed WAVES activities in the Philippines related to this policy objective are:

National Mineral Accounts

- Development of satellite accounts for the mining sector to feed into macroeconomic indicators, based on the recently adopted SEEA methodology
- Analysis of issues related to rent recovery, distribution, and reinvestment, and their implications for equity and sustainability.

Ecosystem Account for Southern Palawan

- Development of ecosystem accounts for Southern Palawan using the experimental SEEA methodology
- Analysis of social, economic, and environmental trade-offs of different resource-use scenarios and their implications on sustainable management

3.2| Mangroves

information on the value of mangroves and mangrove reforestation is generated to contribute to the medium- to long-term policy dialogue on the benefits of mangroves for coastal zone protection, disaster risk management, fisheries, tourism, and reducing

Mangroves were prioritized for Phil-WAVES because they provide a wide range of ecosystem services closely linked to key government priorities of higher economic growth and climate change resilience, in particular through provisioning (fishing, timber and non-timber products, and tourism) and shoreline and storm-surge protection services. Furthermore, mangrove reforestation has long been a policy priority and is currently being implemented through the National Greening Program, which is planning to (re)plant more than 1.5 billion trees. A policy for the conversion of abandoned fishponds back to mangroves is also being discussed. However, past replanting efforts have been poorly targeted, with survival rates of only 10 percent to 20 percent.

Phil-WAVES will inform this debate by constructing mangroves accounts and analyzing their contribution to the income of local communities and enhanced climate change resilience. It will do so both nationally (i.e., mangrove extent and hazards) and through pilot areas to cover mangrove associated product (fish production), biomass and carbon sequestration, and ecotourism. Phil-WAVES will also support the country's work on Reducing Emissions from Deforestation and Forest Degradation plus (REDD+). Since mangrove sequester significantly more carbon than terrestrial forests do, providing new data on mangroves will be critical. This analysis will also provide important information for the ongoing dialogue on adaptive capacity for climate change and disaster risk management led by the WB.

The proposed WAVES activities in the Philippines related to this policy objective are:

- Development of satellite accounts for mangroves to feed into macroeconomic indicators based on the recently adopted SEEA methodology; and
- Analysis of issues related to mangrove reforestation, coastal zone protection, fisheries, tourism, and REDD+.

Policy Objective 3: Developing and constructing ecosystem accounts for Southern Palawan and the Laguna Lake basin, and analyzing the trade-offs associated with different resource and ecosystem-use scenarios

information on the value of ecosystem services associated with the Laguna Lake basin is generated under different resource-use scenarios to contribute to local medium- and long-term development planning and sustainable management, and to generate a water-pricing plan.

National water accounts cannot be constructed under Phil-WAVES due to their complexity and the program's limited budget. However, the Laguna Lake basin was selected as a case study at the request of the Laguna Lake Development Authority (LLDA). The 1996 Laguna de Bay Master Plan is being updated and the development authority is in negotiations for the pricing of abstracted raw water with three water utilities. Both activities should take into consideration wealth accounting and a comprehensive valuation of ecosystem services of various existing uses. In particular, such an evaluation should not only analyze water production costs, but also take into account potential interactions with other basin uses, including habitat for capture and culture fisheries, drainage of a highly urbanized watershed, flood control, pollution from various sources, sedimentation, and potential water demand from Metro Manila.

Phil-WAVES can inform this debate by focusing on two three policy issues: pollution, sedimentation, and competing water uses. The information to be generated will be crucial in modeling the causal relationships between the quality of the water in Laguna Lake, and the silt and pollutant loads of waters draining into the lake. By integrating land and water management, the LLDA will, for instance, be able to analyze how protecting upper watersheds will reduce siltation, and how reducing pollution loading—including solid waste disposal in the lowland area—will help maintain water quality and the capacity of the lake to act as a buffer and mitigate flood risks in Metro Manila. Understanding the monetary component is equally important to analyze cost-effective interventions aimed at maintaining—and where possible enhancing—water quality in the lake. The monetary component also is important as an input into potential payment mechanisms for water use, which could lead to sustainable financing of improved water resource management in Laguna Lake.

The proposed WAVES activities in the Philippines related to this policy objective are

- Development of ecosystem accounts for the Laguna Lake basin, using the experimental SEEA methodology; and
- Analysis of social, economic, and environmental trade-offs of different water-use scenarios and their implications for sustainable management.

4| Phil-WAVES workplan

The work plan has been structured around three technical and two cross-cutting components, as shown in Table 2. The total estimated budget for the work plan is $1.5 million. Annex 1 contains the detailed work plan.

Table 3. Summary of Phil-WAVES Work Plan

Component	Policy Objective	Expected Outputs	Estimated Budget ($)
1. Macroeconomic indicators	Complement existing macroeconomic indicators and guide sustainable development and macroeconomic monitoring	Macroeconomic indicator development and annual revision, including adjusted net savings, adjusted net national income, produced capital, and comprehensive wealth	***40,000***
2. National satellite account for priority sectors			
2.1 National satellite account for mineral resources	Contribute to medium- to long-term policy dialogue on rent recovery, distribution, and investment	Satellite account development for proven resources in large-scale mining sector, and integration into macroeconomic indicators Analysis of issues related to rent recovery, distribution, and reinvestment and their implications for equity and sustainability	***60,000***
2.2 National satellite account for mangroves	Contribute to medium- to long-term policy dialogue on mangrove reforestation, coastal zone protection, fisheries, tourism, and REDD+	Satellite account development for mangroves, and integration into macroeconomic indicators Analysis of issues related to mangrove reforestation, coastal zone protection, fisheries, tourism, and REDD+	***60,000***
3. Ecosystem accounts			
3.1. Ecosystem account for Southern Palawan	Contribute to local medium- and long-term development planning and sustainable management	Development of ecosystem account and framework for replication Analysis of social, economic, and environmental trade-offs of different resource use scenarios and their implications for sustainable management	***145,000***
3.2. Ecosystem account for Laguna Lake Basin	Contribute to local medium- and long-term development planning and sustainable management, and generate a water-pricing plan	Development of ecosystem account and framework for replication Analysis of social, economic, and environmental trade-offs of different resource use scenarios and their implications for sustainable management	***145,000***

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4. Capacity Building and Policy Dialogue (crosscutting)	Technical training for each component, awareness raising and communications activities	***650,000***
5. Project Management, Coordination, and Oversight (crosscutting)	Operation of steering committee and technical working group Project management and technical coordination	***400,000***
TOTAL ESTIMATED BUDGET		**1,500,000**

5| Institutional Arrangements for Implementation of Phil-WAVES

The capacity and institutional assessment during the phase of preparing for WAVES concluded that the necessary legal and policy framework, government ownership, and capacity to institutionalize SEEA are in place. Furthermore, past initiatives have introduced the concepts underlying WAVES and have thus laid the institutional foundation for its implementation. Resource valuation is also a priority in the 2011-2016 PDP Medium Term Update and NCCAP, which explicitly call for a proper valuation of natural resources as a tool for science-based development planning and policy decisions, as well as climate change adaptation. The lead agency, the NEDA, will be in a good position to advocate for the adoption and institutionalization of WAVES—with support from other government agencies, non-governmental organizations (NGO), and the private sector—because it is primarily responsible for the country's development blueprint.

To support institutionalization of the selected SEEA modules, Phil-WAVES will (1) provide training for newcomers and previously trained staff; (2) introduce Key Performance Indicators (KPIs) in the medium- and long-term development plans and Organizational Performance Indicator Framework (OPIF); (3) synchronize project activities with the long-term planning processes of the NEDA, Department of Budget and Management (DBM), Department of Finance (DOF), and relevant statistical and sector agencies; (4) rely on government staff and budgetary commitments for the implementation of the selected SEEA modules and the associated policy analysis, in accordance with budgetary rules and policies; and (5) use existing inter-agency committees and technical working groups to involve all relevant government agencies and partner institutions during implementation.

The government has been and will be fully engaged in the preparation, implementation, and follow-up related to this activity. However, given that past NCA initiatives was not fully institutionalized because of a lack of capacity and resources, the PSA has explicitly requested the Phil-WAVES TA to support the institutionalization of the selected SEEA modules. For this reason,

the project is financing activities executed by both the WB and the Government.

The Recipient-Executed Trust Fund (RETF) of $0.7 million is supporting in-house capacity building at the PSA. This involves hiring four technical staff who are in charge of compiling the natural capital accounts. Their salaries and terms of employment are similar to other PSA staffs, thus helping to facilitate their integration into government staff once the project closes. In addition to generating data and indicators, the PSA will also lead SEEA training activities and supporting studies, drawing on local resources where possible. Additional TA will be provided by the Australian Bureau of Statistics (ABS), through financing from Australia's Department of Foreign Affairs and Trade (DFAT). The country coordinator and project assistant, housed at the NEDA, are also financed through the RETF, to facilitate project coordination across government agencies.

The work is completed by activities financed under the Bank-Executed Trust Fund (BETF) of $0.8 million, which is focusing on policy analysis at the national and local level. The fund also finances the development of the ecosystem accounts for Southern Palawan and the Laguna Lake basin and analysis of the trade-offs associated with different resource and ecosystem-use scenarios.

To ensure prompt and smooth implementation, the following institutional arrangements have been made:

- ***Steering committee***. The Phil-WAVES steering committee (PWSC) has been established and is meeting regularly. The PWSC is chaired by the NEDA, with the following agencies as members: Department of Budget and Management (DBM) - vice chair, DOF, PSA, DENR, CCC, Department of Agriculture (DA), Office of the Presidential Advisor on Environmental Protection(OPAEP)/LLDA, and Union of Local Authorities of the Philippines (ULAP).The steering committee is providing strategic direction and guidance by facilitating implementation; reviewing and approving work plans, progress reports, and Phil-WAVES analysis; and establishing channels for policy dialogue.
- ***Lead agency***. The Agriculture, Natural Resource, and Environment staff (ANRES) of the NEDA is leading Phil-WAVES by providing strategic direction and guidance through organizing and providing secretariat and technical support to the PWSC and to the Phil-WAVES partners, respectively. The NEDA created a Phil-WAVES working group through a special order. The ANRES is being assisted by the national country coordinator, whose assistant is in charge of monitoring and coordinating the project. This includes (1) coordinating, facilitating and monitoring the implementation of Phil-WAVES across and within institutions involved in the project to ensure effective and timely delivery of its expected outputs; (2) providing technical and management support to various components of Phil-WAVES, including preparation of annual work plan (AWP) and project reports, planning and policy analysis and implementation of project communication strategy/plan; (3) leading the identification of training needs; and (4) reporting regularly to NEDA, World Bank, WAVES global partnership program and Phil-WAVES implementing partners. The National Planning and Policy Staff will lead the macroeconomic policy analysis under Policy Objective 1.With support from the country coordinator, NEDA leads the regular monitoring and reporting and coordinates the policy dialogue with the Cabinet, CCC, DOF, DBM, and key sector agencies. As the WAVES project

moves on to the next stage of policy analysis and institutionalization, the NEDA will lead the policy dialogue with the various agencies to discuss the necessary reforms in the government's policy and institutional frameworks on sustainable development. Further discussions with DBM will be pursued to mainstream the accounts and allocate regular funds to the various agencies responsible for continuing NCA as part of their mandated functions.

- ***Implementation of SEEA***: The PSA is responsible for implementing SEEA by constructing both the macroeconomic indicators and natural capital accounts, and leading the learning among the statistical and source agencies. The SEEA implementation is supported by the Inter-Agency Committee on Environment and Natural Resource Statistics (IAC-ENRS), which is tapped to (1) oversee the generation of data and indicators, (2) provide technical advice and guidance,(3) ensure quality, (4) ensure that detailed and quality data is made available, and (5) coordinate and collaborate across government agencies. The Technical Working Group for Mineral is tapped to assist in the development of the mineral accounts. Four technical staff have been hired under the project to assist with SEEA implementation.PSA has established an Environment and Disaster Statistics Division under the Macroeconomic Accounts Services of the Sectoral Statistics Office. Additionally, PSA will be participating in the standardization of the ecosystem accounts starting with the creation of designated environmental statistics to be incorporated in the Philippine Development Plan. PSA is also embarking on the localization of the SEEA by producing a Philippine SEEA Manual.
- ***Ecosystem accounts for the two pilot sites.*** The Foreign-Assisted and Special Projects Service (FASPS) of the DENR in close coordination with the Palawan Council for Sustainable Development (PCSD) leads the Technical Working Group for Southern Palawan (TWG-SP) in the construction of the ecosystem accounts by providing coordination support and liaising with the NEDA,PSA and other department offices, both national and regional levels. On the other hand, the LLDA leads the development of the ecosystem accounts for the Laguna de Bay thru the creation of the Technical Working Group for Laguna de Bay (TWG-LdB) composed of various divisions in LLDA. Each activity is being supported by a team of experts and receive policy advice and guidance from relevant sector and government agencies and local government units (LGUs).
- ***Policy analysis***. The National Policy and Planning Staff (NPPS) of the NEDA will lead the policy analysis for macroeconomic growth and sustainability. In terms of the policy work for the minerals and mangroves, the NPPS together with the Planning and Policy Service (PPS) of the DENR will develop policy reports based on the results of the national accounts using the appropriate policy tools, and provide policy advice as deemed needed for the policy analysis on the ecosystem accounts.
- ***The World Bank.*** The Bank team is supporting the NEDA and other Phil-WAVES implementing agencies by (1) providing the necessary technical and policy advice and support as needed; (2) liaising with the government, key national and international stakeholders, and the WAVES global partnership program; (3) monitoring and reporting on the work plan and budget; and (4) managing all the consultant contracts and the BETF.

6| Progress of Implementation and Next Steps

6.1| Progress

RETF and BETF: The RETF, managed by the PSA, with an original Grant closing date on December 31, 2015 was extended until April 30, 2017 to allow sufficient time to complete the project implementation considering the initial delay in setting up the RETF and actual

implementation of the activities. As a counterpart funding source, the BETF, managed by the Word Bank, was likewise extended to continuously provide technical and policy support.

Overall Progress on Accounts

Minerals: At the national level, the Philippine Statistics Authority (PSA) has completed the national accounts for the four (4) metallic minerals namely: gold, copper, nickel and chromium. The PSA together with the Mines and Geosciences Bureau (MGB) of the DENR developed the mineral accounts which included review, collection and validation of mineral data, finalization of the list of indicators and reporting procedures, localization of the classification system on mineral resources based on the 2009 United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources, development of new database and assessment of the mineral estimates.

Mangroves: Based on the results of the mangrove scoping study commissioned by the PSA and NEDA, which was completed in September 2015, proposed that mangrove accounts can be developed in two levels: (i) national scope - mangrove extent and hazards; and (ii) pilot sites – mangrove associated product (fish production), biomass and carbon sequestration, and ecotourism. The preliminary result of the scoping study was presented by the PSA to the Phil-WAVES Steering Committee (PWSC) in July 2015 and the final result was presented during the consultation session in October 2015 and 6th PWSC meeting in April 2016.

Ecosystem accounts: The ecosystem accounts for the two WAVES pilot sites, Southern Palawan and Laguna Lake, were completed in the last quarter of 2015. The final drafts of the technical reports were submitted to the World Bank for final management review and publication.

Laguna Lake

The final accounts included in the Laguna Lake study were: land, water, ecosystem condition and ecosystem service supply and use account.

The report highlighted four key findings:

1. land conversion due to urban sprawl and rapid industrial development is causing a decline in forest cover and affecting agriculture production
2. increase in soil erosion from the watershed has changed the contours of the lake
3. pollution coming from domestic, industrial and agricultural/forest wastes contribute to the degradation of the water quality
4. the lake can still sustain fisheries production but is threatened by pollution

A dissemination forum on the Laguna Lake ecosystem accounting results was conducted on 2 October 2015 in Quezon City. National and local government agencies, pollution control agencies, water concessionaires, academia and members of the fishing community were in attendance. Laguna Lake Development Authority Secretary Neric Acosta led the presentation and discussion of the results.

The stakeholders acknowledged the importance of using the ecosystem accounts for the Laguna Lake Basin as a planning and decision-support tool for policymaking. Moreover, there was a consensus on the need to increase the coverage and depth of the ecosystem accounts to include a biodiversity account and a water account to help the LLDA determine an equitable water pricing strategy for the users of the lake.

In terms of policy analysis, the TWG for Laguna de Bay discussed the priority policy issues and interventions particularly relevant to the Integrated Water Resource Management (IWRM) in the Laguna de Bay Basin in December 2015. The results and implications of policy analysis will consider the key issues to sustain and improve ecosystem services in Laguna De Bay Basin by conducting scenario analysis on flood risk, sedimentation, fisheries, water pricing and water quality as identified in April 2016.

Southern Palawan

The Southern Palawan Ecosystem Accounts consist of five accounts: land account, carbon account, ecosystem asset account, ecosystem service use and supply account, and ecosystem condition account.

The report highlighted the following key findings:

1. reduced and potentially reversed deforestation rate in Southern Palawan
2. the forests of Southern Palawan are an important carbon sink
3. Pulot watershed regulate water flow and supply for crop production
4. dramatic decline in the key coastal ecosystems: mangrove forests, and coastal reefs

There were two consultations conducted for the dissemination of the Southern Palawan ecosystem account results: one in the city of Puerto Princesa (the capital of Palawan) on October 5, 2016 and the other on October 6, 2015 at Sofronio Espanola, the municipality where the Pulot watershed is located. The activity aimed to inform the stakeholders about the Phil-WAVES Project and preliminary results of the ecosystem accounts developed and to gain their insights about the project and its findings. A wide range of stakeholders, consisting of the provincial government of Palawan, concerned municipal officials, private industries including mining, tourism and agricultural companies, local media, academic institutions, national government agencies such as the Department of Trade and Industry (DTI), local communities including farmers and fisherfolks, attended the said events.

A major concern of the stakeholders was the proliferation of the oil palm plantations and the reported loss of the forest cover in Sofronio Espanola which they felt was not adequately reflected in the results of the land account.

Palawan Governor Jose Alvarez was briefed on the results of the Ecosystem Accounts and given feedback from two public consultations. Gov. Alvarez expressed support to Phil-WAVES and he appreciated how the results of the project would guide them in choosing the right development options for the province. The Phil-WAVES Team discussed next steps with him which included scaling up the accounts to cover other ecosystem services as well as expand the spatial coverage of the accounts beyond Southern Palawan. Likewise, Vice Governor Dennis Socrates provided the context of Palawan by tagging the province as the “country’s last frontier”.

In December 2015, the policy analysis component such as the formulation of policy framework, preparation of policy brief and policy note based on the results of the ecosystem accounts is underway. The TWG members for Southern Palawan were trained on the basic concepts, methods and tools of policy development and analysis including how to use ecosystem accounts in analyzing policy problems. This paved way for the development of policy frameworks that integrate priority policy issues in early January 2016.

Capacity Building: Training on modelling tools, valuation concepts and application, and policy analysis were provided to the implementing agencies.

- On 1 July 2015, training on HYMOS 4 Model as a tool for water condition was conducted by the LLDA. This was done to: (i) familiarize the TWG members on the concepts and theories applied in HYMOS Model; and (ii) increase understanding in the operation of the HYMOS Model in storing, processing and presentation of hydrological and environmental data. The derived hydrological data from processing information inputs in the HYMOS Model will be included in the water supply condition.
- On 28-31 July 28 2015, hands-on training on valuation of ecosystem services was conducted to help the TWGs in the physical and monetary valuation of the ecosystem accounts.
- On 8-11 December 2015, training on policy analysis using Phil-WAVES ecosystem accounts was held in Alfonzo, Cavite. The output of the training includes draft policy report which contains several proposed policy statements to address issues affecting the ecosystems.
- A follow-up training course on environmental accounting conducted by the ABS and Australian National University in Canberra in December 2015 was attended by a delegation of Government officials from the key government agencies (DENR, LLDA and PSA).
- Simultaneous activities were undertaken on capacity-building with TWG members who attended SEEA Central Framework Training on March 8-15, 2015 in Tagaytay and a Workshop on Brand Messaging and Social Media last March 15-16, 2016 in Quezon City.

Communications: The communications activities are not only focused on the activities and outputs of Phil-WAVES but also consider effective IEC strategy for NCA and ecosystem/ environmental accounting as we gear towards the institutionalization of the NCA. In order to attain the target outputs for communications and map out activities that would best support the dissemination of the results and subsequently, the policy analysis, an Integrated Communications Work and Financial Plan for 2015 was conceptualized by the Phil-WAVES Team.

A new set of WAVES communication materials for Southern Palawan and Laguna de Bay were prepared and disseminated to stakeholders and beneficiaries during the various dissemination forums last October 2015: WAVES Policy Brief on Laguna de Bay and Southern Palawan Ecosystem Accounts, frequently asked questions (FAQS), glossary of ecosystem terms. Additionally, "snapshot" reports summarizing the highlights of the policy brief were developed in English and Tagalog.

In line with the objective of institutionalization, part of the communications objective will be to analyze and identify points of convergence between WAVES with other World Bank projects, like Capturing Coral Reef and Related Ecosystem Services (CCRES), the Extractives Industries Transparency Initiative (EITI), and the Flood Master Plan.

6.2| Next Steps

The next big challenge of the Phil-WAVES Team will be the scaling up of the ecosystem accounts in both pilot sites, Laguna de Bay and Southern Palawan and the related policy analysis. Simultaneously, the first national accounts for minerals will be finalized and disseminated during

The policy analysis of the two ecosystem accounts is planned for September 2016.

Specific to the scaling up of the ecosystem accounts, the following initiatives are planned:

Laguna Lake

- Further development of the fisheries account through standardization of survey instruments linked to accounting and covering a larger sample population
- Enhancement of the water condition and water use accounts by better analysis of the sources of pollution in the lake and updating the water balance
- Updating of the sediment map by using the new 2014 land cover data from NAMRIA

The possible policy scenarios for the Laguna Lake ecosystem accounts were flood risk analysis including identification of probability of flooding of different zones, analysis of the effect of better domestic waste and discharge management, effects of the control of land use change on sedimentation, and food security issues related to fish catch.

Southern Palawan

- Set-up / development of data management system
- Develop a national scale ecosystem extent account based on a land use map, and capacitate NAMRIA to continue this kind of work in the future that targets to signify that the work would indeed be scalable to the national level.
- Other potential accounts for scaling up are the land, carbon, water regulation, and sediment control.

There are three (3) specific policy scenarios that have initially been identified by the TWG as critical to translate information in the ecosystem accounts to policy relevant information. Each scenario includes an evaluation of different policy options based on information in the accounts. Scenario building will be developed in three areas: use regimes for mangroves, coral reef degradation versus protection, and water resources for irrigation. In the next phase, these scenarios will be explored and developed using appropriate policy tools and framework.

Mineral Accounts

A stakeholder consultation and dissemination forum to discuss the results of the national mineral accounts is set for second quarter 2016.

Mangrove Accounts

A planning workshop will be conducted to map out specific activities to be undertaken in the development of mangrove accounts by March 2016.

Media site visit

To follow on the various activities related to media engagement, selected members of the press will be invited to Laguna Lake and Southern Palawan for an on-site briefing and media tour. This initiative is scheduled for sometime mid-2016.

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ANNEX

Annex 1. WAVES Results-Based Monitoring Matrix

Objectives & Outcome (Results) Indicators	Target Values						
	Base-Line June 2011	Prep year June 2012	Year 1 June 2013[a]	Year 2 June 2014	Year 3 June 2015	Year 4 June 2016	Year 5 June 2017 (proposed)
Country-level: PDO 1. To implement natural capital accounting in the country							
Outcome Indicators:							
a. Country has committed to institutionalize natural capital accounting based on lessons learned from the WAVES program				Commitment to hire 4 staff in Philippine Statistics Authority (PSA); procurement in process 4 staff hired by PSA (funded from RETF)	**Target** • 4 staff in PSA **Achieved** • Environment and Natural Resources Accounts Division under the Macroeconomic Accounts Services of the Sectoral Statistics Office of the newly created Philippine Statistics Authority (PSA)	**Target** • Environment and Natural Resources Accounts Division retained & funded by PSA • 4 staff retained at PSA (funded out of RETF) • Funding commitment to continue producing natural capital accounts at PSA • Staff & funding commitments for additional accounts in other government agencies (i.e., DENR, LLDA, and PCSD • Consider the use of data and indicators from Natural Capital Accounts (NCA) as key performance indicators (KPI) for development planning and monitoring	**Target** • Environment and Natural Resources Accounts Division retained & funded by PSA • 4 staff taken over as PSA staff • Funding allocated to continue producing natural capital accounts at PSA • Staff in place & funding allocated in other government agencies (DENR, LLDA, PCSD)

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Annex 1. WAVES Results-Based Monitoring Matrix (*continued*)

Objectives & Outcome (Results) Indicators	Target Values						
	Base-Line June 2011	Prep year June 2012	Year 1 June 2013[a]	Year 2 June 2014	Year 3 June 2015	Year 4 June 2016	Year 5 June 2017 (proposed)
Results Indicators (Intermediate Outcomes)							
1.1 Country has completed the milestones for the WAVES Preparation Phase[b]			All completed				
1.2 Country has asset accounts for selected natural assets			Small group meetings convened (i.e., PSA, NEDA and MGB)	Work started on mineral asset accounts TWG on Mineral Accounts convened	**Target** • Subsoil assets, preliminary land accounts for ecosystem pilots **Achieved** • Preliminary subsoil asset accounts • Preliminary land accounts for ecosystem pilots • Final land accounts for ecosystem pilots	**Target** • Final subsoil asset accounts • Preliminary mangrove accounts**	**Target** • Update subsoil asset accounts • Final mangroves accounts**

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Annex 1. WAVES Results-Based Monitoring Matrix (*continued*)

Objectives & Outcome (Results) Indicators	Target Values						
	Base-Line June 2011	Prep year June 2012	Year 1 June 2013[a]	Year 2 June 2014	Year 3 June 2015	Year 4 June 2016	Year 5 June 2017 (proposed)
1.3 Country has flow accounts for selected natural resources					**Target** • Monetary minerals accounts **Achieved** • Preliminary water accounts for Laguna Lake • Preliminary monetary minerals accounts	**Target** • Final water accounts for Laguna Lake • Final monetary minerals accounts • Preliminary mangrove product accounts**	**Target** • Updated monetary minerals accounts • Final mangrove accounts**
1.4 Country has experimental ecosystem accounts (if intended in country work-plan)				Work started on ecosystem accounts for 2 pilot sites: Laguna Lake (Metro Manila) & Southern Palawan	**Target** • Preliminary results for 2 pilot sites **Achieved** • Preliminary ecosystem accounts for 2 pilot sites, including ecosystem condition, ecosystem production, ecosystem asset, and a range of ecosystem services	**Target** • Final ecosystem accounts for 2 pilot sites, including ecosystem condition, ecosystem production, ecosystem asset, and a range of ecosystem services	**Target** • Final scaled-up ecosystem accounts at the LGU/provincial level

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Annex 1. WAVES Results-Based Monitoring Matrix (*continued*)

Objectives & Outcome (Results) Indicators	Target Values						
	Base-Line June 2011	Prep year June 2012	Year 1 June 2013[a]	Year 2 June 2014	Year 3 June 2015	Year 4 June 2016	Year 5 June 2017 (proposed)
1.5 Country has macro-economic indicators derived from the SEEA accounts (if intended in country work-plan)					**Target** • Preliminary estimates adjusted net savings & adjusted net income **Achieved** • Preliminary estimates adjusted net savings, adjusted net income, produce capital & comprehensive wealth	**Target** • Final estimates adjusted net savings, adjusted net income, produced capital & comprehensive wealth	**Target** • Updated estimates adjusted net savings, adjusted net income, produced capital & comprehensive wealth
1.6 Country has capacity for maintaining NCA (evidenced by dedicated government staff for NCA and regular reporting mechanism for production of natural capital accounts)				Unit in PSA created with 4 staff; Technical working groups established for ecosystem accounts& mineral accounts& received training; 4 PSA staff received training at Australian National University course; PTEC training course on ecosystem accounting, and other workshops	**Target** • Unit in Philippine Statistics Authority created with 4 staff & received training • TWG established for macroeconomic indicators & received training	**Target** • Environment and Natural Resources Accounts Division retained & funded by PSA • 4 staff retained at PSA (funded out of RETF) • IAC-ENRS and TWG on mineral play active role • Preliminary results of Analysis of growth and sustainability	**Target** • Environment and Natural Resources Accounts Division retained &funded by PSA • 4 staff taken over as PSA staff • IAC-ENRS and TWG on mineral play active role • Final report on Analysis of growth and sustainability

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Annex 1. WAVES Results-Based Monitoring Matrix (*continued*)

Objectives & Outcome (Results) Indicators	Target Values						
	Base-Line June 2011	Prep year June 2012	Year 1 June 2013[a]	Year 2 June 2014	Year 3 June 2015	Year 4 June 2016	Year 5 June 2017 (proposed)
				4 staff hired by PSA (funded out of RETF) TWG on mineral established PSA staffs received training on SEEA 2012 and SNA 2008	**Achieved** • Environment and Natural Resources Accounts Division created under the Macroeconomic Accounts Services under the Sectoral Statistics Office • 4 staff retained by PSA (funded out of RETF) • Validation workshop for mineral accounts conducted Inter-agency committee for environment and natural resource statistics (IAC-ENRS) revived • TWG on mineral accounts received training • GoP staff received training on macro indicators		

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Annex 1. WAVES Results-Based Monitoring Matrix *(continued)*

Objectives & Outcome (Results) Indicators	Target Values						
	Base-Line June 2011	Prep year June 2012	Year 1 June 2013[a]	Year 2 June 2014	Year 3 June 2015	Year 4 June 2016	Year 5 June 2017 (proposed)
PDO 2. To incorporate natural capital accounting in policy analysis and development planning in the country							
Outcome Indicators:							
a. NCA informs policy dialogue on growth, environment and poverty reduction, evidenced by citing NCA or using NCA indicators and data in, development plans, sector strategies and plans, executive orders, legislative documents, and the broader policy analysis literature (may include World Bank ESW, AAA and project formulation documents)		Executive Order 79[c] which refers to the information and data from the WAVES		NCA included in revised Philippine Development Plan as management tool/strategy	**Target** • Water pricing discussions for Laguna Lake based on preliminary results from ecosystem accounts • Land use planning/ zoning in Southern Palawan based on preliminary results from ecosystem accounts **Achieved** • Water pricing discussions for Laguna Lake based on preliminary results from ecosystem accounts; • Land use planning/ zoning in Southern Palawan based on preliminary results from ecosystem accounts	**Target** • Mining policy informed by mineral accounts &ecosystem pilot in southern Palawan. • Philippine Development Plan informed by macroeconomic indicators • Policy dialogue on ecosystem accounts	**Target** • Coastal development& disaster risk reduction/disaster risk management policy & national greening program informed by mangrove accounts • Ecosystem accounts used as a M&R tool for Laguna Lake Express Dike project • Up-scale ecosystem accounts used to inform land use planning & zoning • Policy dialogue on macroeconomic indicators and national accounts

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Annex 1. WAVES Results-Based Monitoring Matrix (*continued*)

Objectives & Outcome (Results) Indicators	Target Values						
	Base-Line June 2011	Prep year June 2012	Year 1 June 2013[a]	Year 2 June 2014	Year 3 June 2015	Year 4 June 2016	Year 5 June 2017 (proposed)
Results Indicators (Intermediate Outcomes)							
2.1 Country has policy notes and analytical work based on NCA				1st Policy Brief on Ecosystem Accounts for 2 sites, June 2014 Water pricing study for the Laguna Lake basin	**Target** • 1st note on macro indicators-minerals • 1st note on mineral accounts • 2nd note on ecosystem accounts **Achieved** • Methodological note on mineral accounts • Technical reports & series of snapshots on ecosystem accounts • Final Findings of Water pricing study for the Laguna Lake basin presented	**Target** • Final technical report & draft policy notes on macro indicators • Final technical report & draft policy notes on 2 ecosystem pilot sites; • Final technical report & draft policy note on mineral accounts; • Draft Policy note on scaling up ecosystem accounting to the rest of the country; • 1st draft policy note on mangroves accounts	**Target** • Technical reports, policy notes on ecosystem accounts for the country; • Final technical report & policy notes on mangrove accounts

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Annex 1. WAVES Results-Based Monitoring Matrix *(continued)*

Objectives & Outcome (Results) Indicators	Target Values						
	Base-Line June 2011	Prep year June 2012	Year 1 June 2013[a]	Year 2 June 2014	Year 3 June 2015	Year 4 June 2016	Year 5 June 2017 (proposed)
2.2 Country has capacity for using NCA in policy dialogue (evidenced by government staff trained in using NCA)		2 training workshops for policy-makers, user agencies (government, academic, CSOs)	2 government staff sent UN Statistics Division international seminar on ecosystem accounts to Nov 2012	Two 2-day workshops on ecosystem accounting Sept 2013 (110+ participants from government, civil society, private sector & academia) 4 government staffs sent to SEEA regional training in Bangkok, Oct 2013 10 government staffs sent to one-week Introductory NCA course conducted by ABS-ANU, December 2013	**Target** • 2 staff attend NCA course of ABS-ANU • Training on SEEA 2012 • Follow-up training on ecosystem accounts • Training on adjusted net savings, adjusted net income produce capital and comprehensive wealth **Achieved** • 4 staff attended NCA course of ABS-ANU, December 2014	**Target** • 2 staff attend NCA course of ABS-ANU • Follow-up training on SEEA 2012 and links to SNA • Hands-on training on mangroves accounts • Training on Analysis of growth and sustainability	**Target** • 2 staff attend NCA course of ABS-ANU • Database training for PSA

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Annex 1. WAVES Results-Based Monitoring Matrix (*continued*)

Objectives & Outcome (Results) Indicators	Target Values						
	Base-Line June 2011	Prep year June 2012	Year 1 June 2013[a]	Year 2 June 2014	Year 3 June 2015	Year 4 June 2016	Year 5 June 2017 (proposed)
				30–40 government staffs (i.e., DENR, LLDA, NEDA, OPAEP/LLDA)& civil society/academe representatives participated in one-week training on ecosystem accounting, February 2014 30–40 government staffs (i.e., PSA, DENR-MGB, NEDA) participated in one-week training on SEEA central framework, February 2014	• Training on SEEA 2012 and links to SNA, September 2014 • Two 1-week training courses on ecosystem accounting, September 2014 and February 2015 • Hands-on training for TWGs on GIS, Sednet, statistical methods and valuation—throughout the year • 1st WAVES knowledge exchange workshop on ecosystem accounting, February 2015 • Training on adjusted net savings, adjusted net income produce capital and comprehensive wealth, April 2015		

[a] In the Philippines the preparation period lasted until June 2013.

[b] Phil-WAVES Steering Committee established, Feasibility study approved by Phil-WAVES Steering Committee and WAVES Secretariat, Stakeholder consultation on draft work plan, Work plan approved by National Steering Committee and WAVES Secretariat.

[c] EO 79— Institutionalizing and Implementing Reforms in the Philippine Mining Sector Providing Policies and Guidelines to Ensure Environmental Protection and Responsible Mining in the Utilization of Mineral Resources.

** For confirmation depending on the result of the rapid data assessment.

Wealth Accounting and the Valuation of Ecosystem Services

Wealth Accounting and the Valuation of Ecosystem Services (WAVES) is a global partnership led by the World Bank that aims to promote sustainable development by ensuring that natural resources are mainstreamed in development planning and national economic accounts.

www.wavespartnership.org

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