WAVES
Annual
Report
2015

WEALTH ACCOUNTING AND THE
VALUATION OF ECOSYSTEM SERVICES

WAVES ANNUAL REPORT 2015

WAVES

WORLD BANK GROUP

WAVES is a global partnership that aims to mainstream natural capital in development planning and national economic accounts in support of sustainable development.

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 is grateful to its donors—Denmark, the European Commission, France, Germany, Japan, The Netherlands, Norway, Switzerland, and the United Kingdom.

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EXECUTIVE SUMMARY

This past year we focused on consolidating our work in the eight core implementing countries. We are happy to share some highlights of our work in this Annual Report.

Mainstreaming NCA

One indicator of our collective success is the mention of natural capital accounting (NCA) in country development plans and strategies. In Colombia, NCA has been included in the new National Development Plan as a tool to measure green growth. Botswana is gearing up to include NCA in its next National Development Plan. In Costa Rica, a bill to include NCA in programs on water and forest management has been proposed. The new government of Madagascar has an interim two-year National Development Plan that includes NCA in the pillar on natural capital. In the Philippines, the government is currently developing a framework for scaling up ecosystem accounts to the provincial level.

In Guatemala, NCA was included in the National Development Plan last year and in the State of the Environment report this year. In Indonesia, based on previous policy reports by the World Bank, macroeconomic indicators of sustainability using NCA have been included in the Medium-Term Development Plan.

Sustaining work on NCA

One of our stated objectives is to establish capacity in countries to ensure that NCA becomes part of the government's routine business. Most WAVES countries have made substantial progress toward establishing dedicated units for NCA and staffing them. In Botswana, in addition to the unit in the Department of Water Affairs, the Ministry of Finance and Development Planning established an NCA unit in the Macroeconomics Policy Division, and the Department of Energy has also dedicated staff for NCA. Costa Rica's Central Bank has assigned staff to NCA. Under the new government in Madagascar, a unit for NCA has been established in the Ministry of Economy and Industry.

This has been possible as countries have seen value in the work done as members of the WAVES partnership and have an interest in seeing it continue.

Accounts being put to policy use

Countries have begun sharing results from accounts, filling a void on information that links natural resources with their impact on the economy and vice versa. In Botswana, water accounts are identified as a key tool for water sector reforms. Mineral accounts there are helping develop a fiscal rule on management of mineral revenues, a major component of gross domestic product (GDP) and government revenue. Energy accounts are expected to guide electricity pricing as well as decisions regarding the energy supply mix, particularly the role of renewables versus coal.

In Guatemala, forest accounts have informed the government of the extent of uncontrolled logging, leading to a National Strategy for Production and Use of Fuelwood. In Madagascar, forest accounts are being used to design sustainable financing mechanisms for protected areas that are efficient and equitable. In Colombia, accounts for Lake Tota are being used as a management tool to help in the allocation of water to competing users. In the Philippines, water accounts for Lake Laguna (Metro Manila area) will inform water pricing, and broader ecosystem accounts will inform upstream land use management for water quality. In Southern Palawan, the accounts will help in land use planning and management.

Making ecosystem accounting accessible

This year, a concerted effort was made to prepare standardized training on ecosystem accounts. The training developed with the help of experts from all over the world has a modular design, aimed at people with different levels of understanding. The Policy and Technical Experts Committee provided guidance, and this was tested in a week-long knowledge exchange workshop held in the Philippines for all WAVES countries plus India. The workshop supported peer-to-peer learning as well as learning from international experts, drawing on experiences in the Philippines, Guatemala, Australia, the Netherlands, India, and other countries. The

outcome of the workshop included draft plans for each country for their ecosystem accounts.

Focus on capacity building

WAVES strengthened training and capacity-building programs in each country. Several regional and international training workshops have been held. Notable among them were the two regional workshops: one in Turkey for 12 Central Asian countries and one in Costa Rica for eight Latin American countries. The Latin American Community of Practice was launched at the Costa Rica workshop and will provide an important platform for future work in Latin America beyond the three WAVES countries.

Opportunities in a changing global landscape

There has been a mushrooming of initiatives on NCA. Over the last year, more of our partners such as United Nations Environment Programme (UNEP), United Nations Statistics Division (UNSD), United Nations Development Programme (UNDP) and bilateral donors like the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, and Agence Française de Développement (AFD), have launched initiatives to implement natural capital accounting. Some of the regional U.N. agencies like the Economic Commission for Europe (UNECE) and the Economic Commission for Latin America and the Caribbean (ECLAC) have provided training on NCA. Several middle-income countries have stepped up their own efforts, including Brazil, Chile, Ecuador, Malaysia, Mexico, and Uruguay. In this emerging global landscape, WAVES found ways to complement some of these initiatives. WAVES leveraged work done by partners to engage several of the 70 countries that had signed on to the 50:50 NCA initiative at Rio+20. For example, for trainings in Botswana, Morocco, Rwanda, Turkey, and the Philippines, we have worked with the Australian Bureau of Statistics (ABS), the United Kingdom, and the U.S. Geological Survey (USGS).

Working together with the private sector and financial sectors on NCA

In April, WAVES cohosted for the first time an event that brought public, private, and financial groups together for two days on "Advancing Natural Capital Accounting in Government, Business, and Finance: Theory, Practice and Enabling Conditions." More than 60 people attended to share views, align definitions and approaches, and establish priorities to work in tandem. There was agreement to create a community of practice aimed at developing collaborative approaches to scale up the application of NCA.

Wealth indicators integrated in World Bank operations

In 2014, the World Bank introduced the Systematic Country Diagnostic (SCD), a tool to assess the constraints a country has to address and the opportunities it can embrace to accelerate progress toward the goals of ending extreme poverty and promoting shared prosperity in a sustainable way. The SCD provides the analytical background for the World Bank's strategic engagement with each country. Wealth accounting indicators are part of the inventory of SCD tools and have been used in SCDs for a number of countries (Argentina, Belize, Botswana, Lesotho, Serbia, and Uganda).

Communicating natural capital accounting

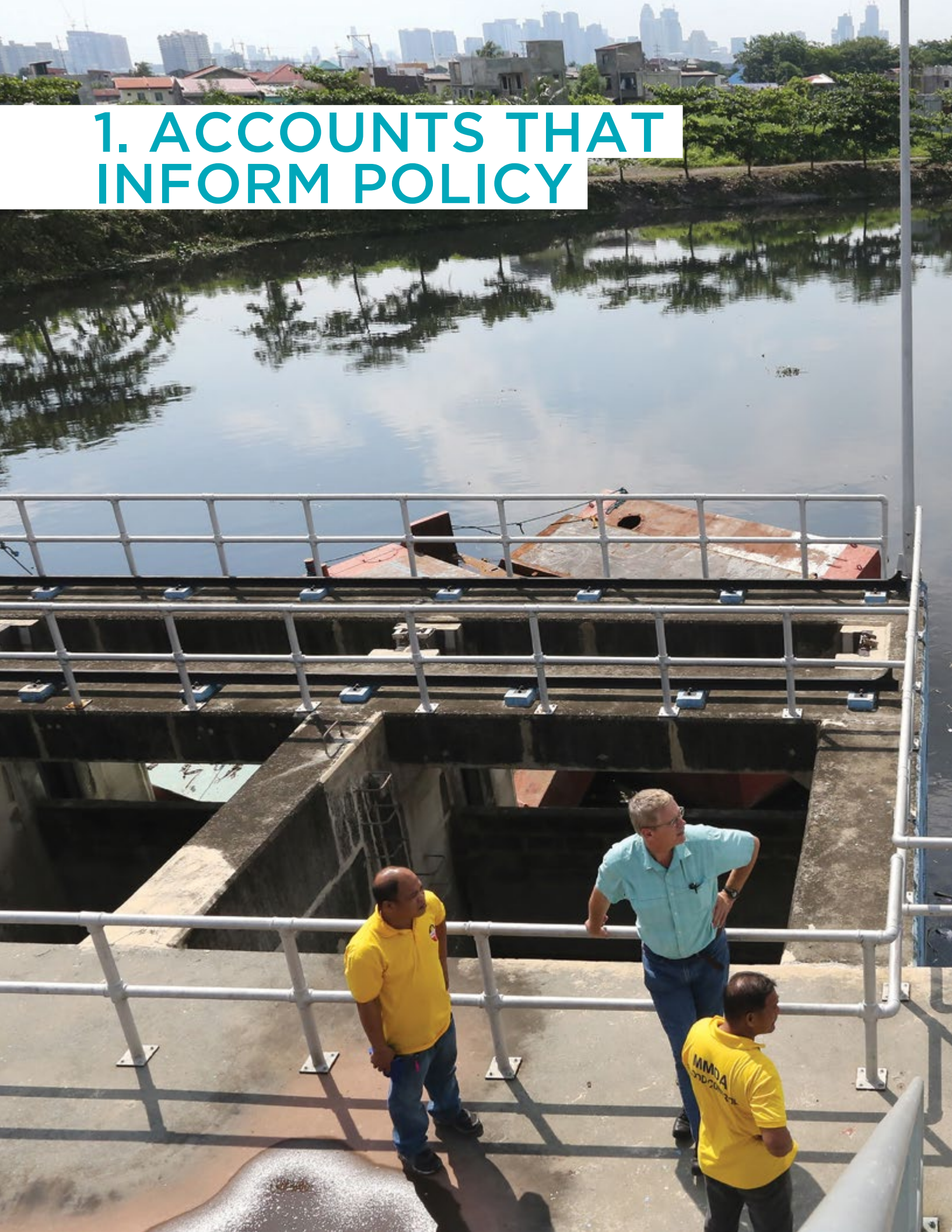
In partnership with the International Institute for Environment and Development (IIED), WAVES has intensified work on building engagement and mobilizing support and action on NCA in WAVES core implementing countries. There are active communications programs in Botswana, Colombia, Guatemala, and Rwanda that are informed by stakeholder discussions. The Philippines has led on communicating NCA for nearly two years.

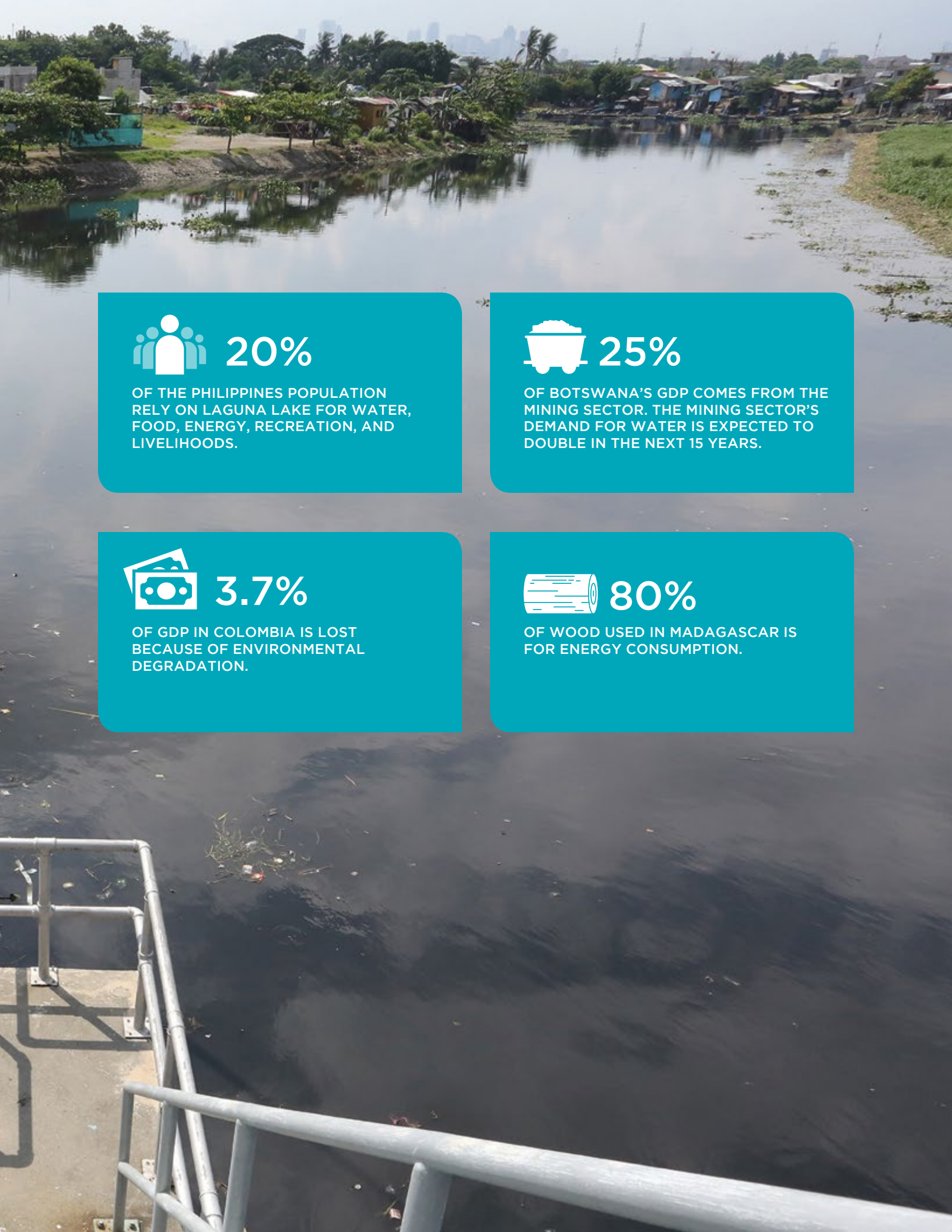
Globally, our website and newsletter continue to be popular. The subscribers to the newsletter nearly doubled, and website views went up by 25 percent. The WAVES site has been complemented by a Knowledge Platform that will serve as a one-stop website for all publications and knowledge on NCA.

Looking ahead

The WAVES Global Partnership has received an extension of its end date to December 2019. In the coming years, WAVES will continue its current work with countries but will also actively explore ways to take advantage of the new momentum, initiatives, and partners for NCA. We will reach out to support the many other countries that have endorsed NCA either through joint work with partners or the establishment of regionally based communities of practice that can provide such support. WAVES will also seek to lay the groundwork for a broad partnership that can sustain NCA beyond WAVES.

1. ACCOUNTS THAT INFORM POLICY





20%

OF THE PHILIPPINES POPULATION RELY ON LAGUNA LAKE FOR WATER, FOOD, ENERGY, RECREATION, AND LIVELIHOODS.

25%

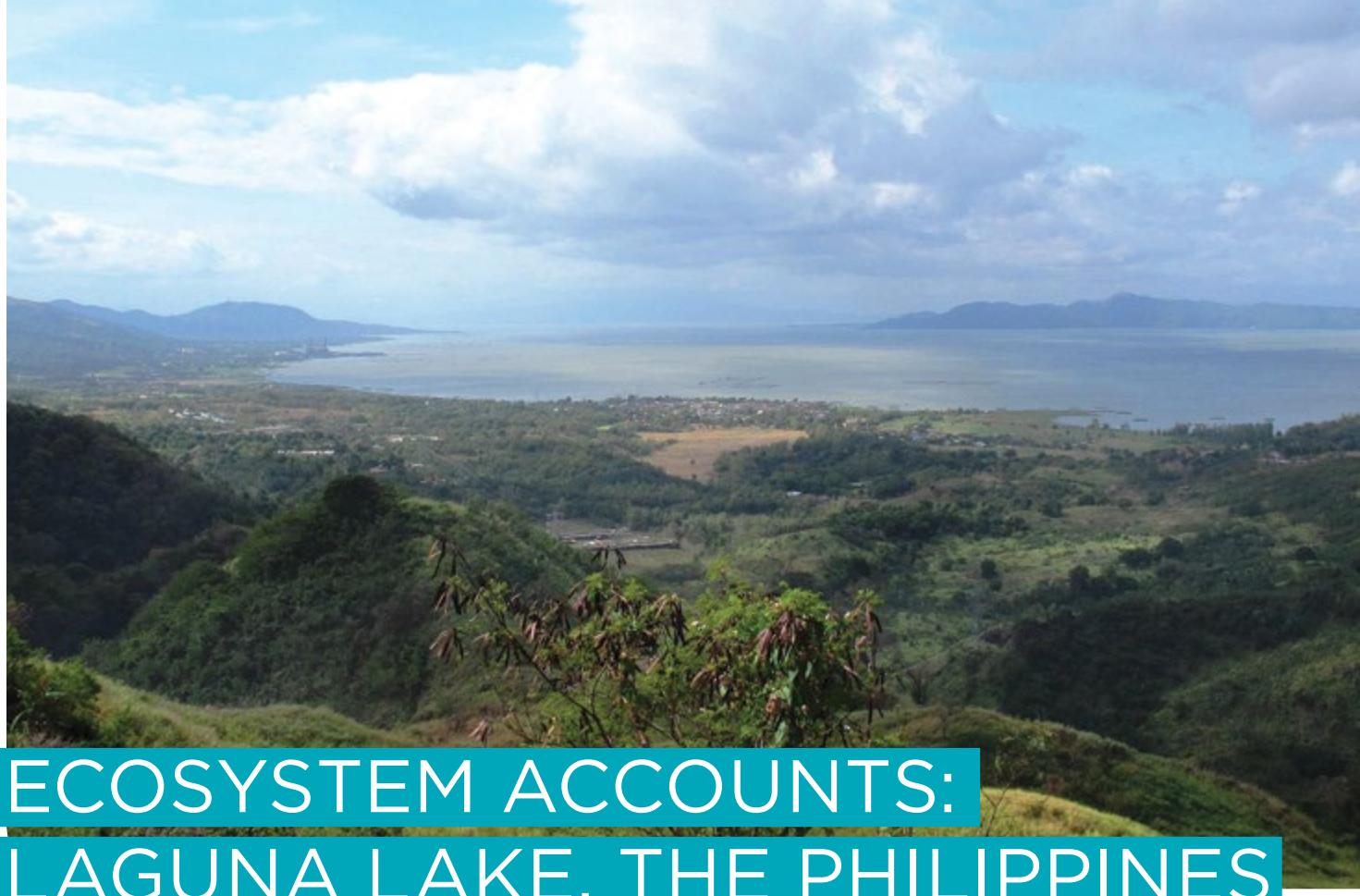
OF BOTSWANA'S GDP COMES FROM THE MINING SECTOR. THE MINING SECTOR'S DEMAND FOR WATER IS EXPECTED TO DOUBLE IN THE NEXT 15 YEARS.

3.7%

OF GDP IN COLOMBIA IS LOST BECAUSE OF ENVIRONMENTAL DEGRADATION.

80%

OF WOOD USED IN MADAGASCAR IS FOR ENERGY CONSUMPTION.



ECOSYSTEM ACCOUNTS: LAGUNA LAKE, THE PHILIPPINES

The Laguna Lake Basin is home to one-fifth of the population of the Philippines. Residents in the area rely on the lake for water, food, energy, recreation, and livelihoods. Almost 19 percent of the GDP of the country comes from this region. The lake's ecosystem is at risk, however, and increased rainfall has caused several floods.

Ecosystem accounts in Laguna de Bay focus on the key policy issues of pollution and sedimentation. These two issues are inextricably linked with flood control, water quality, regulation of land use, control of soil erosion in upstream rivers, water demand in Metro Manila, better drainage of highly urbanized areas, and habitat for capture and culture fisheries. Physical and monetary accounts of the ecosystem and its services will provide information for evidence-based decision making and will help the Laguna Lake Development Authority (LLDA) fulfill its mandate of improving or maintaining lake functions to sustain benefits for the area's rapidly expanding population.

The Phil-WAVES Technical Working Group (TWG) for Laguna Lake is developing both terrestrial and aquatic accounts based initially on existing data. At this juncture, the terrestrial accounts include land, soil erosion control, carbon storage and sequestration, and timber. The aquatic accounts include water supply that links water quantity and quality, fisheries, and flood retention capacity.

The TWG produced a land cover change matrix for the basin that shows changes in land cover between 2003 and 2010, years for which land cover maps for the entire country were already available. The European Space Agency supplied data on vegetation cover that were useful in determining sedimentation loads. Table 1 shows a significant decline of forest cover in the critical watershed and the rapid increase of urban areas, particularly in the western section of the lake basin. Areas for

Table 1. Land cover change in Laguna de Bay between 2003 and 2010

Land Cover	Area in hectares 2003	Area in hectares 2010	Change in hectares (+,-)
Annual Crop	96,578	57,366	-40.6
Built-up	48,390	88,940	83.8
Closed forest	7,844	5,264	-32.9
Fallow	26	-	-100
Fishpond	-	76	-
Grassland	9,563	19,868	107.8
Inland Water	89,946	96,168	6.9
Mangrove forest	94	1	-98.9
Marshland	-	4	-
Open forest	41,770	40,704	-2.6
Open/ Barren	1,152	703	-39
Perennial Crop	84,674	67,058	-20.8
Shrubs	89,621	77,892	-13.1
Wooded grassland	21,734	37,348	71.8

Areas for annual and perennial crops have declined from 24 to 13 percent and from 15 to 11 percent, respectively... and the built-up areas have increased from 8 to 17 percent of the total area in the lake region.

annual and perennial crops have declined from 24 to 13 percent and from 15 to 11 percent, respectively, and the built-up areas have increased from 8 to 17 percent of the total area in the lake region. Such changes increased the potential of hazards and damage due to flooding, which has become more frequent in recent years in the region, thereby increasing waste discharges and hence pollution.

For the aquatic ecosystem accounts, the TWG analyzed data on water depth from 1997 and 2014 to determine changes in the lake's flood retention capacity. The lake depth, contrary to expectations, increased between 1997 and 2014. At the same time, sedimentation is decreasing the areal surface of the lake, with most of the sediments deposited close to the points where various rivers enter the lake. These changes—in combination with the increasing population density on the lake shores—are affecting the water retention capacity of the lake. Pending the final analyses, early indications are that this capacity has decreased in the last two decades, increasing the impacts of potential future flood events.

Flooding in the Laguna de Bay region has become a perennial problem, especially during recurrent typhoons. When typhoon Ketsana (Ondoy) happened in 2009, the Laguna Lake Development Authority (LLDA) recorded around 13.8 meters as the level of the lake—the highest of the last few decades. The flood retention capacity in the lake has been assessed as 11.5–12.5 meters, with 11.5 meters being the average water level at the beginning of the rainy season and 12.5 meters the level where the first houses become flooded. Analysis of water depth measurements shows that the storage volume between 11.5 and 12.5 meters has decreased, thereby increasing flood risks. The cost of flood damage to households and infrastructure is currently the basis for calculating the value of flood retention services provided by the lake.

Sedimentation analysis using modeling software developed by CSIRO of Australia shows that 2,500–2,800 kt a year of total suspended sediment are discharged to the lake. The ecosystem service "erosion control" was defined as the amount of sedimentation avoided because of the vegetation cover. It was calculated by comparing the erosion and sedimentation rates in the lake that would have taken place without vegetation cover with the actual erosion and sedimentation rates. The service amounted to 7,000–8,000 kt a year of sediments avoided.

FIGURE 1* TOTAL SEDIMENTS GENERATED (in tons/ha/year) in Marikina sub-basin

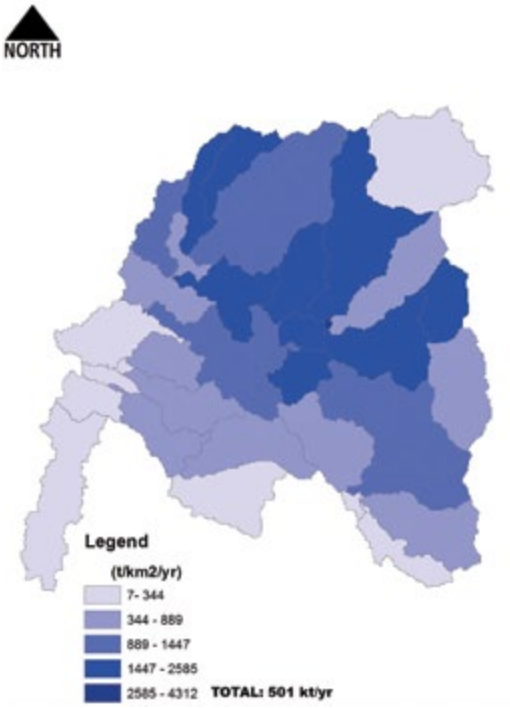
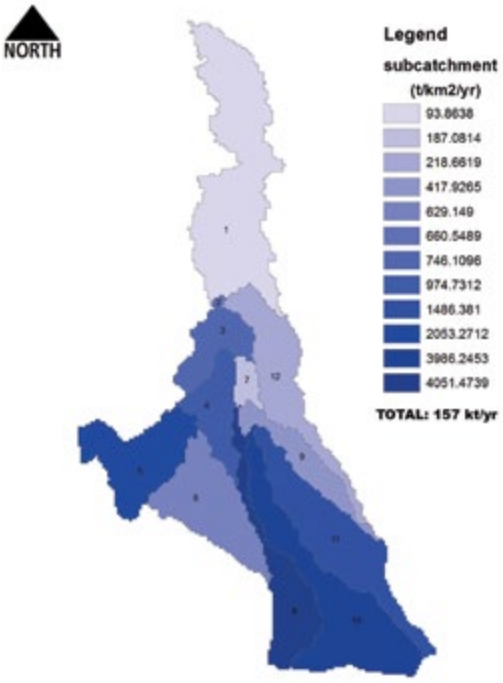


FIGURE 2 TOTAL SEDIMENTS GENERATED (in kt/ha/year) in Sta. Cruz sub-basin



Furthermore, the modeling identified zones that are particularly important as a source of sediments. Examples of this are shown in Figures 1 and 2. This information allows the LLDA to identify the most important areas for protection and restoration of vegetation cover in order to avoid sedimentation and a subsequent decline in the flood retention service of the lake.

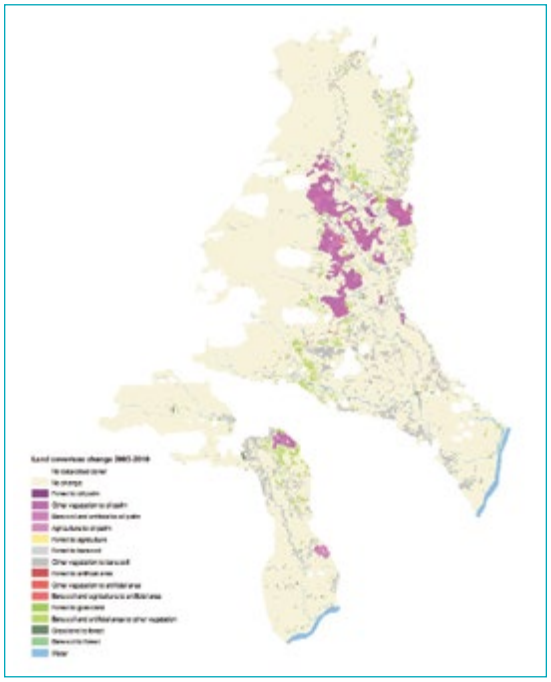
The information on physical accounts of the lake's ecosystem and its services can also be used to generate values of damages under different flood and resource use scenarios, which can contribute to climate change adaptation and local medium- and long-term development planning and sustainable management. For instance, the model can be used to calculate the effects of the planned construction of a dike in the southwestern part of Laguna Lake in terms of an increase in flood risks in other parts due to a reduction in flood retention capacity.

The Panguil River Eco-Park is an eco-tourism resort operated by the local government of Panguil, in the Laguna Lake region.

*Note: We calculate the erosion control service generated by natural and semi-natural ecosystems, in particular closed forest, open forest, shrubs and wooded grasslands (and excluding the erosion control service from perennial and annual croplands). This is because in particular the natural and semi-natural ecosystems are subject to degradation.

ECOSYSTEM ACCOUNTS: SOUTHERN PALAWAN

Southern Palawan is one of the most biodiverse areas of the Philippines, with important forest and marine resources. This island province is home to a number of indigenous tribes and three large protected areas. There is also great potential for ecotourism, agriculture, and mining. Palawan is going through rapid land use change. Agriculture is expanding at the expense of the forests, while mining and fishing have increased—altering Palawan's ecosystems.



The Southern Palawan ecosystem account was developed by a Technical Working Group led by the Department of Environment and Natural Resources and the Palawan Council for Sustainable Development. Some key messages are emerging from these preliminary accounts.

First, there is a need to do a better job monitoring land cover change and enforcing land use regulations. The TWG looked at ecosystem assets under different tenure and ownership situations within the Pulot watershed, which represents 5 percent of Southern Palawan's land area, in order to understand the drivers behind land use change.

Table 2. Land cover change in Southern Palawan			
Land Cover	Land cover, 2003 (hectares)	Land cover, 2010 (hectares)	Land cover, 2014 (hectares)
Annual Crop	52,869	47,950	50,340
Built-up	709	6,966	7,425
Closed Forest	130,121	28,025	33,206
Fishpond	720	1440	407
Inland Water	193	2,696	3,653
Mangrove Forest	16,297	17,020	17,054
Open Forest, (Wooded) Grasslands, Shrubs, Marshlands	305 ,086	334,713	322,817
Open/Barren	1,383	961	1761
Perennial Crop	46,130	113,735	115,845
Total	553,508	553,508	553,508

Source: NAMRIA analysis as part of the Ecosystem Account for Southern Palawan (in preparation).

Significant changes in land use in Southern Palawan in the period 2003-14 included a rapid expansion of oil palm (see Table 2). Currently, most of the oil palm in Palawan is grown in Pulot and adjacent watersheds, driven by the operation of an oil palm mill in 2011. A field survey and analysis of land cover change found that different land cover types have been converted to oil palm—bare soil, cropland, shrubland/open forest, and forest. Part of the conversion has taken place illegally, in particular in forest areas and protected areas and on steep slopes.

Second, the account shows a strong decline in coral reef ecosystems. There has also been a decline in mangrove ecosystems, but seagrass meadows are in a relatively steady condition. There is an urgent need to analyze the causes for this decline, given the rate of degradation in the last decade and the importance of coral reefs for fisheries and tourism in Palawan.

The decline since 2001 is striking (see Figure 3). The potential causes of coral reef decline include increased sedimentation, which is potentially due to deforestation or the establishment of a mine upstream in Pulot river; runoff of heavy metals from deposited ores stored close to the shore; and pressures from fisheries. Further analysis is needed to clarify which factor is the key driver in the

FIGURE 3. ECOSYSTEM CONDITION AND NUMBER OF REEF SITES BY CATEGORY, MUNICIPALITY OF S ESPANOLA, PALAWAN, PHILIPPINES, 2001 AND 2011

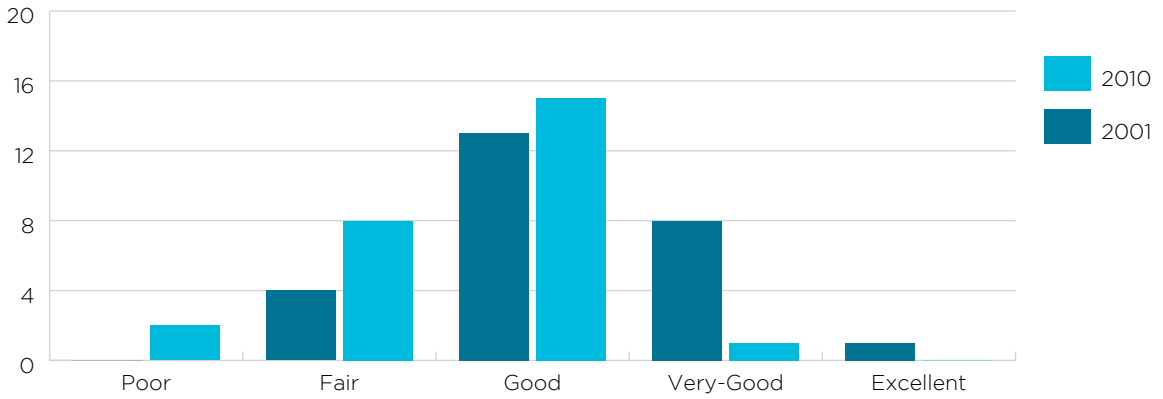


Table 3. Monetary value of provisioning services in Pulot Watershed, 2013

Land Cover Units	Area (in ha)	Average Yield (ton/ha)	Farm-gate price (pesos/ kg)	Total production costs (pesos/kg)	Resource rent (pesos/ha/ year)	Resource rent in watershed (million pesos/year)
Rice Paddy	569	3.9	14	12	7,800	4.4
Coconut	1,454	1.3	11	8.3	3,575	5.2
Oil Palm[1]	3,324	3.0				

[1] Including productive and immature oil palm plantations.

degradation of coral reefs and to provide the basis for mitigation measures.

Third, the account shows that the deforestation rate in Palawan seems to have been reduced and potentially reversed in the period 2010–2014. More analysis, backed up by field verification, is needed to fully confirm the results, but the land account produced by the National Mapping and Resource Information Authority (NAMRIA), for the whole island of Palawan shows that forest loss, which was high in 2003-10, changed into a small net gain in areas covered with dense forest in 2010–2014. The area covered with closed forests increased by around 5,000 ha, or about 1 percent of the land surface area of Southern Palawan, resulting in decreased sedimentation. This could indicate successful implementation of a logging ban in the island in this period.

Fourth, the account points to the importance of the ecosystem services provided by the forest of Southern Palawan (see Table 3). They constitute a vital carbon sink and are crucial for controlling erosion and sedimentation rates downstream. The latter two aspects will be included in the final ecosystem account. In the next phase of the project, the water regulation service and the role of forests in sustaining downstream irrigated agriculture will also be analyzed.

Fisheries are an important source of employment and protein in the Philippines, especially in rural area.

WATER AND MINERAL ACCOUNTS: BOTSWANA

Botswana is the world's largest producer of diamonds by value. Minerals like copper, gold, nickel, coal, and soda ash dominate the national economy.

What is the relationship between mining and water use? And what impact will mining have on water resources in the future, especially with the possible expansion of coal mining? Mineral accounts produced for WAVES and water accounts completed in 2014 by the Department of Water Affairs shed light on how the mining sector uses water and informs the answers to these questions.

Mining, mainly diamonds, contributes over one-third of the country's GDP, with roughly 50 percent of state revenues coming from the mining industry. Although the government is keen to diversify the economy, the sector remains important for future economic growth.

The mining sector accounts for 10–15 percent of total water use in Botswana (see Figure 4), with three-quarters of this amount being used for diamond production. As new mines open and there is a reduction in diamond production, this figure may change.

Coal mining has been a relatively minor user of water in the past, but it is expected to expand significantly in the future as part of an energy security and economic diversification strategy. The development of coal mining will place additional pressure on already scarce water resources.

The water accounts have generated data on how much each economic sector contributes to GDP, employment, and total water use.

Figure 5 shows that the mining sector's shares of GDP and water use are fairly similar. However, the sector contributes much less to creating jobs due to its capital-intensive nature. The agriculture sector uses over 40 percent of water and contributes less than 3 percent to GDP. So mining is doing much better from a water productivity perspective. In contrast, the service sectors use relatively little water and generate higher shares of GDP and employment.

The mineral accounts provide data on resource rents for diamonds, copper/nickel, and coal (see Figure 6). Combining these numbers with those for water use provides figures for resource rents by cubic meter of water in the three large mining subsectors. For the period 1994–2012, diamonds on average generated almost four times as much per cubic meter as copper/nickel did.

Water accounts show that diamond, copper/nickel, and coal mines use mostly groundwater, and this raises concerns that some large mines are depleting this vital resource. There have also been concerns expressed about water pollution and the impact of effluent and tailing dams on water quality. Monitoring water quality and a water pollution treatment program are therefore critical wherever there is the possibility of water pollution.

FIGURE 4. TREND IN WATER USE IN THE MINING SECTOR AND THE DIAMOND SUB-SECTOR (000 M3)

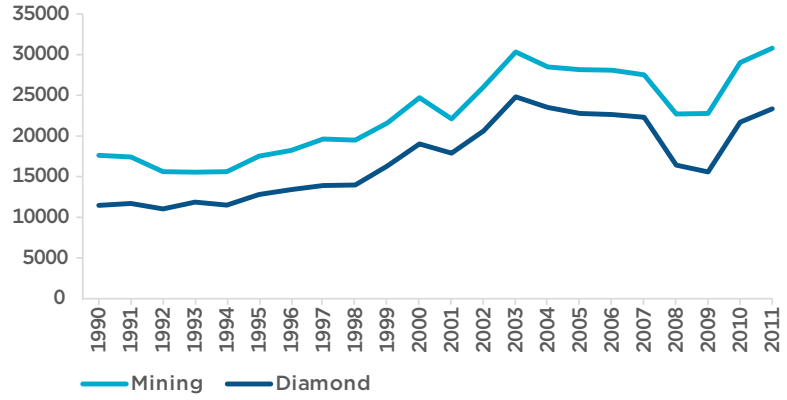


FIGURE 5. SECTOR SHARES IN WATER USE, GDP AND FORMAL EMPLOYMENT 2011/2012

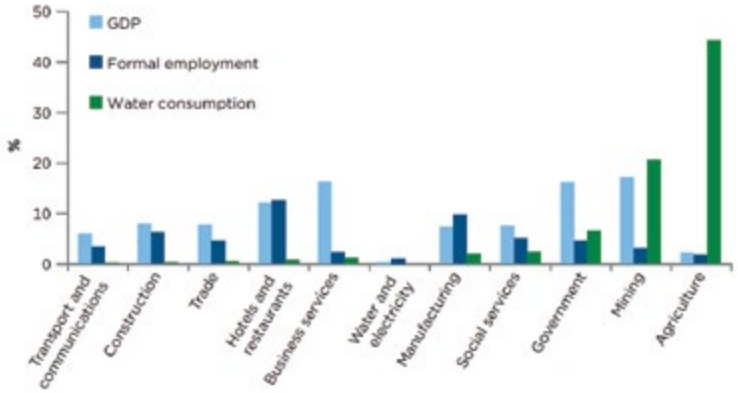
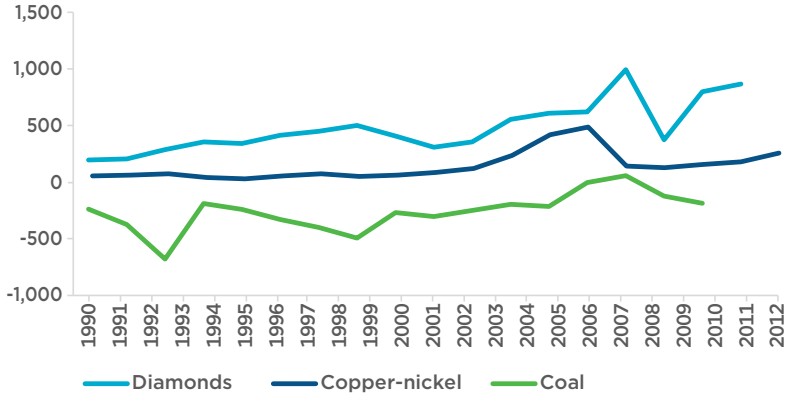


FIGURE 6. TREND IN RESOURCE RENT PER M3 FOR THREE MINERALS (P/M3; CONSTANT PRICES PULA 2006)



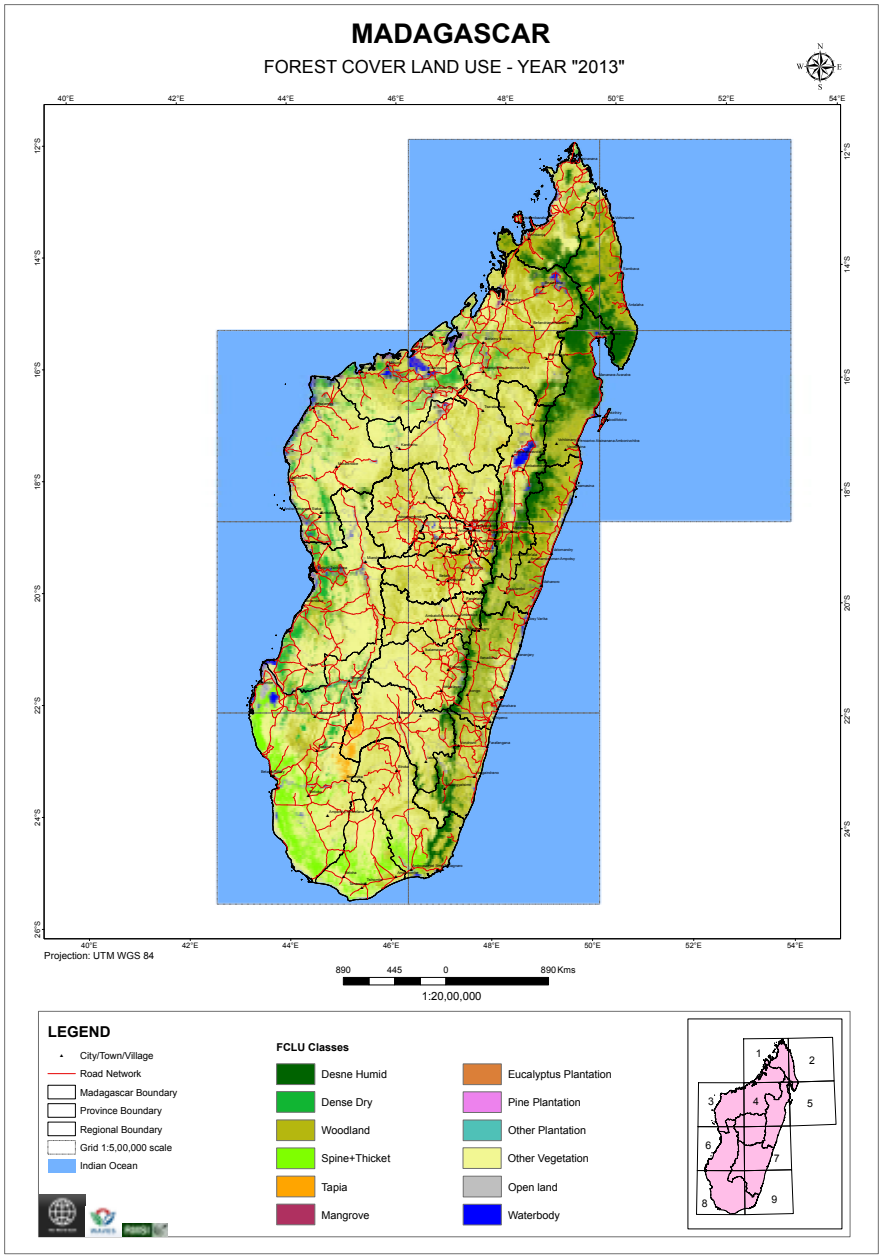
MADAGASCAR FOREST ACCOUNTS

Madagascar relies heavily on timber resources for energy and construction, putting significant pressure on the country's forests. It is estimated that the island lost half of its forest cover between 1950 and 2000 as a result of land clearing for agriculture. These pressures are expected to increase, as the country's population is due to double by 2040. Energy needs are the largest sources of domestic wood use, amounting to an estimated 80 percent of consumption.

WAVES Madagascar is developing physical and monetary forest stock accounts for both protected and non-protected forests. These accounts will help the government gain a better understanding of existing timber stocks in terms of surface area and volume, yearly formal and informal timber consumption, and the monetary value of different forest types. Such accounts will inform the development of a policy for sustainable exploitation of timber resources as well as a household energy policy that will ensure that the long-term timber needs of the population are met.

To date, Madagascar has collected data on the volume and surface areas of timber resources for 2005, 2010, and 2013 for protected and non-protected areas and for each forest type. Twelve categories of land cover have been specified:

FIGURE 7. PROPORTION OF FOREST COVER PER FOREST TYPE (2013)



dense dry forests, dense humid forests, spiny forest, mangrove, woodland, tapia, pine plantation, eucalyptus plantation, other plantation, other vegetation, open land, and water body. Figure 7 shows the proportions of various types of forest cover.

In 2013, woodlands accounted for the largest portion of forest cover, amounting to 63 percent, followed by dense humid forests (19 percent), by dense dry forests and spiny forests (8 percent each), and by mangroves, tapia, pine plantations, eucalyptus plantations, and other plantations, which cover less than 1 percent of forest cover (see Map).

Dense dry forests suffered the greatest proportionate loss in cover, being reduced by 42 percent between 2005 and 2013.

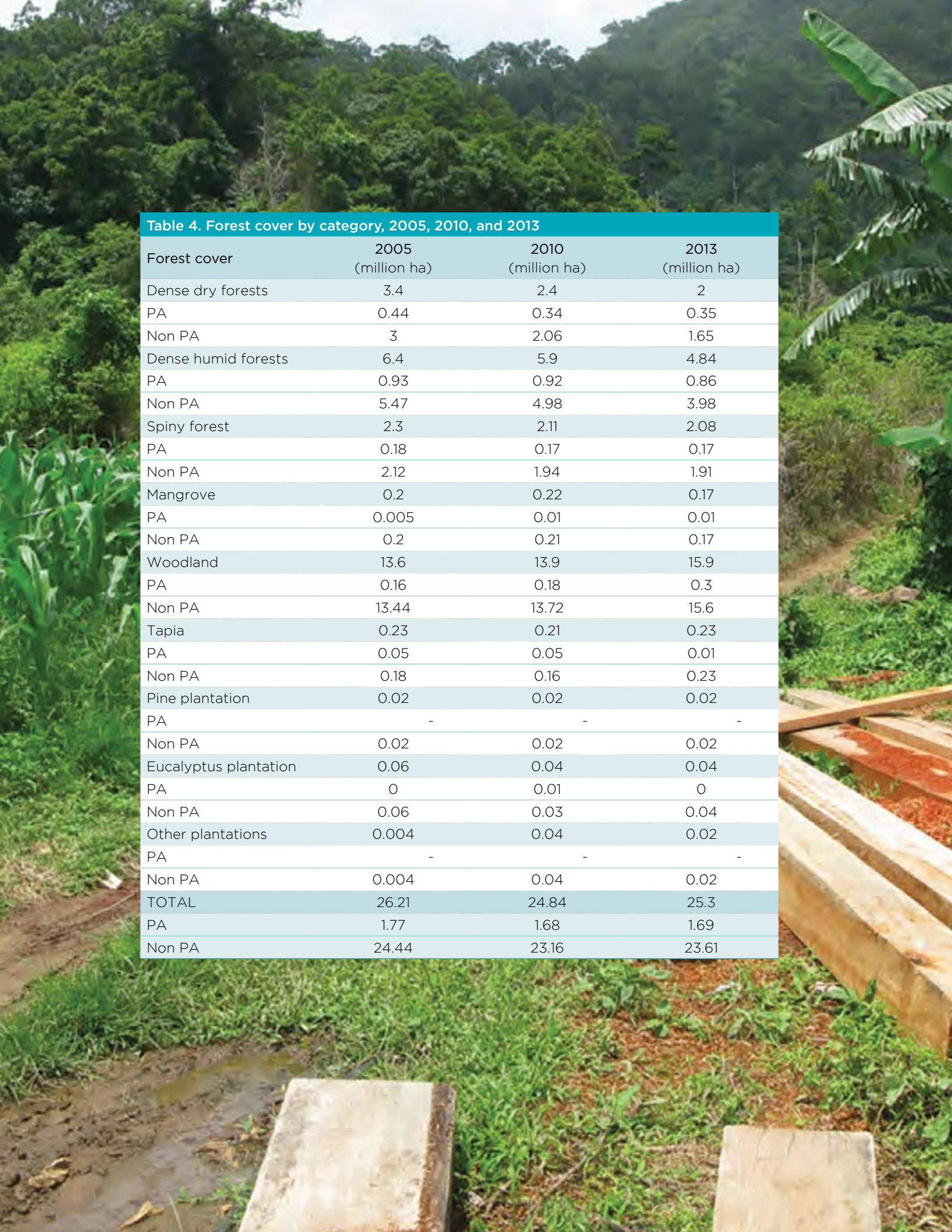


Table 4. Forest cover by category, 2005, 2010, and 2013

Forest cover	2005 (million ha)	2010 (million ha)	2013 (million ha)
Dense dry forests	3.4	2.4	2
PA	0.44	0.34	0.35
Non PA	3	2.06	1.65
Dense humid forests	6.4	5.9	4.84
PA	0.93	0.92	0.86
Non PA	5.47	4.98	3.98
Spiny forest	2.3	2.11	2.08
PA	0.18	0.17	0.17
Non PA	2.12	1.94	1.91
Mangrove	0.2	0.22	0.17
PA	0.005	0.01	0.01
Non PA	0.2	0.21	0.17
Woodland	13.6	13.9	15.9
PA	0.16	0.18	0.3
Non PA	13.44	13.72	15.6
Tapia	0.23	0.21	0.23
PA	0.05	0.05	0.01
Non PA	0.18	0.16	0.23
Pine plantation	0.02	0.02	0.02
PA	-	-	-
Non PA	0.02	0.02	0.02
Eucalyptus plantation	0.06	0.04	0.04
PA	0	0.01	0
Non PA	0.06	0.03	0.04
Other plantations	0.004	0.04	0.02
PA	-	-	-
Non PA	0.004	0.04	0.02
TOTAL	26.21	24.84	25.3
PA	1.77	1.68	1.69
Non PA	24.44	23.16	23.61

Table 5. Timber volume per forest category, 2005, 2010, and 2013			
Timber volume	2005	2010	2013
		(million cubic meters)	
Dense dry forests	465	425	342
Dense humid forests	2,250	1,754	1,444
Spiny forest	115.2	151.0	140
Woodland	1,700	1,794	1,972
Tapia	8.4	9.2	8.1
Pine plantation	3	2.6	2.1
Eucalyptus plantation	8.5	5.8	4.8
Other plantations	5.2	4.6	2.7
TOTAL	**4,555**	**4,146**	**3,916**

As shown in Table 4, in 2013 forest cover totaled 25 million hectares, with over 23 million hectares within non-protected areas. Dense dry forests suffered the greatest proportionate loss in cover, being reduced by 42 percent between 2005 and 2013. In absolute terms, dense humid forests were reduced the most, with 1.56 million hectares lost between 2005 and 2013. Woodlands experienced a large increase between 2010 and 2013, estimated at 14 percent—in particular, within the protected area networks, where they increased by 65 percent. Plantations, including pine, eucalyptus, and other trees, amount to only 80,000 hectares in total, representing 0.31 percent of forest cover.

Timber volume varies according to the forest type and geographic location. The highest volume of timber per hectare can be found in dense humid forest (297 cubic meters per hectare on average), followed by dense dry forests (174 cubic meters per hectare) and woodlands (123 cubic meters per hectare). Preliminary results indicate that total timber volume decreased between 2005 and 2013 for dense dry and dense humid forests, by 26 and 54 percent respectively (see Table 5). Conversely, spiny forests increased in volume between 2005 and 2013. The highest volume of timber can be found in woodlands, peaking in 2013. These data will be further separated out for protected and non-protected areas.

2. A THRIVING GLOBAL PARTNERSHIP

The WAVES 2014 Partnership Meeting was held at the World Bank headquarters in Washington, D.C. and was attended by over 160 people from 22 countries, and included representatives from dozens of international organizations, technical experts, donors, UN agencies, civil society, and think tanks.

The global interest and commitment seen at Rio+20 on natural capital accounting is now translating into action on the ground. There has been a mushrooming of initiatives on NCA. Over the last year, more of our partners such as UNEP, UNSD, and UNDP and bilateral donors like GIZ and AFD have launched initiatives to implement natural capital accounting. A few middle-income countries have stepped up their own efforts, including Brazil, Chile, Ecuador, Malaysia, Mexico, and Uruguay. And there have been several conversations to find synergies with private sector initiatives.

In this new emerging global landscape, WAVES found ways to complement some of these initiatives. In addition to deepening work in the eight core implementing countries, WAVES leveraged work done by partners to engage many of the 70 countries that had signed on to the 50:50 NCA initiative at Rio+20.

In training workshops in Botswana, Morocco, Rwanda, Turkey, and the Philippines, we have worked with ABS, the UK, USGS, and UNECE among others. Several international agencies and statistics departments are lending expertise to develop a set of trainings on accounts, particularly on methods of ecosystem accounting and valuation.

WAVES engaged with other partner countries—reviewing DFID-funded forest accounts in Vietnam, for example, developing a policy note on green growth for Bhutan, and providing expertise in a wealth accounting workshop hosted by Morocco's Economic, Social and Environmental Council. A presentation was made to Uruguay's Minister of Livestock, Agriculture, and Fisheries in the context of sustainable agricultural practices and how accounts could be a tool in monitoring soil health.

WAVES 2014 Partnership Meeting Went "Live," Setting the Stage for a Dynamic Year

The Fourth Annual WAVES Partnership Meeting, held May 14–15, 2014, at the World Bank headquarters in Washington, DC, was attended by over 160 people from 22 countries and included representatives from dozens of international organizations, donors, U.N. agencies, civil society, and think tanks as well as technical experts. The reach of the meeting went further than the boundaries of the building: a global webcast discussion entitled "Going #BeyondGDP: Making Natural Capital Count for Development" kicked off the meeting and engaged over 1.2 million people on social media.

A strong message was apparent over the course of the meeting: natural capital accounting is now more real for several countries, informing new policy and long-term development planning.

WORKING WITH PARTNERS

Mr. Kumar Kylychev, Chief, Environment and Energy Programme, UNDP Kyrgyzstan, leading a group discussion at the National Capital Accounting Regional Workshop for Europe and Central Asia in Istanbul, March 9-11, 2015

In May 2014, Turkey became the 70th country to join WAVES as a participating partner in order to help meet sustainable development goals, maintain the country's natural resource wealth, and improve statistical systems. The demand from countries has continued to grow in the last year, and WAVES has worked with partners to ensure that the work on NCA grows beyond the core implementers to a critical mass of countries.

Some examples of our collaborations and alliances with our partners over the past year include:

- The **Australian Bureau of Statistics** continued to collaborate with WAVES, providing technical support to the Philippines, Botswana, and Indonesia. They provided technical support to the first WAVES Knowledge Exchange Workshop on Ecosystem Accounting in the Philippines this year.
- An MoU was signed with the **Ministry of Foreign Affairs in the Netherlands** this year for technical collaboration for the next three years. They are supporting implementation in Rwanda as well as setting up a help-desk to answer conceptual questions on NCA. They are also working on compiling the use of NCA in policy analysis in the Netherlands.

- The **European Space Agency** is conducting demonstration trials for Southern Palawan and the Laguna Lake basin for WAVES–Philippines. Staff have worked on land cover and tree density maps for the Laguna Lake basin and a land cover change map for the Pulot watershed in Southern Palawan.

- **Agence Francaise de Developpement** is supporting three countries in Africa on ecosystem accounting. WAVES will be participating in meetings to review their progress.

- WAVES is working with the **Swedish-sponsored Ecosystem Service Accounting for Development** (ESAforD) program, a four-year research program that will work in eight countries to enhance the methodology for ecosystem accounts. Along with WAVES, ESAforD is a collaboration between the Swedish Environmental Protection Agency and the seven Environment for Development Centers in China, Chile, Costa Rica, Ethiopia, Kenya, South Africa, and Tanzania. It is funded by the Swedish International Development Cooperation.

- WAVES has increased collaboration with U.N. Regional Offices. Several workshops were organized with **the Economic Commission for Latin America and the Caribbean (ECLAC), the United Nations Economic Commission for Africa (UNECA), and UNECE.** Discussions are ongoing with several others.

Emerging collaborations include:

- **Conservation International** (CI) is managing the secretariat for the Gaborone Declaration. As a follow-up to the summit in 2012, they are now reaching out to 10 signatory countries in Africa to start programs on NCA. Eventually, it is expected to expand to a regional program. CI and WAVES are discussing a joint training workshop in late 2015.

- **UNSD** has a program on doing scoping studies for ecosystem accounting in seven countries, including Indonesia, a core WAVES country.

The Ministry of Development of Turkey is looking for the opportunity to learn from other countries' experiences in the application of Natural Capital Accounting (NCA) methods in sustainable development planning and decision making, and to eventually be able to share the knowledge learned in the process of moving to NCA.

Cevdet Yilmaz,
Minister of Development, Turkey

TRAINING WORKSHOPS AND BUILDING COMMUNITIES OF PRACTICE

A working group session at a training on ecosystem accounting in the Philippines in September 2014.

The WAVES Partnership has had great success this year furthering one of our key objectives: establishing a global platform for training and knowledge sharing. With the cooperation of host-country governments, WAVES held first-of-their-kind global knowledge exchange workshops on both forest and ecosystem accounts, as well as regional workshops on NCA for Latin America and the Europe and Central Asia Region. These workshops are key to developing strong communities of practice, fostering South-South learning, and strengthening the breadth and depth of work on NCA around the globe.

LATIN AMERICA AND THE CARIBBEAN COMMUNITY OF PRACTICE

Costa Rica, December 17–19, 2014
Regional Workshop for Latin America and the Caribbean on Natural Capital Accounting, with a Focus on Water Accounts

This large event kicked off the first regional community of practice on NCA in Latin America. It was co-organized by WAVES and Costa Rica's Central Bank (BCCR). It brought together nearly 40 participants from the three WAVES core implementing countries in Latin America (Colombia, Costa Rica, and Guatemala) and other WAVES partner countries (Brazil, Chile, Ecuador, Mexico, Peru, and Uruguay) as well as the United Nations Economic Commission for Latin America and the Caribbean.

The objectives of the event were to gather experts on NCA from the region to present the progress and efforts made in each country, to discuss ways to strengthen and broaden those efforts, and to examine water accounts and their role in influencing development policy throughout the region. Peer-to-peer learning was led by a water accounts expert from Mexico.

Participants included both data users for development planning and policy making (ministries of development planning, environment, and other key sectors) and data providers (national statistical offices, central banks, and water agencies). The workshop was divided into two parts: the first day focused on the application of NCA and building a regional Community of Practice. The final two days were dedicated to in-depth, hands-on training on how to build water accounts.

FOREST ACCOUNTING

Washington, DC, United States, May 11–13, 2014
Global Workshop on Forest Accounting

WAVES country partners consider forest ecosystems as important contributors to rural development, poverty alleviation, and food security, as they are sources of wood, energy, and food and they also provide important ecosystem services such as biodiversity conservation, soil and water protection, recreation, and carbon storage.

Several WAVES core implementing countries—Colombia, Costa Rica, Guatemala, and the Philippines—are constructing forest accounts at national and regional levels. Ahead of our annual partnership meeting, we held the first in a series of workshops over the next few years to provide technical training for countries at different stages in the development of forest accounts.

More than 80 participants from 20 WAVES partner countries attended the WAVES Global Workshop on Forest Accounting.

Through expert panels, dynamic group exercises, and presentations of how forest accounts have informed national policies, workshop participants left better prepared to return to their home countries to construct and implement forest accounts. Frances Seymour, Senior Fellow, Center for Global Development, delivered the keynote address: Key Policy Issues and Challenges for Forests. In her presentation, Seymour stressed the need to make the economic costs and benefits of forest loss more explicit.

Organizations that attended the workshop included Forest Trends, Conservation International, World Resources Institute (WRI), the Center for Global Development, and the International Tropical Timber Organization.

More than 100 delegates from nine countries gathered in the Philippines for the first systematic training by and for developing countries on ecosystem accounting.

ECOSYSTEM ACCOUNTING

Philippines, February 23–27, 2015
WAVES Knowledge Exchange Workshop on Ecosystem Accounting,

As more countries join the WAVES Global Partnership, there is increasing interest in ecosystem accounting as a way of making well-informed development plans that will ensure that growth is more sustainable over the long run. However, since there is a wide range of approaches to ecosystem accounting, it is critical to build a common understanding and to share lessons learned from the countries piloting ecosystem accounting, most notably the Philippines, India, Guatemala, and Australia.

The first Knowledge Exchange Workshop on Ecosystem Accounting was co-hosted by WAVES and the Government of the Philippines and was an example of South-South learning. It was attended by more than 60 delegates from all eight WAVES core implementing countries and India. Over five days participants learned, brainstormed, collaborated, and shared best practices and experiences on ecosystem accounting. At the end of the workshop, the participants came away with a better understanding of how they might do ecosystem accounting in their country

Participants at the Knowledge Exchange Workshop on Ecosystem Accounting spent a day in the field, including a trip to the Putatan Water Treatment Plant where they were walked through the water filtration process.

WAVES Program Manager Glenn-Marie Lange called the event historic: *"This is the first time that there will be this kind of systematic training by and for developing countries on ecosystem accounting."*

Europe and Central Asia Regional Workshop
Turkey, March 9–11, 2015
Regional Workshop on Natural Capital Accounting for Europe and Central Asia

A three-day regional workshop on NCA was held in Istanbul to introduce more than 50 experts from 12 countries to the rationale for and tools to better monitor, manage, and enhance the productive use of natural assets in their respective countries. The methodology for NCA was presented at the workshop and illustrated with examples from water and forest accounts. Turkey played an important leadership role by sharing its experience with accounting for water and forests.

It brought together experts from Albania, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Tajikistan, Turkey, Turkmenistan, and Uzbekistan to stimulate discussion among countries on next steps for incorporating NCA into policy and development planning in their respective countries.

The workshop was jointly organized by WAVES, Turkey's Ministry of Development, and the Turkish Statistical Institute, in cooperation with Statistics Netherlands, the U.N. Economic Commission for Europe, GIZ, and UNDP.

"Natural capital, and especially renewable natural capital… needs to be seen as the most central element in long-term sustainable development. Not one of many considerations, not a side-show, but the most important central component.""

Russ Mittermeier,
Executive Vice Chair, Conservation International

WAVES ON THE GLOBAL STAGE

At the CBD COP 12 in Pyeongchang, Korea, NCA emerged as a tool that changes the way biodiversity is positioned in the development agenda.

The WAVES team and senior World Bank management participated in many events around the world throughout 2014, presenting on the relevance of NCA to policy making and sharing experience from WAVES countries.

Durban, South Africa, May 21–23, 2014
Annual Meeting of the Poverty and Environment Partnership

The Poverty and Environment Partnership is an informal network of development professionals including agencies like WRI and WWF. At this meeting, sponsored by the EU and South Africa, WAVES presented on the contribution of NCA to the Green Economy.

Washington, DC, United States, June 16–17, 2014
"Our Oceans" Conference

Organized by the U.S. State Department, the WAVES Program Manager was on a panel entitled "Ocean Valuation and Accounting." WAVES was also invited to present at the Swedish Embassy in Washington, DC, on the Blue Economy.

New York, United States, June 25–27, 2014
Annual Meeting of the U.N. Committee of Experts on Environmental Economic Accounting

WAVES participated in the Annual Meeting that provides high-level guidance to the development and implementation of the System of Environmental-Economic Accounting (SEEA).

Turkey, June 28–July 2, 2014
5th World Conference of Environmental and Resource Economists

WAVES organized a presentation on policy applications of NCA and how they could be useful to Turkey.

New York, United States, July 7–10, 2014
Training-of-Trainers Course on the SEEA-Central Framework (Seminar week)

Members of the WAVES secretariat participated in this event which was jointly arranged by GIZ on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) and UNSD.

"We have over a thousand NGO and government members who are deeply worried about how nature is being depleted in the name of economic activity. Just saying that nature has a dollar value is not enough—nature has many values that are amenable to putting dollar numbers to. But we need to be talking the language that everyone uses when discussing economic activity."

Frank Hawkins
Chief executive officer of the U.S. office of the International Union for Conservation of Nature, at the Rockefeller/ IUCN Live-Chat

Bellagio, Italy, July 31, 2014
Rockefeller/IUCN Natural Capital Live Chat

A senior World Bank representative joined a group of cross-sector experts from the worlds of business, finance, foundations, nongovernmental organizations (NGOs), and institutions brought together by the Rockefeller Foundation and the International Union for Conservation of Nature (IUCN) to come up with suggestions for solutions on how to encourage the financial markets to become champions of nature. A text-based live chat was convened by the Guardian Newspaper.

Pyeongchang, Republic of Korea, October 6–17, 2014
12th Meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 12)

WAVES co-organized a side event at the CBD COP 12, "Transformative Initiatives in Biodiversity Mainstreaming and Financing" along with UNDP's Biodiversity Finance Initiative (BIOFIN). NCA was highlighted as a tool for managing biodiversity-rich areas in an economically and ecologically sustainable manner, contributing to protecting biodiversity.

NCA HIGHLIGHTED AT UN FORUM ON SUSTAINABLE DEVELOPMENT GOALS

New York, June 30–July 8, 2014
NCA's Role in the Post-2015 Development Agenda

The World Bank Group had an opportunity to present at the United Nations High-level Political Forum (HLPF) on Sustainable Development's second official meeting, with more than 80 member states and 20+ UN agencies in the audience. Valerie Hickey, Practice Manager for Environment and Natural Resources at the World Bank, spoke about how natural capital accounting can contribute to the post-2015 development agenda by "moving the world beyond a GDP matrix to focus on all assets that a country needs for long-term growth and well-being" and emphasized the role of NCA in making the post-2015 goals monitorable and achievable.

"NCA is one tool that can help make sure we are not making progress against one SDG by liquidating another," said Hickey.

This was the second meeting of the forum since its inception at the Rio+20 conference in 2012, and its task is to ensure that sustainability is front and center to the discussion on the post-2015 development agenda. The HLPF is the main United Nations platform that is pressing for action on sustainable development at the top political level. The forum will meet every four years at the level of Heads of State and Government under the auspices of the General Assembly, and every year under the auspices of the Economic and Social Council.

"At Sydney this year, much of the discussion is focused on the value of protected areas in a broader rural landscape and as an integral part of a functional economy that includes livelihoods, jobs, and ecosystem services."

Paula Caballero
Senior Director for Environment and Natural Resources, the World Bank

NCA AS A TOOL FOR MAINSTREAMING PROTECTED AREAS INTO ECONOMIC DEVELOPMENT PLANNING

Sydney, Australia, November 12–19, 2014
World Parks Congress

This once-in-a-decade global forum helps set the agenda for protected areas conservation—taking under consideration their essential ecosystem services and contributions to economic and community well-being. Natural capital accounting featured prominently at the Congress, where NCA was showcased as a tool for mainstreaming protected areas into economic development planning and improving the management and sustainability of protected areas over time by tracking relevant indicators inside and outside of parks. Paula Caballero, World Bank Senior Director for Environment and Natural Resources, highlighted the work done by WAVES in her keynote plenary address, in a blog, and in a video interview filmed by UNDP as part of its Park Talk series.

The WAVES Policy and Technical Experts Committee (PTEC) organized two in-depth sessions on NCA that included lessons from the Philippines WAVES Program and Australia's Great Barrier Reef. The first session showcased how protected areas can be integrated in public and private sector economic planning and decision making, giving examples from various parts of the world. In the second session, experts on ecosystem accounting provided detailed insight into NCA and how it can be used.

"The English words ecosystem and economy share the same root in ancient Greek–oikos, which means household. Yet, in the modern world, we have somehow gotten away from this. All actors need to understand the integrated nature of ecosystems and economic systems, all actors need to intervene to manage them as one system, much as we would manage our own household. This is how we will achieve environmental security, climate security, water security, and food security."

Husam Abudagga
acting head of the World Bank office in Egypt

London, U.K., October 15–17, 2014
Annual Meeting of the London Group on Environmental Accounting

The London Group is the body of technical experts established by the UN Statistical Commission to develop methodology for environmental accounting. WAVES led a session on ecosystem accounts.

Washington, DC, United States, December 2014
ACES (A Community of Ecosystem Services) Workshop

The WAVES Program Manager participated as a guest speaker and panelist at the ACES Town Hall Session entitled "What is Ecosystem Accounting Anyway? Could it be a Game Changer for Sustainable Development?" World Bank Environmental Economist Stefanie Sieber spoke about earth observation systems under the Phil-WAVES project during the session, "How Earth Observation Changed the Way We Assess Ecosystems-User Perspectives."

Cairo, Egypt, March 2–6, 2015
15th Ordinary Session of the African Ministerial Conference on the Environment (AMCEN)

The theme this year was Managing Africa's Natural Capital for Sustainable Development and Poverty Eradication. A World Bank team attended and contributed to the natural capital dialogue at AMCEN, including the role of natural capital in national planning and financing as laid out in the Cairo Declaration.

Mubariq Ahmad (left) and Portia Segomelo (right) provide country updates on Indonesia and Botswana at the 2014 WAVES partnership meeting.

WORKING WITH THE PRIVATE SECTOR

Representatives from government, business, and finance discussed the role of natural capital during a panel discussion at a two-day event that brought together 60 experts with multi-sector expertise to find synergies on accounting for natural capital.

Over the past year, global dialogues have demonstrated that governments, companies, and the financial sector are coalescing on the view that natural resources, such as water and forests and the ecosystem services they provide, play a crucial role in the wealth of nations as well as companies' bottom lines. The business and financial sectors are pushing ahead with thinking how to assess and embed natural capital–related risks in their operations.

In April 2015 the World Bank hosted a two-day event, "Advancing Natural Capital Accounting in Government, Business and Finance: Theory, Practice and Enabling Conditions," that brought together a group of experts from international initiatives, the public sector, knowledge centers, governments, multilateral bodies, leading companies, financial institutions, and universities to discuss practical actions needed to create an enabling environment to increase the uptake of natural capital accounting by government, business, and finance.

US$3 TRILLION

THE ANNUAL COSTS INCURRED BY GLOBAL COMPANIES FROM POLLUTION, ECOSYSTEM DEPLETION, AND HEALTH IMPACTS.
(State of Green Business 2015)

THE NATURAL CAPITAL COALITION

The Natural Capital Coalition, formerly the The Economics of Ecosystems and Biodiversity for Business Coalition (TEEB), is a multistakeholder initiative making the case that business needs to account for its natural capital dependencies and impacts in the same way it does for financial capital. The World Bank Group provides inputs into this process. The Coalition launched the Natural Capital Protocol project in May 2014 to develop and pilot-test a harmonized framework for valuing natural capital in business decision making, as well as two sector-specific guides on food and apparel. The Protocol will draw on emerging work on valuation. At a workshop in London in October 2014, "Shaping the New Natural Capital Protocol for Business," over 60 participants came together from businesses and international organizations to discuss the business drivers, shape the Protocol, and be part of the process of transforming corporate reporting and making natural capital accounting "second nature" for business. WAVES organized a session on green growth and NCA at the workshop.

THE NATURAL CAPITAL DECLARATION

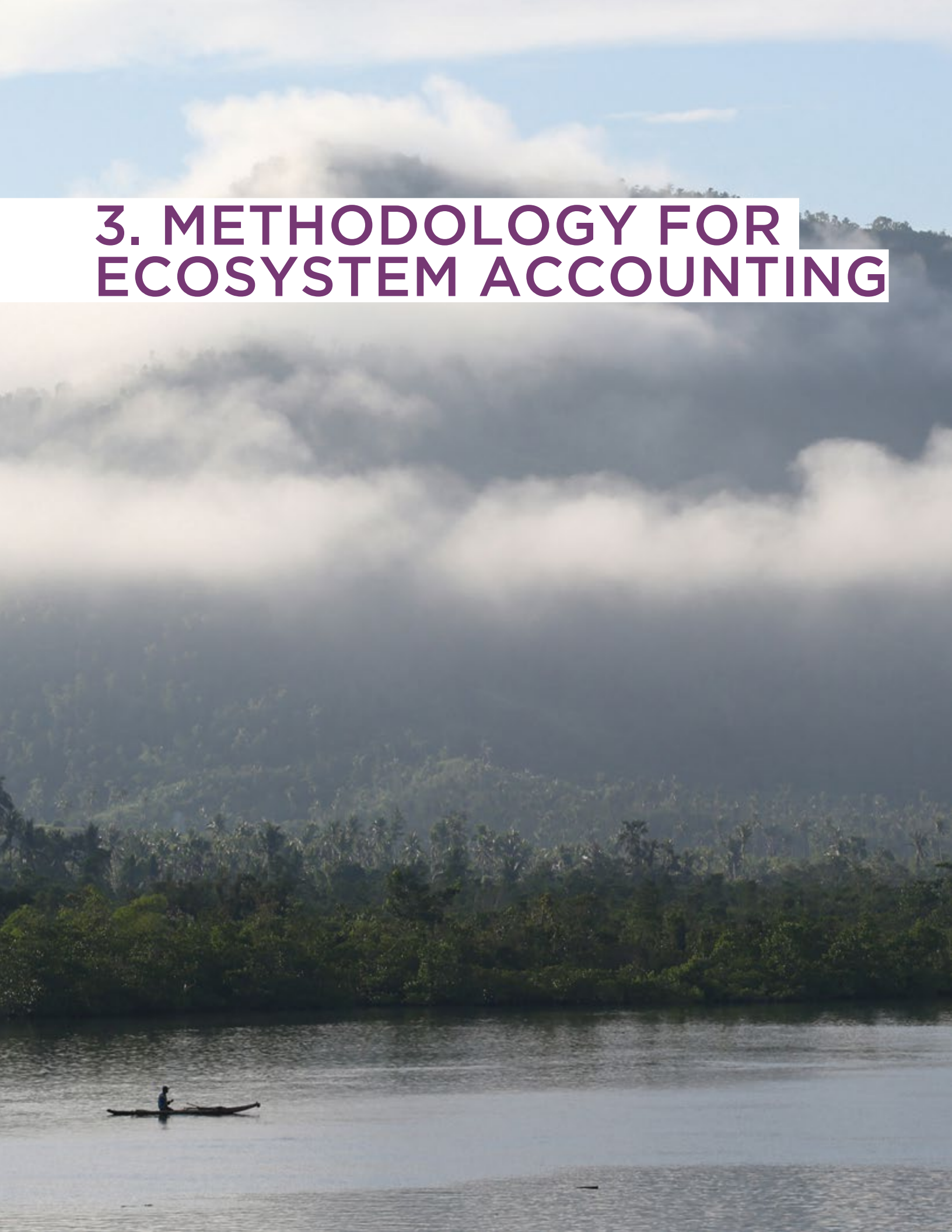
The Natural Capital Declaration (NCD) is a global finance–led initiative that commits banks, investors, and insurers to integrate natural capital considerations into their operations and in particular into the cost of capital. The Declaration has been signed by over 40 financial institutions and by more than 30 other key stakeholders. The World Bank Group, a signatory to the NCD through the International Finance Corporation, chairs the Steering Committee.

The Declaration seeks to reinforce the link between financial capital and natural capital. NCD is currently developing several practical tools and approaches for the financial institutions to be able to implement their commitments. These projects cover various asset classes and types of risks associated with natural capital depletion across investment portfolios.

NCD held a workshop in Cape Town, South Africa, in October 2014 that engaged the wider financial sector beyond the NCD signatories. WAVES shared emerging practical approaches being developed under the NCD umbrella over the last two years. NCD's flagship pilot project, "Mapping Natural Capital Risks Across Portfolios and Embedding Them in Credit Risk Assessment," aims to provide NCD signatories with the business case, a common approach, and tools to integrate natural capital into their operations from the investment risk perspective, thereby strengthening the financial health of their portfolios.

"The practical tools developed under the NCD can help financial institutions not only make natural capital issues more relevant to their operations, but also increase their meaningful participation in the global policy dialogue. At the World Bank Group, we are committed to facilitating this multi stakeholder engagement that would bring together governments, businesses, and investors."

Bill Rahill
Director for Environment and Natural Resources at the World Bank and Chair of the Natural Capital Declaration Steering Committee, World Bank



3. METHODOLOGY FOR ECOSYSTEM ACCOUNTING

The Policy and Technical Experts Committee is a multidisciplinary body of specialists in economics, environmental accounting, natural sciences, and policy from the World Bank, UNEP, academic institutions, and governments. Its mandate is to help develop methodologies for ecosystem accounting, test them in the field, capture lessons learned, and prepare trainings to build capacity in countries implementing ecosystem accounting.

At the October 2014 PTEC annual meeting, the focus was on how to build capacity for counties working on ecosystem accounts. To help develop clear guidance for countries, there were discussions on clarifying definitions and some unresolved issues on the valuation of ecosystems. Members provided ideas on developing a training package on ecosystem accounts and reiterated their commitment to serve as ambassadors for NCA, as well as to continue providing quality assurance to several projects.

Training on Ecosystem Accounting

The lack of good training materials on ecosystem accounting has been repeatedly identified as an obstacle to countries undertaking ecosystem accounts. To address this challenge, PTEC enlisted a panel of leading experts from various international agencies—Eurostat, the European Environment Agency, and the United Nations—as well as countries like Australia, Canada, the Netherlands, and the United Kingdom. The experts were tasked with developing a ready-to-use training material on ecosystem accounting.

Efforts are already under way to consolidate existing training materials, but countries want them to be standardized and made accessible to a pool of experts. A modular format was chosen to develop differentiated materials for diverse audiences with different levels of understanding of accounts, from policy makers (level 1) to hands-on experts (level 4). The first draft of the training was tested in the Philippines, with more than 60 participants from the eight core WAVES countries plus India. The Philippines has been a pioneer in ecosystem accounting and continues to be a role model for other emerging countries. The central aim of the week-long workshop was to introduce countries to key concepts of ecosystem accounting and to provide them with general guidance on data sources, methods, and the planning processes needed to ensure effective implementation.

Héctor Tuy, Human Ecology Research Associate and Guatemala representative, presented publications of their environmental accounts to Romeo Recide, Interim Deputy National Statistician of the Philippine Statistics Authority (PSA), at the Knowledge Exchange Workshop on Ecosystem Accounting.

The workshop centered on interactive exercises, breakout sessions, discussions, and question-and-answer segments. The Master Class offered a platform for country experts to share and transfer their operational and experimental understanding with fellow delegates.

The workshop concluded with countries presenting one-year road maps for implementing ecosystem accounting. These were showcased through a capacity building tool called net-mapping, which links countries' key policy issues to specific accounts and implementation steps, with a focus on key actors and relationships. As a follow-up, WAVES has established an online platform for the workshop participants to continue exchanging experiences and knowledge.

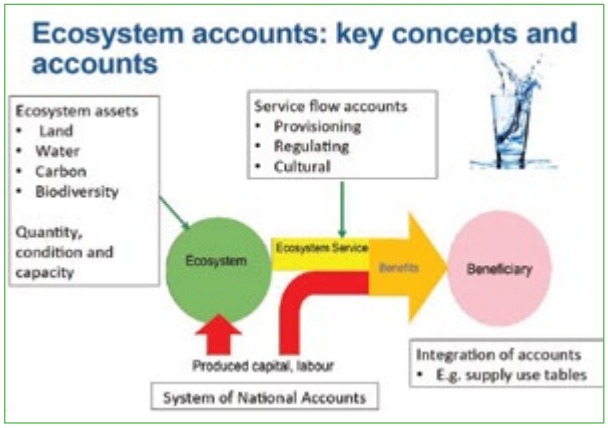
The next steps will be to develop more in-depth modules around building ecosystem accounts and to produce training materials on water accounting, in line with the learner-centered, interactive approach used in the ecosystem accounts training. This work will be closely coordinated with organizations such as UNSD, Eurostat, and national statistical offices, which are undertaking similar efforts.

Members of the Policy and Technical Working Group at their annual meeting in Washington D.C. in 2014

Valuing Coastal and Marine Services

Coastal and marine habitats, particularly coral reefs and mangroves, play a crucial role in reducing the impacts of coastal erosion and inundation by providing a natural barrier during storms. They also benefit fisheries, tourism, and—in the case of mangroves—carbon sequestration. As a first step toward helping countries value coastal ecosystems, PTEC is partnering with The Nature Conservancy to develop *Guidelines for Coastal and Marine Ecosystem Accounting: Incorporating the Protective Service Values of Coral Reefs and Mangroves in National Wealth Accounts.*

This document evaluates the different modeling tools available, the capacity and data requirements, and the scale of the management issue that can be addressed by each approach. The guidance note will be useful for measuring and valuing coastal protection services and identifying where "natural infrastructure" like mangroves and coral reefs can be used either in combination with, or instead of, "hard infrastructure" for coastal defense, reducing vulnerability to climate change and coastal hazards.



WAVES is now gearing up to field-test the guidelines in three to four countries, alongside relevant World Bank operations.

Developing Methodology and Policy Applications of Accounts

Valuation of ecosystem services is an area still under development. PTEC is continuing its work on producing guidelines for valuation in an accounting context, to advise partner countries and provide a basis for training. The intention is that this work will eventually feed into a new edition of the manual on ecosystem accounting, *SEEA: Experimental Ecosystem Accounts (SEEA–EEA).*

In order to connect methodology with policy, a first report on this subject was published last year entitled *Use and Users of Accounts*. Shorter policy briefs are being developed ("NCA in Action"), compiling examples of how NCA has been used in policy. PTEC is producing reports and PowerPoint presentations on how NCA can inform policy through different tools, including models, scenario building, and indicators.

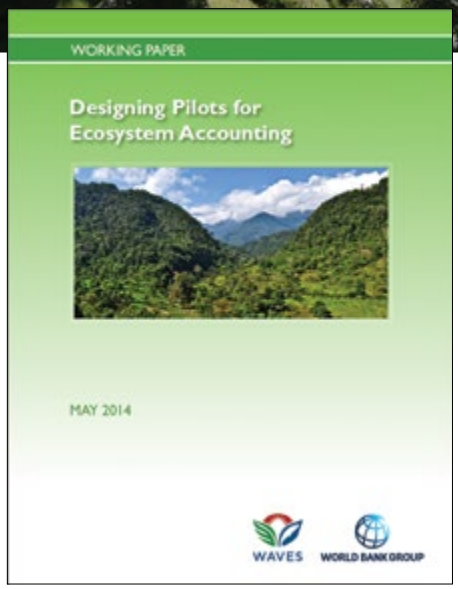
Field-testing Ecosystem Accounting Methodology

To operationalize the framework for ecosystem accounts as detailed in *SEEA–EEA* and to test different methodologies to develop guidance on how ecosystem accounts can be compiled, PTEC is supporting pilot studies in three sites. (See page 38 for details on the Himachal Pradesh DPL.)

THE ECOSPACE PROJECT

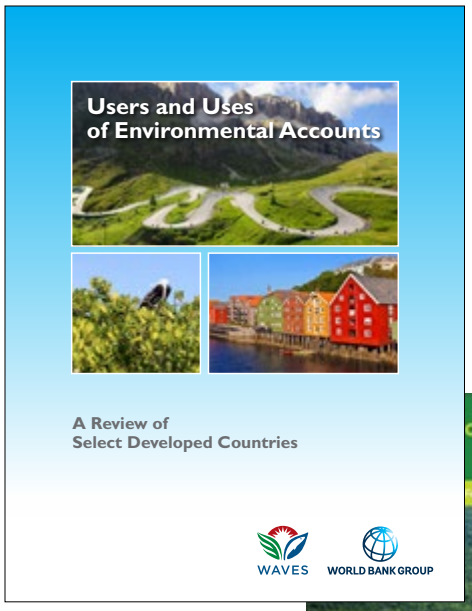
Now in its final year, the Ecospace project has produced a multitude of valuable publications, including:

- *Mapping Monetary Values of Ecosystem Services in Support of Developing Ecosystem Accounts,* focusing on ecosystem services in Central Kalimantan, Indonesia[1]
- *Monetary Accounting of Ecosystem Services: A Test Case for Limburg Province, the Netherlands*[2]
- *Ecosystem Services and Opportunity Costs Shift Spatial Priorities for Conserving Forest Biodiversity,* analyses ecosystem services in Norway using heuristic optimisation planning software[3]



In addition, another paper on linking ecosystem services to beneficiaries in Central Kalimantan is in the final stages, while several other reports on modeling ecosystem services for land use planning and ecosystem management are being prepared or reviewed. The work of developing models for ecosystem accounting will continue by way of several PhD projects, including one on Benin's hydrological services (paper has been submitted), and others in Colombia and Chile (papers are in progress).

1. http://www.sciencedirect.com/science/article/pii/S2212041615000273
2. http://www.sciencedirect.com/science/article/pii/S0921800915000622
3. http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0112557



THE EVA PROJECT

Experimental Ecosystem Accounting was piloted in San Martin, Peru, with the understanding that integrating the value of nature's benefits into the core of official statistics was of strategic relevance and that such efforts could generate systematic and credible information for development and conservation policy.

Initially the project suffered from challenging data issues, such as a lack of detailed land use maps. However, proxy information was developed using a mix of census data and coarse spatial data, leading to substantial progress in modeling and valuing key ecosystem services. The dialogue with the government led to deeper appreciation of the need to manage natural resources better.

The project team will next focus on specific assessments and measurements for biodiversity and ecosystem accounts, incorporating feedback from the government. The team is also working toward integrating ecosystem accounts into national accounts, in close coordination with the Peruvian National Statistics Agency and the Ministry of Environment.

4. WEALTH ACCOUNTING IN WORLD BANK OPERATIONS

"Short-term growth that erodes natural capital is vulnerable to boom-and-bust cycles, and can cause people who live close to the poverty line to fall far below it."

Mahmoud Mohieldin,
World Bank's Corporate Secretary and President's Special Envoy on Millennium Development Goals, the Post-2015 process, and financial development

SYSTEMATIC COUNTRY DIAGNOSTICS

In 2014, the World Bank decided to strengthen the Country Partnership Framework, a document that determines the Bank's engagement with a particular country. To make it more systematic and evidence-based, it was decided that it would draw upon a Systematic Country Diagnostic (SCD), an exercise conducted by the World Bank Group (WBG) in close consultation with national authorities, the private sector, civil society, and other stakeholders. It presents a systematic assessment of the constraints a country has to address and the opportunities it can embrace to accelerate progress toward the goals of ending extreme poverty and promoting shared prosperity in a sustainable way.

This analysis takes into account environmental, social, and economic sustainability. SCDs are currently being conducted by WBG staff, in partnership with key local stakeholders, in more than 40 countries across the developing world.

Wealth accounting data are part of the inventory of SCD tools and resources, and thus far inputs have been requested from six countries (Argentina, Belize, Botswana, Lesotho, Serbia, and Uganda). The requests for wealth accounting inputs range from a simple sharing of the databases on comprehensive wealth and changes in wealth to more involved analysis using the wealth accounting framework to provide a broad assessment of the sustainability of the country's growth path.

In countries like Botswana, natural capital accounts on water, energy, and minerals have helped determine the sustainability challenges facing the country.

INDICATORS ON SUSTAINABILITY

In 1999, the adjusted net saving (ANS) indicator—also called genuine saving—was published as a complementary indictor to comprehensive wealth. Today, the World Bank publishes the ANS indicator for more than 200 countries in the World Development Indicators (WDI) and the Little Green Data Book, the World Bank's annual compilation of environmental data. ANS monitors whether depletion of natural capital, such as minerals or forests, is compensated for by investment in other assets, such as human capital or infrastructure. This has also been supplemented by another indicator, change in wealth per capita, which is based on adjusting gross national savings for changes in physical, human, and natural capital and on accounting for the wealth-diluting effects of population growth.

Currently the comprehensive wealth accounts are being updated as an annual series from 1995 to 2012 and will be published by the end of FY 2015. A number of ongoing scoping studies aim to improve the wealth methodology (such as forests, subsoil assets, and agricultural land) and will result in a future benchmarking of the entire database.

This has helped strengthen the World Bank's dialogue with countries about economic growth and sustainable development strategies.

MAKING AN ECONOMIC CASE FOR TACKLING POLLUTION

The World Bank will be publishing new country-level estimates of the economic costs of air pollution, drawing on new data from the Global Burden of Disease. These are published in the WDI report annually as part of the adjusted net savings indicator. Starting this year, the new measure of pollution damages will encompass both outdoor air pollution and household air pollution in both urban and rural areas in countries, and damages will be estimated for the more harmful PM2.5 particles. This updated methodology will reflect the latest findings in academic literature, providing country-level estimates for the loss in productivity and economic well-being that countries incur due to ambient and indoor air pollution. These estimates will help make a business case for why countries need to invest in air quality management.

DEVELOPMENT POLICY LOANS

WAVES provides technical support to other countries through related programs and funding instruments within the World Bank Group. In India, work on forest accounts is part of the Development Policy Loan to Support Inclusive Green Growth and

HIMACHAL PRADESH: VALUATION OF HYDROPOWER SERVICES

Forests are an important natural asset for the Indian state of Himachal Pradesh, providing a range of critical goods and services that are important to the state's economy. The two key growth sectors in the state—tourism and hydropower generation—depend on the sustainable management of forests. Water regulation and soil retention services provided by forests are important inputs into hydropower generation, for example, and forest-dependent nature-based tourism carries the potential to generate growth and jobs.

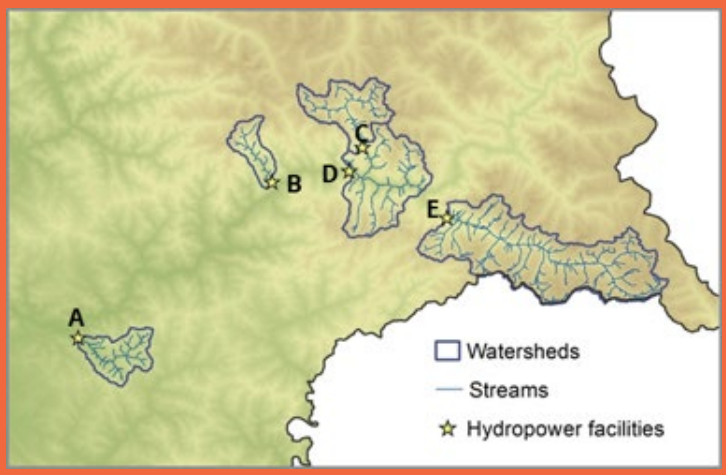
Policy makers do not have the information they need, however, to manage this important economic asset. This includes information not only on the extent of forest resources and how that is changing but also on the economic contribution of forests.

The technical assistance program of the World Bank's Development Policy Loan has been working with the state government to develop forest accounts. This effort also includes a pilot on mapping and valuing the water regulation and soil retention services of forests for the hydropower sector in order to develop pilot ecosystem accounts.

KEY RESULTS

Last year, the Natural Capital Project at Stanford University worked with the state government to develop a spatial map of the physical flow of water regulation and soil retention services provided by forests in five different watersheds (see Figure A).

Figure A: Five watersheds that serve as catchments for hydropower facilities in Himachal Pradesh

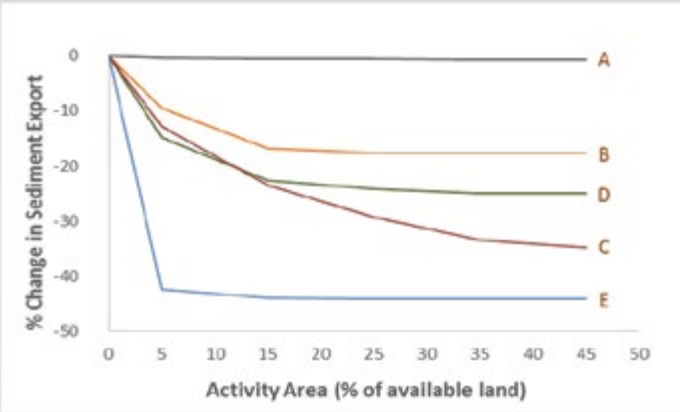


Sustainable Development in Himachal Pradesh. The government of Himachal Pradesh spends substantial resources on catchment area treatment to minimize the environmental impact of development activities and to increase the flow of critical ecosystem services. Ecosystem accounts are helping the government improve the effectiveness of its interventions. (See Box.)

The application of ecosystem accounts in Himachal Pradesh is being replicated to inform catchment area treatment planning for the Kali Gandaki A hydropower project in Nepal. This project is a 144 MW run-of-river plant and is currently the largest hydroelectric power station in Nepal, supplying nearly 40 percent of Nepal Electricity Authority's annual electricity generation. However, the facility suffers from low availability of generation capacity in part due to heavy sediment in the water, which has severely damaged its power generation equipment. In 2013, the World Bank issued a loan to the government of Nepal for rehabilitation of the Kali Gandaki A facility. One component of this loan is to support investments in the catchment to minimize sediment flow to the facility. Ecosystem accounts in turn will help inform these investments.

This assessment was also used to develop an investment prioritization plan for the catchment area and to understand how current catchment area treatment plans can be improved. Figure B shows the impact of the investment portfolio, prioritized by activity and location, on the reduction of sediment inflow to the facility. Two results are striking. First, in some areas (such as catchment A) there is no benefit in terms of reduction in sedimentation from undertaking any investments. This, of course, could be because the catchment is already managed to maximize the flow of sediment retention services or because sediment is generated by natural geological processes that cannot be managed by human interventions. The second notable result is that in some areas (such as catchment E) a sharp reduction in sediment can be achieved by making investments a priority in only 5 percent of the total available land in the catchment. Treating additional land does not generate additional benefits.

Figure B: Results of Investment Prioritization



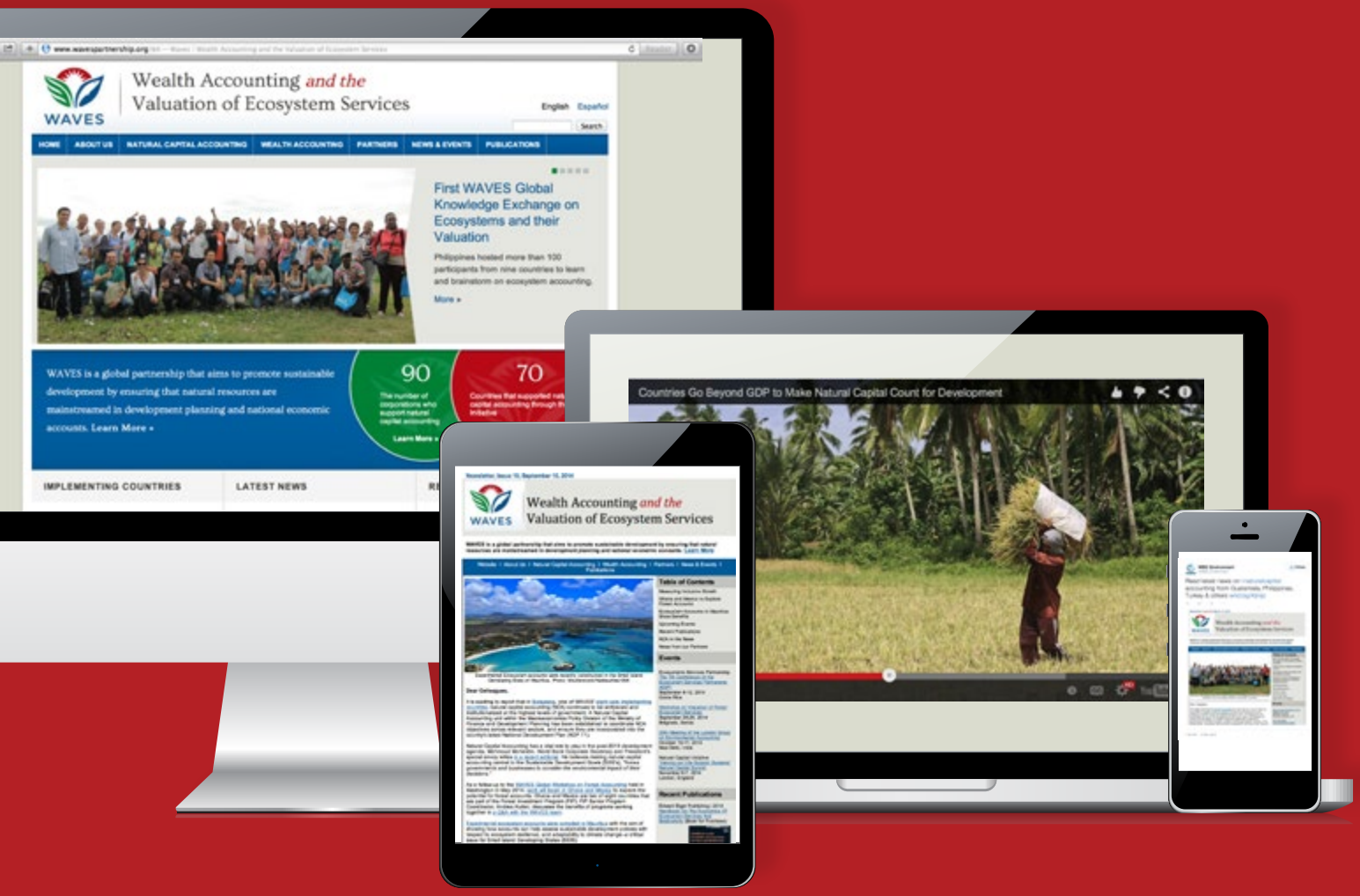
RELEVANCE FOR POLICY MAKING

The government of Himachal Pradesh spends substantial resources on catchment area treatment to minimize the environmental impact of development activities and to increase the flow of critical ecosystem services. However, the government has few tools to prioritize its investment plans and to monitor their effectiveness . An assessment of physical flows of ecosystem services through ecosystem accounts as well as the application of investment prioritization techniques, as demonstrated by the project, can help the government improve the effectiveness of its interventions.

NEXT STEPS

The state government is currently building forest asset accounts and supply-use tables to better understand how this important state asset has evolved over time and to understand its contribution to the state domestic product. It is also the first state in India to use tourism accounts to estimate the contribution of forests to tourism revenues. The results of these activities will be presented at a national workshop to extend knowledge on the policy applications of forest accounts to other forest-rich states in June 2015.

5. COMMUNICATING NATURAL CAPITAL ACCOUNTING



Building Engagement at the Country Level

In partnership with the International Institute for Environment and Development (IIED), WAVES has intensified work on building engagement and mobilizing support and action on NCA in WAVES core implementing countries.

Since mid-2014, IIED has supported the WAVES global secretariat on communications missions to Botswana, Colombia, Guatemala, and Rwanda, providing an opportunity to meet a wide range of people and organizations who are already involved in constructing natural capital accounts or could become key allies in the process.

These missions—consisting of group consultations and individual meetings—have provided a chance to listen to stakeholders and better understand the political context in which the country team is operating. They provide rich material for the preparation of an ambitious but realistic communications and engagement strategy for each country aimed at raising the profile of NCA and finding the right socioeconomic levers to mainstream NCA in the country's development planning.

Over the course of the year, IIED has hired four part-time communications consultants to keep up the momentum on engagement. Working with the national country coordinator, these consultants design and implement communications strategies, spot opportunities for engagement, and produce relevant outputs tailored to the varied audiences WAVES is trying to reach.

A notable example of the strategy in action was the organization of a high-level breakfast meeting in Gaborone, Botswana in early February 2015 where the WAVES team briefed more than 90 participants, including senior government officials and members of the cross-sectoral thematic working groups, about NCA. The Permanent Secretary from the Ministry of Minerals, Energy and Water Resources, the Deputy Secretaries from the Ministry of Finance and Development Planning, and the Ministry of Lands and Housing spoke at the event about the institutionalization of NCA within ministries and how it is informing Botswana's national development planning processes. The presentations were complemented by newly branded printed briefings on the water accounts. The ensuing media coverage helped bring WAVES' work into the national discourse.

Daily Business

Radio Botswana Online
www.radiobotswana.gov.bw

Thursday February 12, 2015 No. 28

Botswana leads in nature preservation

'It makes a lot of sense for us to be in the lead in terms of Wealth Accounting and the Valuation of Ecosystem Services'

GABORONE - Botswana leads Africa on Natural Capital Accounting (NCA) and recognises the impact of natural heritage in terms of the social and economic well-being of the nation.

Permanent secretary in the Ministry of Minerals, Energy and Water Resources, Mr Kgomotso Abi said this on Tuesday in Gaborone at the high level sensitisation breakfast meeting on Wealth Accounting and the Valuation of Ecosystem Services (WAVES).

WAVES is a global partnership that aims to mainstream natural capital in development planning and national economic accounts in support of sustainable development.

"We take pride in the way we've managed our natural capital. Of course people know about our diamond, copper and tourism. So, as a country, really it makes a lot of sense for us to be in the lead in terms of Wealth Accounting and the Valuation of Ecosystem Services," he added.

Mr Abi said recognising the effort that Botswana has done so far in terms of WAVES, the NCA in Botswana "is led from the very top.

It is something that has been approved by cabinet. It's something that our President Lt Gen. Seretse Khama Ian Khama drives with passion."

Mr Abi cited as a critical issue the fact that Botswana was too dependent on natural resources, hence the need for the country not to lose sight of intergenerational equity.

"When we talk minerals, we know that minerals at the end of the day will get depleted; but we must invest the proceeds of the minerals in sustainable industries, such that in the long term we actually indirectly make mining sustainable," he said.

At some point, he said Botswana's diamond resources would deplete and this did not mean that the day the last diamond mine was closed in Botswana that would be the end of it.

The country, he said still needed to keep the industry in terms of the downstream side, therefore when issues of NCA were discussed, discussions are beyond the core industry. "It's the supporting industry that will make or break us as well," he added.

In terms of the National Steering Committee, Mr Abi said the Committee had approved the National Plan, which he said focused on some of the following areas: water, macroeconomic indicators, energy to do the account.

"We need to recognise a few areas where we need to focus on, collect the necessary data that will inform our policy formulation and

WAVES programme manager, Dr Glenn-Marie Lange (left) and Mr Abi at a high-level sensitisation

At a high-level breakfast meeting in Gaborone, Botswana, in early February 2015, the WAVES team briefed more than 90 participants on Botswana's national development planning processes. The ensuing media coverage helped bring WAVES' work into the national discourse.

"The interest in natural capital accounting has exploded over the past few years and it is very hard to keep up with all that is going on. As a long-time developer of accounts first in government and now as a university researcher, the WAVES Newsletter is a great way to find out what is happening—from the high level policy statements of the Prime Minister of Botswana to the production of accounts in Guatemala. With the rate of progress in countries accelerating and countries moving from planning and producing accounts to applying them to policy and management questions, the WAVES Newsletter and website will become even more important.

Michael Vardon,
Adjunct Fellow, Fenner School of Environment and Society, Australian National University.

Sharing Knowledge on NCA

The WAVES newsletter reaches almost 2,000 individuals every month, nearly double the subscriber base from last year. The content of our newsletter includes original feature stories and relevant news, not just on WAVES but on all partner countries, as well as the latest publications, activities, and events relevant to NCA. We recently sent out the twenty-fifth edition, highlighting readers' responses on how the newsletter offers a way for the science and policy community to stay up-to-date on the ever-increasing news and initiatives on NCA around the world.

The WAVES website has seen an increase of 25 percent in viewership. Visitors are directed to the website from the newsletter and social media outreach, including postings from the twitter feed: #naturalcapital. A new social media strategy is in the works to engage a broader set of audiences.

With IIED's advice, the WAVES website has expanded to incorporate a comprehensive and accessible knowledge center—an exciting new resource for sharing best practices, latest articles, tools, and training materials. This went live in late May 2015 and in the year ahead will become a hub for building knowledge and capacity around NCA and wealth accounting.


Newsletter, Issue 16, June 5, 2014

WAVES

Wealth Accounting *and the* Valuation of Ecosystem Services

WAVES is a global partnership that aims to promote sustainable development by ensuring that natural resources are mainstreamed in development planning and national economic accounts. Learn More

Website | About Us | Natural Capital Accounting | Our Approach | Partners | Events | Publications

#BeyondGDP

"Going #BeyondGDP: Making Natural Capital Count for Development" kicked off the Fourth Annual WAVES Partnership Meeting

Dear Colleagues,

Our meeting rooms in the Washington D.C office were abuzz with lively discussions last month as we hosted the Global Workshop on Forest Accounting, the Fourth Annual Partnership Meeting, and the WAVES Steering Committee meeting. It was our pleasure to host so many of you working on the frontlines of natural capital accounting.

More than 80 participants from 20 WAVES partner countries attended the WAVES Global Workshop on Forest Accounting. The workshop provided a platform to discuss opportunities for mainstreaming forest accounting into development policy. It was a first step towards creating a dynamic Community of Practice on forest accounting, to allow for greater knowledge sharing and provide a system of support for countries implementing these accounts. Frances Seymour, Senior Fellow, Center for Global Development, delivered the keynote address: Key Policy Issues and Challenges for Forests, and all the presentations from the workshop can be found online. In her presentation, Seymour stressed the need to make the economic costs and benefits of forest loss more explicit.

The WAVES Fourth Annual Partnership Meeting was an enormous success, with over 160 participants from 22 countries including representatives from international organizations, technical experts,

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World Bank Approves Grant to Study Philippines' Natural Resources

Upcoming Events

Recent Publications

NCA in the News

News from our Partners

Events

GLOBE International Second World Summit of Legislators
June 5-8, 2014
Mexico City, Mexico

World Congress of Environmental and Resource Economists
June 28-July 2, 2014
Istanbul, Turkey

Ecosystems Services Partnership
The 7th Conference of the Ecosystem Services

New Look for WAVES products

The WAVES Partnership has refreshed and strengthened its visual identity across print and digital outputs.

The WAVES branding has been designed to make it easier for people to recognise and access our work, ensure better targeting of key audiences, and build greater trust and credibility.

Two new series have been introduced. NCA in Action compiles the policy use of accounts across the world. NCA and Development shows how NCA can be an effective tool in monitoring and informing a range of development issues, such as poverty reduction and climate change.

Participants at a stakeholder workshop in Rwanda in April 2015.

6. COUNTRY REPORTS

BOTSWANA

BACKGROUND

The economy in Botswana is heavily dependent upon natural assets, especially minerals. The country also faces some crucial decisions on the allocation of scarce water resources and the choice of energy mix, including the potential exploitation of large-scale coal resources. Botswana must weigh trade-offs among competing demands for land, often involving fragile ecosystems, in considering new mining activities, nature-based tourism, and new agricultural activities. These decisions require a wide range of information about natural capital, to ensure both that decisions are taken in the overall national interest—especially where public and private costs and benefits may diverge—and that changes in national wealth and income are properly accounted for.

INSTITUTIONALIZATION

A national Steering Committee chaired by the Ministry of Finance and Development Planning (MFDP) was established to oversee WAVES in 2012. Technical Working Groups, reporting to the Steering Committee, have been established for all the accounts. An NCA unit within the Macroeconomic Policy Division of MFDP now has two full-time officers who work with the Country Coordinator. Three full-time officers in the Department of Water Affairs, which chairs the Water TWG, are assigned to work on water accounts, while the Department of Energy Affairs, chairing the energy TWG, has provided three officers for energy accounts. The Department of Geological Surveys, chairing the minerals TWG, has appointed a team to guide the work for the mineral accounts.

PROGRESS

A broad work plan was developed and approved by the Steering Committee in 2012. The country's political leadership, through the Botswana Economic Advisory Council, gave water accounting the priority in the first year. The committee later approved work on the rest of the accounts—on minerals and macroeconomic indicators and on ecosystem accounts—and subsequently added energy accounting as a WAVES priority sector. Water accounts have been produced for the last three years, and a time series of water use accounts is now available from 1993 to 2013. Mineral accounts and macroeconomic indicators have been produced for a similar time period. The Department of Energy has developed a draft Action Plan for Energy Accounting.

MFDP, with the support of the Steering Committee, has drafted text on NCA for inclusion in the 11th National Development Plan (NDP11), currently being discussed. The Steering Committee will spearhead efforts to present all WAVES products to the NDP11 formulation committees and is also working to ensure that NCA is included in Botswana's Vision 2030.

WATER ACCOUNTS

The water accounts have been updated for 2013/2014 and have focused on improving data for the mining sector, a major water user, and beginning construction of monetary accounts for water. The Steering Committee has approved and circulated two policy briefs: one on water and irrigation (published by the government) and the other on water and mining; a policy brief on water and broader agricultural issues is under review.

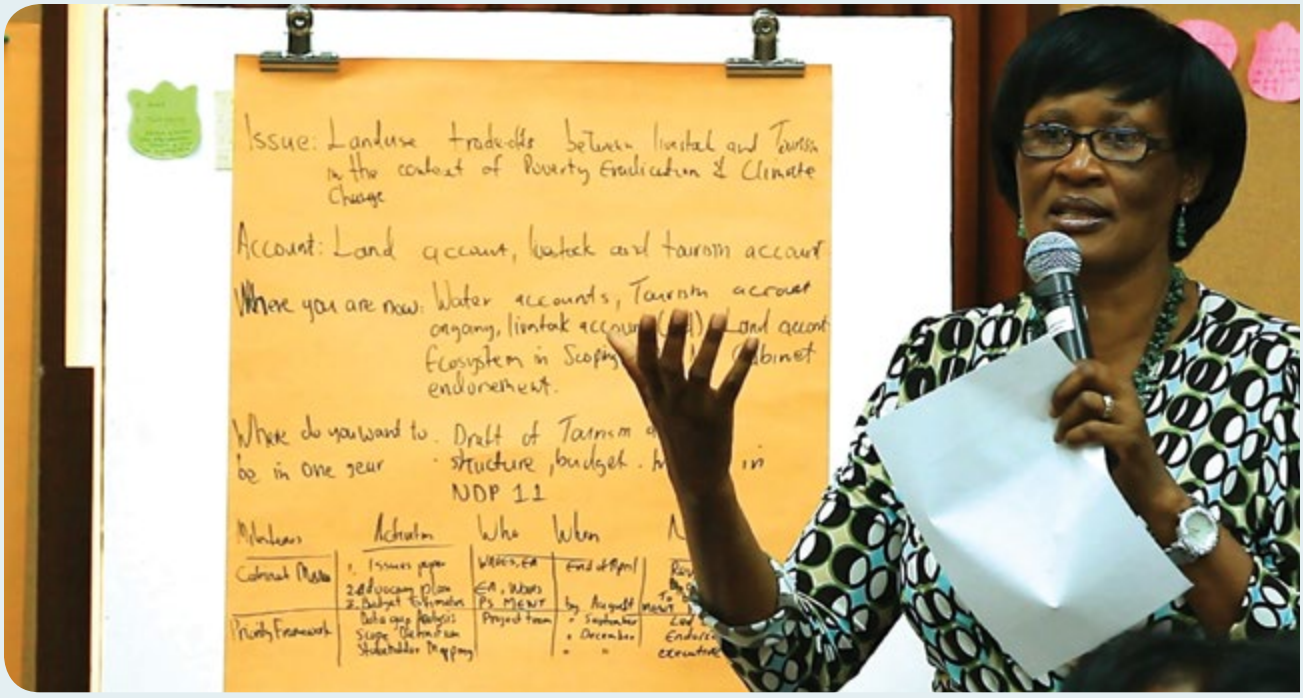
The water accounts updates have revealed a number of water resource issues that may inform policy reforms going into NDP11 formulation and beyond. In terms of water and mining, the analysis of accounts show that mining relies on groundwater and abstraction by companies.

- Mining accounts for 10–15 percent of water use.
- Diamond production accounts for three-quarters of water use in the mining sector.
- Water productivity (value added per cubic meter of water) is high in the mining sector but varies tremendously by mineral, from very high for diamonds to very low for copper and nickel.
- Water use is projected to increase to 100 million cubic meters due to expansion of the mining industry.

Two policy issues on water have emerged: Will there be enough water for mining expansion, given other water-intensive priorities like increased agriculture? And can there be better monitoring of water use and greater use of saline and recycled water?

With respect to water and irrigation policy, the issues captured in the accounts include:

- The need to improve water efficiency through technologies like drip irrigation
- Increasing the use of treated wastewater for agriculture near towns and the use of small dams



WAVES-Botswana Country Coordinator Portia Segomelo presents her work plan at the Knowledge Exchange Workshop on Ecosystem Accounting.

- The need for economic cost-benefit analysis for large-scale irrigation projects, in order to better understand the trade-offs among competing users of water
- Whether the choice of crops in new irrigation projects should be linked to economic benefits or food security
- The need to review irrigation water tariffs

A week-long water training and data quality assessment was held in March 2015, with technical assistance from the Australian Bureau of Statistics (ABS). This was particularly helpful for the new staff on the Water Accounting Technical Working Group.

MINERAL ACCOUNTS AND MACROECONOMIC POLICY INDICATORS

The Departments of Geological Surveys and Mines, together with a local consultant, developed a roadmap for mineral accounts. A Technical Working Group was established in February 2015, and the members are revising the preliminary accounts developed in 2014. The work on macroeconomic indicators was assigned to an existing TWG chaired by the Ministry of Finance and Development Planning.

Following several introductory seminars last year, a two-day training workshop was held for members of the Mineral and Macro Indicators Technical Working Group in December2014. This introduced them to the methods for constructing mineral accounts using the data for Botswana. This was followed by a four-day training course in February 2015 that reviewed mineral accounting techniques and focused on the use of wealth accounting for macro and fiscal policy.

LAND-ECOSYSTEM AND TOURISM ACCOUNTS

A 10-day scoping mission for ecosystem accounts was held in July 2014, led by the Department of Environmental Affairs and supported by Dr. Lars Hein of Wageningen University in the Netherlands. The scoping report gave priority to the Okavango Delta, the Makgadikgadi ecosystem, and the Chobe system (where some previous work has been done). The report also discussed options for institutional arrangements for ecosystem accounting. A technical working group for ecosystem accounts is in place, led by the Ministry of Environment, Wildlife and Tourism (MEWT).

The TWG decided to focus initially on two major ecosystem services: livestock and nature-based tourism. Work has been undertaken this year by the Department of Tourism and Statistics Botswana to bring the tourist arrival statistics up to date, as the basis for the surveys needed for the accounts.

ENERGY ACCOUNTS

The Department of Energy and the WAVES Secretariat held a workshop in August 2014 to consider the scoping report and to initiate a work plan. This resulted in the Energy Accounts TWG developing a detailed Action Plan for energy accounts in December 2014.

The Action Plan proposed constructing energy accounts over 18 months. The first step in this, providing technical support and training for preliminary energy accounts, took place 9–15 February 2015, led by international expert Rocky Harris (DEFRA UK), who conducted the scoping mission for energy accounts in 2014. Presentations were also made on policy analysis by Professor Thlalefeng from the University of Botswana. The Energy TWG is now working on the first phase of the accounts—electricity accounts.

"Once WAVES is internalized across sectors during the implementation of NDP 11, it is expected that the system of national accounts will reflect a more robust picture of the strength of the economy to sustain itself."

Kelapile Ndobano
Deputy Permanent Secretary of Botswana's Ministry of Finance and Development Planning and Chair of the WAVES-Botswana Steering Committee

OUTREACH AND COMMUNICATION INITIATIVES

- WAVES coordinator P. Segomelo (World Bank), NCA coordinator Edwin Itshekeng (MFDP), and P. Tselano (MEWT) attended a knowledge exchange workshop on ecosystem services in Los Banos, Philippines, 23–27 February 2015. WAVES has also started discussions with the University of Botswana on the potential for offering short courses on water accounting and NCA in general.

- Conservation International, represented by Daniella Raik (Washington, DC) and the Africa Regional Director, held a meeting with the WAVES Coordinator to discuss collaboration. CI has been assigned responsibility as the Secretariat for the Gaborone Declaration for Sustainability in Africa (GDSA), and the Botswana WAVES Coordinator was invited to serve on the GDSA Steering Committee.

- The WAVES Botswana team has developed a communications and engagement strategy aimed at building awareness of WAVES work in Botswana and planning for targeted media engagement.

- WAVES held a High-Level Sensitization Breakfast Meeting on Wealth Accounting on 10 February 2015. Over 90 participants attended, including senior officials from the government, parastatals, the private sector, NGOs, and members of the multisectoral Technical Working Groups.

- In March 2015, the NCA coordinator presented the updated water accounts at the Water Pitso, a large annual meeting of all stakeholders in the water sector.

COLOMBIA

BACKGROUND

Colombia ranks second in the world for total biodiversity, after Brazil's Amazon region, and is top of the list for the number of bird species and water resources. Despite Colombia's forest wealth, the country has experienced intense deforestation caused by expanding agricultural and livestock grazing. In 2006, the World Bank estimated that environmental degradation in Colombia represents a loss amounting to 3.5 percent of GDP. The WAVES program in Colombia is building on a long history of environmental accounting by bringing together all relevant stakeholders to work toward expanding natural capital accounts and using them for policy.

"In Colombia, we look at accounts as a tool rather than an end in itself. They give more political power to Colombia's natural capital at a critical point in time when we are losing 3.5% of GDP to environmental degradation. This is a red flag."

Neider Eduardo Abello Aldana
head of the Green and Sustainable Business Office within Colombia's Ministry of Environment

INSTITUTIONALIZATION

The WAVES-Colombia National Steering Committee is chaired by the National Planning Department (DNP). There is also a technical committee for field work and research purposes. The DNP is supporting the WAVES implementation process by actively bringing together all key stakeholders to construct water and forest accounts, building on earlier efforts of the National Statistics Office (DANE) to develop accounts.

In September 2014, the Steering Committee ratified the use of indicators derived from natural capital accounts in the set of performance indicators for the country's Green Growth strategy. As a result, the DNP included a new objective in Colombia's National Development Plan, 2014-2018: All for a New Country: "To protect and assure sustainable use of natural capital in order to achieve its sustainable development and green growth vision." The National Committee on Environmental Accounting will guide the consolidation of natural capital accounts in the country.

NCA is also gaining traction at a regional level: environmental authorities (CORPOBOYACÁ, CORPOCALDAS, and CAR) have identified NCA as a crucial planning tool for administering natural resources. These authorities have highlighted the need for institutional capacity building to support integrated and sustainable management.

PROGRESS

WAVES work in Colombia initially focused on developing NCA for three pilot watersheds (Tota Lake and the Chinchiná and Alto Suárez rivers), but work has expanded to include integrated national-level accounts.

WATERSHED ACCOUNTS

Preliminary results for the Tota Lake pilot were shared by the WAVES team and key stakeholders from January to March 2015. A key finding was that the main water users were water supply systems from outside the watershed, followed by irrigation districts and fisheries, with local industries and the spring onion sector showing the highest productivity per unit of water. Next steps in this pilot include presenting the results to the Tota Lake Watershed Council and briefing the environmental regional authority CORPOBOYACA to ensure that natural capital accounting remains relevant and that accounts are updated.

The regional group CORPOCALDAS requested that WAVES work with all stakeholders involved in the Chinchiná River Watershed Pact to construct water, forest, and ecosystem accounts. The 2015 work plan for this pilot includes coming up with accounts for water assets, forest stock and timber accounts, and identification of goods, services, and ecosystem units for the ecosystem accounts. Local workshops will be held in the watershed areas to strengthen knowledge around NCA.

80%

OF TIMBER PRODUCTION COMES FROM NATURAL FORESTS

NATIONAL FOREST ACCOUNTS

Since June 2014, committed national institutions in Colombia have worked with WAVES to develop a national forest account. Early results highlight reduced forest and natural areas caused by expanding agriculture, mining, and livestock rearing. They also reveal that 80 percent of timber production comes from natural forests.

WATER ACCOUNTS

In March 2015, representatives from DANE and the Institute of Hydrology, Meteorology and Environmental Studies came together with international technical experts to plan how to put together a national account. They developed a temporal and spatial reference framework for the development of the account and a work plan through June 2015.

OUTREACH AND COMMUNICATION INITIATIVES

- In September 2014, WAVES held a seminar on the "Use of Environmental Accounts in Colombia" in Bogotá. National and international experts gave presentations on green growth, the current state of Colombia's Satellite Environmental Account, and the progress made by WAVES in developing forest and water accounts.

- The International Institute for Environment and Development and the World Bank conducted a stakeholder workshop in Bogotá in February 2015 to establish contact with the different local stakeholders, including technical committee experts, environmental regional authorities, research institutes, and academia, and to identify the opportunities and risks of natural capital accounting in Colombia. Participants mapped stakeholders with high and low levels of awareness and influence, which is important in setting priorities for outreach efforts and identifying the best approach for institutionalizing natural capital into decision making.

COSTA RICA

BACKGROUND

Costa Rica has made significant investments in conserving its abundant natural resources, with great success. For instance, 52 percent of the country is covered with forests, while more than 90 percent of electricity is generated by renewable sources. Yet information on the value of natural capital's contributions to society remains sparse.

With support from WAVES, Costa Rica is developing two natural asset accounts to address key questions and inform policy decisions. A national water account will integrate hydrological, economic, and social data in a coherent and consistent framework, while a forest account will incorporate physical and monetary values of services provided by forests and estimate the economy-wide impact of an expanding forest cover.

Costa Rica is at a crucial juncture in building the foundations of green growth. WAVES is contributing in particular to the National Plan for Integrated Management of Water Resources and the National Plan for Deforestation Reduction and Forest Development.

INSTITUTIONALIZATION

The WAVES-Costa Rica Steering Committee has reviewed and begun implementing an updated technical work plan (2014–16). The Central Bank of Costa Rica (BCCR) is leading the technical work of compiling the accounts through database development and information management, statistics validation, and interagency collaboration. The Minister of Environment and Energy (MINAE) is designing a policy to mainstream NCA into government's policy priorities for 2015–18. The BCCR will complete the national accounts by the end of 2015 and then begin integrating environmental and economic statistics from the water and forest accounts.

The office of Vice-Minister of Finance is starting its work with public environmental expenditures accounting, with the goal of improved estimation and monitoring of government expenditures in the country. Also, the Vice-Minister of Planning is incorporating a natural resources wealth framework into the National Development Plan guidelines. In addition, the BCCR and MINAE are reviewing the possibility of compiling an energy account.

At the same time, bills on water, natural capital, and climate change are under discussion in Congress, with articles related to economic valuation of natural resources and its importance for policy decision making.

PROGRESS

In addition to leading the environmental accounts work and implementing the SNA 2008, the BCCR is using a new input-output matrix and supply-use tables for 2012 to analyze water and forest statistics, as a starting point for developing natural asset accounts.

WATER ACCOUNTS

While information gathering from government organizations is an ongoing process, preliminary water accounts have been compiled based on existing data and BCCR estimates. The sources used include water statistics from national accounts, hydrological balances, water use and pollution databases, and financial statements by water utilities. A case study on water accounts from the ESPH—a regional water utility that over a decade ago started a payment mechanism for protecting water resources—is under development. Water account modules and indicators will be completed in 2015.

FOREST ACCOUNTS

Early results are available from forest accounts incorporating physical and monetary values. BCCR representatives are coordinating with the National System of Conservation Areas and the National Forest Financing Fund to analyze the findings from the new national forest inventory and a carbon dynamics study for REDD+. Results from this work will feed into the forest account's integrated modules.

NCA is an effective tool to promote an inclusive model of economic growth that generates employment and environmental sustainability. Costa Rica's Government gives full institutional support to the WAVES initiative and the achievement of its objectives.

Edgar Gutiérrez, Minister of the Environment and Energy
Opening remarks at a regional workshop for Latin America on natural capital accounting and water accounts
Costa Rica, 17–19 December 2014

OUTREACH AND COMMUNICATION INITIATIVES

- WAVES made a presentation at the GLOBE 2nd World Summit of Legislators, Mexico, based on contributions to the Costa Rica chapter in the second edition of the GLOBE Natural Capital Legislation Study, published in June 2014.

- WAVES Country Coordinator and BCCR representatives presented Costa Rica´s work on environmental accounts at the Inter-regional Capacity Building Workshop on REDD+ and Aichi Biodiversity Targets, on 29–31 August 2014 in San José. The Country Coordinator moderated the Economics of Forest Restoration Roundtable.

- The WAVES Country Coordinator made a presentation on WAVES-Costa Rica at the 7th Annual Ecosystem Services Partnership Conference on 10 September 2014.The working session was dedicated to SEEA Experimental Ecosystem Accounting.

- Costa Rica's work on NCA in national planning was addressed in the Estado de la Nación (State of the Nation) 2014 annual report, published in November 2014. A background paper on NCA for the "Harmony with Nature" chapter included contributions from the WAVES Country Coordinator.

- A Water Accounting Regional Workshop took place on 17–19 December 2014 in San José with the participation of more than 45 representatives from Statistics Offices, Ministries of the Environment and Planning, and government organizations working with NCA in 10 Latin American countries.

2.1%

OF COSTA RICA'S GDP COMES FROM THE "FOREST ECONOMY"

- MINAE and BCCR representatives participated in the first WAVES Knowledge Exchange Workshop on Ecosystem Accounting, on 23–27 February 2015 in the Philippines.

- Representatives from BCCR and from several government agencies participated in technical workshops on 17–20 March 2015 on the subject of ongoing work with historical data from land use change, for the development of Costa Rica´s REDD+ reference level. The spatial analysis of forest landscape change over the last two decades, as well as carbon flows and stocks, will be key inputs for forest accounts.

- Representatives from BCCR participated in the 2015 Natural Capital Symposium at Stanford University in California on 23–25 March 2015. The symposium gathered people from around the world who are working to factor the value of nature into policy making.

GUATEMALA

BACKGROUND

Guatemala has an abundance of biodiversity and natural resources, such as water from rivers and lakes, minerals, tropical forests, and fertile soil for agriculture. Even though it has the largest economy in Central America, with a GDP per capita of US$3,500, unequal redistribution of income contributes to many social problems in Guatemala. To help reduce this inequality and promote sustainable development, the country is focusing on quantifying how natural capital supports the economy and integrating this information into development policy and planning.

Guatemala has a long background in constructing natural capital accounts. In 2006, a public-private-academic partnership funded by the Dutch Government and facilitated by Rafael Landívar University used the United Nations SEEA methodology to construct accounts for forests, water, energy and emissions, groundwater resources, fisheries, land and ecosystems, and environmental spending. Then in August 2013, Guatemala signed an Expression of Interest to join WAVES as a core implementing country, and WAVES-Guatemala was officially launched in March 2014.

INSTITUTIONALIZATION

The WAVES-Guatemala National Steering Committee is chaired by the Secretariat of Planning and includes the Ministry of Finance, the Ministry of Environment and Natural Resources, the Central Bank of Guatemala, and the National Institute of Statistics.

PROGRESS

The WAVES work plan components being implemented include: incorporating the natural capital accounting approach in the National Environmental Report, standardizing existing natural capital accounts data, and updating the forest accounts.

One of the first activities coming out of the work is a scoping study to assess levels of awareness of natural capital accounting and opportunities for increasing the understanding of its value for decision making. The study included feedback from governmental institutions and interviews with economists unconnected to the environmental sector in order to solicit a diverse perspective. The findings identified both opportunities as well as technical and political challenges to institutionalizing natural capital accounting in Guatemala.

- During the preparation phase, six policy notes were developed to inform the different stakeholders identified in the scoping study.

- WAVES Guatemala is seeking to update the flow and assets accounts of the SEEA Central Framework, setting as priorities energy and emissions, water, forests, subsoil assets, and waste accounts. This data can help political stakeholders better understand the impact of the environment on the economy and vice versa and will inform development policies and plans.

- In 2015, WAVES will support the update of the country's ecosystem accounts so that public and private stakeholders can have greater insight into the social, economic, environmental, and strategic relevance of Guatemala's many different ecosystems.

- In 2016, the team will explore piloting environmental-agriculture accounts, which will make Guatemala the first WAVES country to undertake this type of account to inform decisions on pressing food security issues.

- NCA will also inform the design of policy instruments to respond to the recently approved climate change law, including mitigation, adaptation and energy policy instruments.

OUTREACH AND COMMUNICATIONS INITIATIVE

- With the support of IIED, WAVES-Guatemala developed a communications and engagement strategy in 2014 to raise awareness and understanding of natural capital accounting and to increase the potential for data to be used in development planning and decision-making. The strategy identified primary audiences for engagement, including government departments and agencies as well as research institutes and universities, the private sector, and political parties.

- At the end of 2014, the team, including a new communications consultant, met with communication directors from institutions represented on the Steering Committee to discuss NCA in the context of the WAVES program, and to create alliances and synergies for implementing the strategy.In December 2014, the Guatemala team attended the first WAVES workshop for Latin America and the Caribbean to learn about NCA theory and practice, and to exchange experiences. A key output from the workshop was the idea to move forward with establishing a regional community of practice.

- The country took part in the WAVES Knowledge Exchange Workshop on Ecosystem Accounting in the Philippines in February 2015, which provided a valuable opportunity to learn about different experiences globally in ecosystem accounting.

INDONESIA

BACKGROUND

The Indonesian economy depends greatly on natural resource extraction and resource-based industry. As a rapidly growing middle-income country, Indonesia is facing the challenges of natural capital depletion, overpopulation, and climate change. The country is contributing significantly to global greenhouse gas emissions while at the same time being highly vulnerable to the impacts of climate change. All these have become the major concerns of the government and prompted it to seek a more resilience-oriented development pathway.

Beginning five years ago, the government started to shift towards a more climate-friendly development policy by developing systematic sets of mitigation and adaptation policies that have been budgeted and implemented. More recently, with the change of government and the new cycle of medium-term development planning, the Ministry of Planning has produced a new five-year development plan that is expected to gradually shift Indonesia's economic growth toward a more resilient path. At the end of 2013, the government joined the WAVES partnership to receive support in strengthening and expanding its SEEA-based natural capital accounts, developing ecosystem accounts, and institutionalizing the use of the SEEA-based studies to help with fiscal revenue planning on the extraction of natural capital.

INSTITUTIONALIZATION

The Steering Committee of Indonesia WAVES Program is in the process of being formed. It will be led by the Ministry of Planning. A Technical Committee and a wider Indonesian WAVES Forum have been established. At the implementation stage, it is expected that the Program will be led by a Country Implementing Team that includes statisticians, natural resources and environment economists, and relevant experts.

PROGRESS

The draft Project Concept Note for the Indonesia WAVES Program has been developed under the guidance of Steering and Technical Committees. A feasibility assessment to finalize preparation is expected to be finished by June 2015 so it can enter the implementation stage in July 2015. After a feasibility assessment, the program will begin with strengthening the SEEA data system and constructing land accounts. A stronger SEEA data system is a priority as the data will support the implementation of the national green development plan by monitoring its progress using wealth indicators like Adjusted Net Savings and Changes in Wealth as key macroeconomic sustainability indicators.

Land accounts will help with land use planning and governance systems, linking to a large number of socioeconomic issues, including forestry resource management, food production/food security, and environment degradation. The second stage of the feasibility assessment, toward the end of 2015, will include an assessment of the readiness to develop a pilot water account that is planned for one priority watershed in early 2016. Water security is high on the government's agenda in the new medium-term development plan for 2015–19.

OUTREACH AND COMMUNICATION INITIATIVES

- WAVES has been supporting capacity-building programs for the Government of Indonesia since 2013. This has included UNEP/UNDP WAVES Training in Bangkok (November 2013), ANU SEEA Training in Canberra (December 2013 and December 2014), and WAVES Ecosystem Accounting Training in Manila (January 2015).
- A more systematic capacity-building plan to support the components of the Indonesia WAVES Program will be developed after the feasibility assessment process.
- A communications strategy will be developed and implemented with the support of IIED for institutionalization of SEEA into the development policy-making process and will increase stakeholder awareness of the use of SEEA-based information as measures of economic resilience.

MADAGASCAR

BACKGROUND

Almost half of Madagascar's assets lie in its natural capital, which includes abundant crop and pasture land, water resources, mineral and non-mineral subsoil assets, as well as the biodiversity that supports the tourism industry. Natural resources also support a large majority of the country's predominantly poor and rural population and could become an important driver of development.

Since the swearing-in of the new President of the Republic of Madagascar in January 2014, the Government has prepared a General State Policy (Politique Générale de l'Etat), in which NCA features prominently in one of the five strategic axis: "Natural capital valuation and building resilience to natural disaster." This axis recognizes that the country's economy is strongly dependent on natural capital and the importance of managing this asset for the sustainability of growth. The integration of natural capital accounting in the planning process for economic and social development through the WAVES project is stated as one of the main priorities.

Institutionalization

Discussions are ongoing with the new Government to optimize the institutional structure for the implementation of NCA. In 2014, an NCA service was established within the Ministry of Economy, and staffed with a five-person team. Eventually this service will take on the role and attributions of the national WAVES coordinator, who is currently recruited under the WAVES trust fund. In addition, it was decided that a champion would be designated within every relevant ministry for each account under preparation. This champion would be responsible for the implementation of the work plan, including data collection and account development, with support from the coordinator, technical assistant, and the World Bank. Champions are selected based on their understanding of NCA and their level of engagement and commitment to the WAVES program. A champion has already been identified for macroeconomic indicators, as well as water and forest accounts.

PROGRESS

WATER ACCOUNTS

All the necessary data have been collected to build the physical stock account for the 2001–13 period, including renewable water stocks. These are currently being aggregated geographically as well as on a yearly basis. Discussions are being held within the Ministry of Water on the adequate basin delimitations, since these differ from one institution to another. The water physical stock accounts are expected to be finalized soon. In parallel, the Technical Working Group is collecting data on water use from relevant ministries and institutions—including the electricity and water management agency and the Ministry of Agriculture—to construct the water flow accounts.

FORESTRY ACCOUNTS

The forestry technical working group has gathered significant relevant data, including mapping of deforestation in 1990, 2000, 2005, and 2010, carried out by Conservation International and the National Environment Agency, the 1996 national forest inventory, and ad hoc inventories carried out from 2001 onward in selected areas. A company is compiling all the data and completing the modeling using satellite images. The goal is to provide data on the volume and surface areas of timber resources in 2005, 2010, and 2013 for protected and nonprotected areas and for each forest type.

Results show that in 2013, dense humid forests occupied the largest natural forest surface area in Madagascar (4.8 million hectares, 8.2 percent of forest cover land use), followed by spiny forests (2 million hectares), dense dry forest (1.9 million hectares), and mangroves (180,000 hectares). In absolute terms, dense humid forests suffered the biggest loss of surface area between 2005 and 2013, estimated at almost a quarter of the surface. Timber volume varies according to the forest type and geographic location. Preliminary results indicate that total timber volume has decreased for dense dry and dense humid forests, by 26 and 54 percent respectively. Conversely, spiny forests have increased in volume.

26% & 54%

IS HOW MUCH THE TIMBER VOLUME IN DENSE DRY AND DENSE HUMID FORESTS HAS DECREASED

MINERAL ACCOUNTS

The Technical Working Group has produced a draft of the physical stock accounts for cobalt, nickel, chrome, and ilmenite. It is also compiling available data to complete the monetary stock accounts, with the support from the Tax General Directorate, as well as the Companies General Directorate within the Ministry of Finance. In parallel, the TWG has prepared a methodological note on the calculation of the resource rent for these four mineral substances, providing a basis for development of the monetary stock accounts.

TOURISM ACCOUNTS

A visitor and enterprise tourism survey was conducted between September and November 2014, to generate information on the size of protected-area tourism and its contribution to national economic development. Full tourism satellite accounts will be developed to ensure accuracy of information by balancing out each account component. These accounts will provide information on tourism's contribution to GDP, employment in tourism, and tourist expenditure and consumption data. The data will be further disaggregated among tourists who visited a protected area and those who did not, to provide information on the contribution of nature-based tourism.

MACROECONOMIC INDICATORS

The TWG has prepared a macroeconomic policy note that explains the conceptual basis of natural capital accounting in the integrated management of Madagascar's assets, along with a description of selected macroeconomic indicators: adjusted net saving and natural capital wealth. A workshop will be organized to build capacity for estimating these two indicators and to ensure a common understanding among various institutions both on the definition of these indicators and on the methodology for calculating their value.

PHILIPPINES

The Maruyog Ridge Eco-Park is in Southern Palawan, one of the two sites where ecosystem accounts have been produced.

BACKGROUND

The Philippines has a bounty of minerals, cropland, timber, and coastal and marine resources. These natural resources make up an estimated 19 percent of the nation's wealth, the use of which has contributed to the consistent growth in GDP that the country is now experiencing. Rapid economic development is placing pressure on the country's already stressed natural resources, exacerbated by the impacts of global climate change.

The implementation of natural capital accounting in the Philippines is timely, as the current administration emphasizes governance reforms that include transparent and science-based decision making while pursuing sustainable, inclusive, and resilient growth.

The results of the policy analysis and recommendations from the WAVES-Philippines accounts will provide a solid understanding of how the government can address competing claims on the country's natural resources. Moreover, the results of the ongoing environmental accounting will inform government strategies and programs being considered in the next Philippine Development Plan.

The Laguna Lake Basin Technical Working Group participated in a hands-on GIS workshop to support the development of their ecosystem account.

INSTITUTIONAL ARRANGEMENT

The Philippines WAVES Steering Committee is chaired by the National Economic and Development Authority (NEDA), with members from key government agencies. The Steering Committee has met four times since 2013. Its last meeting focused on the development of national mineral accounts, national mangroves accounts, ecosystem accounts for Laguna Lake basin and Southern Palawan, and capacity building for the institutionalization of the modules deemed a priority.

NEDA coordinates the policy dialogue with the key partner agencies, while the Philippine Statistics Authority (PSA) is responsible for implementing macroeconomic indicators and natural capital accounts for minerals and mangroves. The Department of Environment and Natural Resources (DENR) coordinates with the Palawan Council for Sustainable Development in developing the ecosystem account of Southern Palawan, and the Laguna Lake Development Authority leads the ecosystem accounting in the Laguna Lake basin.

Meanwhile, mineral accounts are being developed by a small working group composed of representatives from NEDA, PSA, DENR-MGB, and the Technical Working Group for minerals under the Inter-Agency Committee on Environment and Natural Resources Statistics.

PROGRESS

MINERAL ACCOUNTS

The work on mineral accounts for gold, copper, nickel, and chromium began in 2014, based on the classification system on mineral resources from the 2009 United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources. As of March 2015, the PSA produced initial estimates of physical accounts for these four minerals, covering the accounting period from 2000 to 2012.

ECOSYSTEM ACCOUNTS

Work on ecosystem accounting in the Laguna Lake basin and Southern Palawan began in 2013 with scoping visits and a classification of ecosystem services to be included. For Laguna Lake, the categories include a land account containing land cover and changes; an ecosystem condition account indicating various water quality indicators, soil types, changes in bathymetry, and sediment loading; an ecosystem production account looking at the flow of ecosystem services such as fishery production, water

"To have economic prosperity in parallel with social cohesion and environmental protection is a state of development we all aspire for."

Arsenio Balisacan
Secretary of Socio-Economic Planning and Director General of the National Economic and Development Authority, the Philippines

supply, flood retention, and soil erosion regulation; and an ecosystem asset account focusing on water and fish stock. Accounts for Southern Palawan consist of land cover accounts by class and ownership, ecosystem condition accounts for terrestrial and coastal ecosystems and hydrological services, and ecosystem production accounts for upland, lowland, and coastal ecosystems.

Finally, the following activities and outputs were accomplished for both ecosystem accounts: a data gap and availability assessments/analysis, the compilation and consolidation of all existing secondary data into a geospatial database, draft technical reports for initial set of accounts, and the development of detailed work plans for further work.

CAPACITY BUILDING

To enhance the institutional capacity for SEEA implementation and natural capital accounting, the PSA spearheaded a training course on the SEEA-2012 Central Framework in September 2014, in collaboration with the Australian Bureau of Statistics (ABS). Additional training on the concepts and processes for land accounts, ecosystem accounting, and Valuation Methods was provided by experts from ABS and the University of Wageningen.

A follow-up training course on environmental accounting was also conducted by the ABS and the Australian National University (ANU) in Canberra in early December 2014, which was attended by a delegation of government officials from all key agencies. Further support was provided through a series of video conferences conducted by the ABS October through December 2014.

Several local experts provided training on GIS and biophysical modeling.

OUTREACH AND COMMUNICATIONS INITIATIVES

- The communications strategy for WAVES-Philippines covers stakeholder analysis and mapping, communication channel analysis, a strategic communications matrix, identification of communication materials, and development of a stakeholder directory. In December 2014, a team of public information officers and communications experts convened to assess the validity of the plan and to ensure that it was consistent with the WAVES-Philippines TWG roadmaps.

- Discussions will be held to analyze points of convergence between WAVES Philippines and other World Bank projects, such as Capturing Coral Reef and Related Ecosystem Services (CCRES), the Extractives Industries Transparency Initiative, and the Flood Master Plan.

- Additional support has been confirmed from the ABS (through funding from the Australian Department of Foreign Affairs and Trade (DFAT)) and the European Space Agency (ESA). ABS/ Australian DFAT will provide technical support and training, while ESA has provided satellite imagery and analysis for the two ecosystem accounts.

- Collaboration with the CCRES project in Southern Palawan is currently being explored.

RWANDA

BACKGROUND

Rwanda's small size, steep terrain, and high population density mean that sustainability of natural resource use is a critical factor in development. To achieve high growth and rapid poverty alleviation, Rwanda has formulated Vision 2020, which aims for the country to become a middle-income, knowledge-based economy that is competitive both regionally and globally.

In the 2nd Economic Development and Poverty Reduction Strategy to 2018, Rwanda aims to increase growth, reduce poverty, and become a center for green growth and investment. Environment and climate change are seen as cross-cutting issues that require mainstreaming sustainability into productive sectors and reducing vulnerability. Natural capital accounting can add value by raising attention on important natural resource sectors and providing consistent, reliable data for cross-sectoral assessments and sound policy formulation.

Rwanda signed the Gaborone Declaration in 2012 with the intention of beginning to use NCA as a tool to achieve sustainable development. Rwanda formed a National Steering Committee (NSC) in October 2013 and joined the WAVES Global Partnership as a core implementing country.

INSTITUTIONALIZATION

The Steering Committee is chaired by the Director General of the Rwanda Natural Resources Authority and the co-chairs are from the Ministry of Finance and Economic Planning and the Rwanda Environment Management Agency. A Technical Working Group has been formed, with membership based on relevance for the focus on land, water, and minerals. A National Coordinator assists in implementation by working closely with the key government agencies. The WAVES implementation plan is aligned with the annual planning and budgeting process.

90% of jobs

LAND IS THE BASIS FOR AGRICULTURE, WHICH ACCOUNTS FOR 34 PERCENT OF GDP AND 90 PERCENT OF JOBS, WHILE RWANDA'S POPULATION IS 80 PERCENT RURAL

PROGRESS

Rwanda completed the WAVES scoping phase in December 2014, and the NSC approved sectoral priorities and a work plan for the implementation phase. The NSC selected land and water as priorities. It also undertook exploratory work on environmental and economic issues related to mineral extraction, in preparation for later work on mineral accounts. During scoping, technical workshops and stakeholder meetings helped to shape the priorities and work plan. The implementation phase began in 2015 with a three-part strategy: technical work on land and water accounts, capacity building workshops and on-the-job training, and policy analysis based on the sectoral work and identified needs. This builds on work undertaken by the World Bank country team to estimate Adjusted Net Savings for the Planning Ministry in 2013-14.

The focus on land, water, and minerals resonates with the priorities identified in Rwanda's Vision 2020 and the EDPRS2. Land availability and productivity are key policy issues as potential constraints to agricultural growth, which is a key pillar of Rwanda's development agenda. Land is the basis for agriculture, which accounts for 34 percent of GDP and 90 percent of jobs, while Rwanda's population is 80 percent rural. Beyond agriculture, Rwanda's rapid urbanization will require strategic choices about land allocation and availability. Land accounts would help Rwanda to account for trends in economic values of land in different uses and to more systematically assess potential trade-offs.

Water resources are under pressure from population growth and rapid development. Water availability could constrain growth in some regions or key sectors or deter investment in some commercial activities. Water accounts can be used to determine the economic values of water in competing uses, compare relative contributions to employment and growth, and analyze trends over time. Account preparation will provide a platform for improving data exchange, institutional coordination, and measures for dealing with intersectoral trade-offs.

Rwanda's minerals sector is small but represents a large share of export revenues, and it is growing rapidly. There are high hopes for increasing investment and production, but the sector is currently relying on less-efficient processing technology and low-skilled labor. Potential environmental impacts and the cross-sectoral linkages to land allocation and water resources planning need more systematic study. Although data would need to be improved first, mineral accounts could ultimately help Rwanda to optimize resource rents from mining and to reinvest in physical, human, and social capital.

OUTREACH AND COMMUNICATION INITIATIVES

- On 27 May 2014, at an Inception Meeting on Natural Capital Accounting Projects, WAVES was introduced to a wide set of stakeholders in collaboration with the World Conservation Society (WCS), which is also working on ecosystem valuation.

- In June 2014, an introductory technical workshop helped to build understanding of the economic and statistical framework of the SEEA.

- In October 2014, a two-day training workshop provided by WAVES consultants deepened understanding of data needs and institutional requirements by focusing on extended examples from Botswana.

- In February 2015, a more in-depth capacity-building program was presented based on the WAVES partnership with Netherlands Statistics, which provided experts and detailed training exercises on land and water accounts.

- In April 2015, a stakeholder consultation workshop was undertaken to widen the discussion of NCA and to clarify expectations about WAVES communications efforts and outreach needs. A communications specialist was also recruited into the Rwanda team.

7. LOOKING AHEAD

The initial WAVES Core Implementing Countries are just over the midway point in their 5-year programs of support. There has been thinking on how WAVES should evolve over the coming years, particularly given the increasing number of countries with an interest in NCA that are looking to WAVES for support.

In mid-2014, the WAVES Global Steering Committee requested a mid-term review (MTR) to capture lessons from the first set of WAVES countries to inform work in new countries as well as inform decisions about future expansion plans. The Secretariat contracted two individuals, one with a strong background in NCA and the other with substantial experience in program review and evaluation, to carry out the MTR.

Given time and resource limitations, the MTR used a partial case study approach, looking broadly at program experience in all implementing countries, and examining two countries, Botswana and the Philippines, in more depth through site visits and interviews with key stakeholders.

The Review framework identifies four levels at which these critical factors and conditions occur, starting from the highest level of institutionalization of NCA in core implementing countries and its use in national policy processes; down to the next level of country achievement in terms of national ownership and capacity; to the level of WAVES program delivery; and finally to those factors and conditions that provide the structural and political support to the WAVES Global Partnership (see figure).

Some of the questions that the MTR is exploring include:

- What processes and information are needed during the preparation phase for individual countries to define achievable objectives within the WAVES program framework that take account of widely divergent contexts, natural resource endowments, policy priorities, and technical and institutional capacities?
- What factors contribute to strong political leadership of the process and willingness to institutionalize its outcomes?
- What capacities are required to institutionalize NCA and how can those capacities be most effectively developed?
- What factors contribute to effective institutional arrangements for WAVES program delivery, including roles and responsibilities of the Secretariat?
- What systems and measures are needed to assure necessary resources for program delivery (financial, technical, training, etc.)?
- What kinds of program monitoring information is needed for both WAVES and the countries to work effectively and how can that information be generated and shared efficiently?
- Is the political and structural support (e.g., human and technical resources, advice and guidance) provided to WAVES from the World Bank, donors, the Global Steering Committee, and the wider WAVES Partnership appropriate, adequate, and responsive to program needs and realities?

The report is in draft and the findings will be shared with the Steering Committee as well as the World Bank senior management in the next few weeks. The recommendations will inform the strategy of WAVES going forward. Although an expansion strategy was adopted a year ago, the strategy will have to be reviewed in light of the restructuring of the World Bank and its new priorities.

8. FINANCIAL REPORT

SUMMARY OF FINANCING AND ALLOCATIONS

This section presents the financial status of the WAVES Multi-Donor Trust Fund (MDTF) as of March 31, 2015.

Total expected contribution for the WAVES MDTF is US$22,486,175 from nine donors (Denmark, the EU, France, Germany, Japan, the Netherlands, Norway, Switzerland, and the United Kingdom), of which US$17,650,020 (about 78 percent) has been received to date (see Figure 8).

Figure 8. Pledge and Contribution Summary

		Pledges		Contribution Made		Outstanding Contribution	
DONOR	Currency	Amount in contribution currency	Amount in US$	Paid in contribution currency	Paid in US$ (at receipt)	Unpaid in contribution currency	Unpaid in US$ (at receipt)
United Kingdom - Department for International Development (DFID)	GBP	1,902,424	3,019,192	1,902,424	3,019,192	0	0
France - Agence Française de Developpement	EUR	811,556	1,051,046	811,556	1,051,046	0	0
Norway - Ministry of Foreign Affairs	NOK	20,000,000	3,066,250	12,500,000	2,132,950	7,500,000	933,300
Germany - Federal Ministry for Economic Cooperation and Development (BMZ)	EUR	1,787,000	2,255,142	1,787,000	2,255,142	0	0
Netherlands- Minister of Foreign Affairs	USD	2,857,142	2,857,142	1,925,000	1,925,000	932,142	932,142
Denmark - Royal Ministry of Foreign Affairs	DKK	10,000,000	1,702,610	7,500,000	1,339,272	2,500,000	363,338
EU-Commission of the European Communities	EUR	2,500,000	3,038,125	1,250,000	1,680,750	1,250,000	1,357,375
Japan - Ministry of Finance	USD	2,996,667	2,996,667	2,996,667	2,996,667	0	0
Switzerland- Federal Department of Economic Affairs, Education and Research	USD	2,500,000	2,500,000	1,250,000	1,250,000	1,250,000	1,250,000
TOTAL in USD	**USD**		**22,486,175**		**17,650,020**		**4,836,155**

Overall Data of WAVES MDTF

The total received (paid) contribution is US$17,650,020. The remaining balance of the WAVES fund is US$2,387,600 (see Figure 9).

Figure 9. Financial Summary Including Investment Income

Receipt	Current US$
Pledges	22,486,174.67
Contribution Received	17,650,019.75
Investment Income	62,749.33
Work Program Allocated	14,972,167.96
Disbursement (-)	8,738,705.43
Commitments (-)	1,772,239.89
Admin Fee	353,000.40
Fund Balance available to commit	2,387,600.72

Commitments of WAVES MDTF Program Contributions as of March 31, 2015

The WAVES MDTF of US$22,486,175 pledged amount has been set up to fund activities at both the global and the country level.

The country-level work supports specific activities in the eight WAVES core implementing countries (Botswana, Colombia, Costa Rica, Guatemala, Indonesia, Madagascar, the Philippines, and Rwanda) as well as regional workshops that provide technical support simultaneously to more than one WAVES country and country communications work.

In Rwanda, Guatemala, and Indonesia, preliminary country-level engagement includes conducting the scoping study, hiring a country coordinator, and setting up a national steering committee. The country communications work began during this fiscal year, with the support of IIED, to hire a communications coordinator in each country, conduct stakeholder analyses, develop country communications strategies, and develop preliminary country-specific communications products. The first peer-to-peer WAVES workshop was held for ecosystem accounting in the Philippines, with the participation of all eight WAVES countries as well as India. A regional workshop was held in Latin America, with the three WAVES countries plus six other countries coming together to discuss institutionalization and participate in an in-depth training on water accounts. Another regional workshop was held in Turkey, with 12 countries from the East and Central Asia region participating and being introduced to natural capital accounting with a focus on forest and water accounts.

The global work program includes the following pillars:

- WAVES global knowledge sharing
- WAVES methodology development and policy applications for ecosystem accounting
- Annual partnership forum
- Global communications strategy
- Engagement with the wider NCA community and participation in high-level events

Figure 10 details the amount of funds that have been disbursed and committed for the country and global activities, as well as the funds used for program administration.

Figure 10. Current Funds Disbursed and Committed for Country and Global Activities in US$ as of March 31, 2015			
	Disbursed	Committed	Disb+Com
Country Work, including in-country communications and training workshops			
Rwanda	249,629	23,579	273,209
Botswana	656,994	304,634	961,628
Madagascar	267,714	177,736	445,451
Colombia	606,952	148,314	755,266
Costa Rica	216,643	24,693	241,336
Guatemala	237,806	31,618	269,424
Indonesia	99,978	1,182	101,159
Philippines	899,343	62,233	961,576
Regional workshops	293,247	61,532	354,779
Preliminary country-level engagement	68,842	-	68,842
Preliminary country communications work	320,666	158,169	478,836
Subtotal Country Activities	**3,917,816**	**993,690**	**4,911,506**
Global Work Program			
WAVES global knowledge sharing (prior to FY15)—including training workshops	1,920,739	-	1,920,739
WAVES methodology development and policy applications for ecosystem accounting	1,178,617	190,502	1,369,120
Annual partnership forums	317,312	56,410	373,722
Global communications strategy	342,956	376,863	719,820
Engagement with the wider NCA community + high-level events	339,394	125,997	465,391
Subtotal Global Activities	**4,099,018**	**749,773**	**4,848,791**
Program Administration	721,871	28,777	750,648
Total	**8,738,705**	**1,772,240**	**10,510,945**

9. MONITORING AND EVALUATION REPORT

Participants at a Natural Capital Declaration Workshop in Capetown, South Africa in October 2014. From right to left: Atiyah Curmally, World Bank (panel moderator); Jan Van Mullem, Rabobank; Anton van Eltern, FMO; and Vicky Beukes, Nedbank.

Monitoring and Evaluation Report

The WAVES secretariat and the steering committee agreed to a monitoring and evaluation (M&E) framework in July 2013. The M&E framework has four components, corresponding to the four project development objectives (PDOs) of WAVES:

- PDO 1: Implement natural capital accounting (NCA) at national or subnational level in several developing and developed countries.
- PDO 2: Incorporate natural capital accounting in policy analysis and development planning.
- PDO 3: Develop standardized guidelines for ecosystem accounting for global implementation.
- PDO 4: Promote adoption of natural capital accounting beyond the WAVES partner countries

The first two PDOs are reported at both the global and the country level. The global-level results are included here in the annual report. Country-level results are provided as part of a stand-alone annual country report for each country.

For ease of presentation, the global results are reported first for the original five core implementing countries, originally scheduled to complete their programs by 2016, followed by the three new countries that began in 2014 or 2015 and are scheduled to finish in 2019. There is the possibility some of the original five WAVES countries may request an extension beyond 2016 to complete their work plan, if they have not used all their funding. We have not included that possibility in the Annual Report until the Steering Committee has an opportunity to discuss this issue, including setting criteria for an extension.

PDO 1: Implement Natural Capital Accounting

With regard to institutionalization (PDO 1.a), all countries have made substantial progress toward establishing dedicated units for NCA and staffing these units. Further progress was made this year in Botswana, Costa Rica, and Madagascar. In Botswana, in addition to the unit in the Department of Water Affairs, the Ministry of Finance and Development Planning established an NCA unit in the Macroeconomics Policy Division staffed by one senior economist and one junior economist. Costa Rica's Central Bank has assigned two staff to NCA. Under the new government in Madagascar, a unit for NCA has been established in the Ministry of Economy and Industry with three staff. All countries have met their targets for constructing asset accounts, flow accounts, and ecosystem accounts (PDO 1.2, PDO 1.3, and PDO 1.4), and three countries will have at least preliminary macroeconomic indicators of sustainability (PDO 1.5). Progress with ecosystem accounts has been greatly assisted by the development of training materials by the Policy and Technical Experts Committee and a week-long knowledge exchange workshop held in the Philippines for all WAVES countries plus India. The workshop supported peer-to-peer learning as well as learning from international experts, drawing on experiences in the Philippines, Guatemala, Australia, the Netherlands, India, and other countries. The outcome of the workshop included draft plans for each country for their ecosystem accounts.

Regarding development of capacity for compiling accounts (PDO 1.6), there continue to be very strong training and capacity-building programs in each country. The institutional basis for compilation of accounts, in terms of staff commitments, institutional responsibilities, and technical working groups, has been established. In addition, several regional and international training workshops have been held.

All three new countries will have completed their preparation phases by June 2016. Indonesia and Guatemala have had previous experience with NCA. Indonesia has staff in the National Statistical Office who had been compiling natural capital accounts for many years before WAVES, but there are no dedicated staff in other government agencies. Guatemala's program was carried out as a partnership between a university and government, but without permanent funding. One of the objectives under WAVES is to establish permanent capacity for NCA. In Rwanda, NCA is completely new; many agencies are very keen and there is strong leadership from the Rwanda Ministry of Natural Resources. Appropriate institutional arrangements will be explored over the next couple of years. All three countries participated in the Ecosystem Accounting Workshop, and Guatemala was able to make important contributions based on its previous work on NCA.

PDO 2: Incorporate NCA in Policy Analysis and Development Planning

With PDO 2, the original five WAVES countries are also meeting their targets. In Botswana, there continues to be high-level support, with NCA included in the President's State of the Nation Address and in the annual Water Workshop. Drafts were prepared for including NCA in the new National Development Plan, but the NDP has been postponed until next year, so the dialogue is on-going with the Ministry of Finance and Development Planning. NCA was also used in the World Bank's new Systematic Country Diagnostic for Botswana. In Colombia, NCA has been included in the country's new National Development Plan based on green growth, and it informs the compilation of green growth indicators for Colombia's accession to the OECD. NCA will also be used in the upcoming World Bank SCD for Colombia. In Costa Rica, a bill to include NCA in programs on water and forest management has been proposed to the new government that came into office this past year. The new government of Madagascar has an interim two-year National Development Plan that includes NCA in the pillar on natural capital; NCA has also informed the World Bank's Poverty Reduction Strategy Papers (PRSPs) and Interim Strategy Notes (ISN). In the Philippines, the water accounts for Lake Laguna are informing discussions about new water tariffs in the Metro Manila area. In the Philippines, the government is currently developing a framework for scaling up of ecosystem accounts to the provincial level

Although Guatemala and Indonesia are newcomers to WAVES, they already have some results because of their previous experience with NCA. In Guatemala, NCA was included in the National Development Plan last year and in the State of the Environment report this year. In Indonesia, based on previous policy reports on NCA by the World Bank, macroeconomic indicators of sustainability using NCA have been in included in the Medium-Term Development Plan.

The intermediate indicators, PDO 2.1 and PDO 2.2, are critical to provide the technical background and communicate results to policy makers in order to achieve PDO 2.a. WAVES countries have exceeded the targets to provide these reports and policy briefs with the assistance of in-country communications plans and staff. WAVES will only succeed with in-country capacity to use the accounts for policy analysis. In-country capacity is being developed in several ways: first, most of the work is being carried out by national staff with technical support and training from experts (domestic and international), so there is a large component of "learning by doing." In addition, there is formal training through seminars, workshops, and training courses, offered, for example, by the Australian National University and possibly the University of Botswana. Learning from peers through regional and international workshops is also critical, and several workshops have been held for this, notably the Knowledge Exchange Workshop on Ecosystem Accounting held for all WAVES countries plus India in the Philippines (February 2015) and the Latin American workshop on water accounting used to launch the LAC Community of Practice (December 2014). Further knowledge exchange workshops are planned, and a scoping study for the development of a LAC Community of Practice is under way, with a report expected in July 2015.

PDO 3: Develop Standardized Guidelines for Ecosystem Accounting for Global Implementation

There has been significant work on the intermediate outcome indicators. For PDO 3.1, three interim pilot study reports have been published, and three workshops on scaling up and valuation have been held. In addition, further testing on methodological issues have been undertaken in the Philippines and Botswana. Under PDO 3.2, both guidance notes 4 and 6 have been finalized for mapping and valuing costal and marine ecosystem services and for biophysical modeling of watershed ecosystem services, respectively. Guidance note 7, integrating ecosystem services measures into accounts, was cancelled due to similar work being undertaken at UNSD, so as to avoid overlap of work. PDO 3.3 is key for showing policy use of accounts from around the world. Although the original target was for five policy briefs to be published, four will be published by the end of May 2015, and the final brief on the uses of accounts in economic models will be published in June 2015. PDO 3.4 provides key support to Core Implementing Countries and partners by developing training material. The target was achieved over this year, and training material has been developed and tested for water accounting, ecosystem accounts, general training,

valuation for ecosystem accounting, and biophysical and GIS modeling for ecosystem accounting.

We are also continuing collaborative work with our strategic partners—UNDP, UNEP (Green Economy, TEEB, Poverty Environment Initiative, BIOFIN), and UNSD—as described in the main text of this annual report. This work includes development of training materials, joint regional training workshops, and joint work in countries where we overlap, to make best use of the strengths of each partner. The PTEC has also demonstrated a strong commitment to strengthening its role in terms of quality assurance and knowledge transfer and to taking a leadership role in serving as key ambassadors for NCA.

PDO 4: Promote Adoption of NCA beyond the WAVES Partner Countries

No new Core Implementing Countries have joined the WAVES program because of changes in World Bank management and a review of all partnership programs. As a result, PDO 4.a is pending the review of the expansion strategy by the new management team. However, PDO 4.b has been successful, and WAVES has played a supporting role in the implementation of NCA programs in 18 countries around the world—Chile, Turkey, Brazil, Uruguay, Mexico, Ecuador, and 12 Central Asian countries—by organizing training workshops and facilitating knowledge exchange.

WAVES is also working to create synergies on NCA with the private sector and financial sector. WAVES co-organized a two-day workshop, hosted by the World Bank, to bring together members from the Natural Capital Declaration (financial sector NCA), the Natural Capital Coalition (private sector NCA, non-financial sector), and governments (public sector NCA).

Within the last year, the number of page views on the WAVES' website has increased to 100,205. The number of unique visits, which refers to the total number of people who have ever visited the website, went up to 25,434. Most important, traffic on the website has increased by 25 percent since last year, which demonstrates the interest in content on NCA. The rising number of tweets promoting natural capital has also driven substantial traffic to the website. In fact, "natural capital" has proved to be one of the most popular hashtags on the WB Environment website, keeping the public engaged.

The WAVES site has been complemented by a Knowledge Platform that will serve as a one-stop website for all publications and knowledge on NCA.

Global Results-Based Monitoring Matrix – PDO 1 (WAVES 5 Core Countries)

OBJECTIVES & OUTCOME (RESULTS) INDICATORS	Baseline June 2011	Prep year June 2012	Year 1 June 2013	Year 2 June 2014	Year 3 June 2015	Year 4 June 2016
PDO 1. To implement natural capital accounting in partner developing and developed countries						
Outcome indicators:						
a. Number of core implementing countries with a commitment to institutionalize natural capital accounting based on lessons learned from the WAVES program	**Colombia** (Stats Office, 6 staff)	Target: 1 country (Colombia)	Target: 1 country (Colombia) Achieved: 1	Target: 1 country Achieved: 3 **Botswana–**Department of Water Affairs unit for water accounts with 3 staff **Colombia–**6 staff in Stats Office **Philippines–**4 staff in Philippines Statistics Authority	Original Target: 2 countries New Target: 3+ countries Achieved: 5 (Philippines, Colombia) **Botswana–**2 staff hired in Ministry of Finance & Development Planning; Department of Energy commits 3 staff for energy accounts **Costa Rica–**2 staff in Central Bank **Madagascar–**Director for NCA established in Ministry of Economy with 5 staff; NCA included as a pillar in the new 2-year Development Plan	Target: 5 countries (Botswana, Colombia, Costa Rica, Madagascar, the Philippines) **Botswana–**Agreement on regular reporting for key indicators; staff commitments in NDP11 **Philippines–**Staff commitments for additional accounts in other government agencies

Intermediate Outcomes Indicators						
1.1 Number of core implementing countries that have completed the milestones for the WAVES Preparation Phase*	None	Target: 2 countries Achieved: 2 **Botswana** **Madagascar**	Target: 5 countries Achieved: 4 **Philippines** **Colombia**	Target: 5 countries Achieved: All 5 **Costa Rica**	All achieved	
1.2 Number of core implementing countries with asset accounts for selected natural assets	**Colombia-** Subsoil asset accounts	Target: 1 country	Target: 1 country	Target: 2 countries complete at least 1 asset account Achieved: All 5 countries started; 4 countries complete at least 1 account **Botswana–**Surface water stock accounts, subsoil asset accounts (phase 1) **Colombia–**Updated subsoil assets, preliminary national forest accounts, water asset accounts for 1st pilot site **Costa Rica–**Preliminary national forest accounts **Madagascar–**Water stock by river basin	Target: 5 countries complete at least 1 asset account Achieved: 5 have completed, updated, and/or expanded asset accounting **Botswana–**Subsoil assets (phase 2), preliminary groundwater water stock accounts **Colombia–**National and regional forest accounts **Costa Rica–**National forest accounts **Madagascar–** Subsoil assets for large mines, forest accounts for Non-Protected Areas only; water stock by river basin **Philippines–** Preliminary subsoil assets and land accounts	Target: 5 countries Updated or additional accounts: **Botswana–**Subsoil assets updated; total water stock accounts by region **Colombia–**Updated accounts; water asset accounts for 1 major river basin **Costa Rica**–Updates existing accounts **Madagascar**–Complete forest accounts: (Protected Areas + non-Protected Areas), mineral accounts for small-scale mines**;** update other asset accounts **Philippines**–Mangrove accounts, subsoil assets updated, land accounts for ecosystem pilots

1.3 Number of core implementing countries with flow accounts for selected natural resources	Colombia-national water, energy accounts	Target: 1 country (Colombia)	Target: 2 countries Achieved: 2 **Botswana**–Preliminary water accounts **Colombia**–Updated accounts	Target: 3 countries Achieved: all countries start, 4 countries have at least 1 account **Botswana**–Time series of national water accounts **Colombia**–Water accounts at national level and for 1 pilot watershed **Costa Rica**–Preliminary national water and forest product accounts **Philippines**–Preliminary water accounts for Laguna Lake	Target: 5 countries Achieved: all 5 **Botswana**–Water accounts (update national accounts, accounts by water management area, new sectoral accounts), phase 1 energy accounts (electricity) **Colombia**–Updated water, forest accounts **Costa Rica–**National water accounts, forest product accounts, physical flow accounts **Madagascar**–Water flow accounts for 1 river basin, partially completed **Philippines**–Preliminary water accounts for Laguna Lake basin pilot site	Target: 5 countries with completed and/or updated accounts **Botswana**–Monetary accounts for water, accounts for recycled water; energy accounts for major companies **Colombia**–Updated water, forest accounts **Costa Rica**–Updated water, forest accounts; environmental expenditure accounts **Madagascar–**Water flow accounts of 1 basin completed; national water accounts by river basin **Philippines**–Final water accounts for Laguna Lake basin pilot site, preliminary mangrove product accounts

1.4 Number of core implementing countries with experimental ecosystem accounts	None	Target: 0 countries	Target: 0 countries	Target: 2 countries Achieved: Work started in 2 countries **Colombia**–Preliminary results for 1 of 2 or 3 pilot sites **Philippines–**Work started in 2 sites	Target: 3 countries Achieved: 3 countries with at least preliminary results **Colombia**–Final results for first pilot site, work started on second pilot site **Madagascar**–Ecosystem accounts for protected area, ecotourism **Philippines–**Preliminary results for 2 pilots	Target: 5 countries New target: 4 countries **Botswana**–Preliminary accounts for northern Botswana **Colombia–**Final report on 2 pilot sites **Madagascar**–Expand ecosystem accounts for water and carbon services **Philippines**–Final results for 2 pilot sites
1.5 Number of countries with macroeconomic indicators based on NCA	None	Target: 0 countries	Target: 0 countries	Target: 1 country Achieved **Botswana**–Preliminary estimates	Original Target: 2 countries New Target: 3 countries Achieved: 3 countries **Botswana, Madagascar, Philippines (preliminary)**	Target: 3 countries **Botswana, Madagascar,** **Philippines (final)**

1.6 Number of countries with capacity for maintaining NCA (evidenced by dedicated government staff for NCA and regular reporting mechanism for production of natural capital accounts)	**Colombia** Statistics Office has unit for NCA, 6 staff	Target: 1 (Colombia)	Target: 1 (Colombia)	Target: 1 country Achieved: 5 countries **Botswana–**Water accounts unit in Department of Water Affairs created with 3 staff trained; technical working groups (TWG) for all accounts established and receiving training **Colombia–**Statistics Office staff, Technical Committee for accounts receiving training **Costa Rica–**2 staff in Central Bank for NCA, TWGs for water, forest accounts established and receiving training **Madagascar–**TWGs established and trained for all accounts **Philippines**–Unit in PSA created with 4 staff, TWGs established for ecosystem accounts; 10 government staff received training at Australian National University course; training course on ecosystem accounting and SEEA, and other workshops	Original Target: 3 countries New target: 5 countries Achieved: 5 countries Training continues through in-country, regional, and other training workshops and by working with international experts on the accounts (see country reports for detail)	Target: 5 countries Training continues in all countries through in-country, regional, and other training workshops, and by working with international experts on the accounts

* National Steering Committee (NSC) established, Feasibility study approved by NSC and WAVES Secretariat, Stakeholder consultation on draft work plan, Work plan approved by NSC and WAVES Secretariat.

Global Results-Based Monitoring Matrix – PDO 2 (WAVES 5 Core Countries)

OBJECTIVES & OUTCOME (RESULTS) INDICATORS	Baseline June 2011	Prep year June 2012	Year 1 June 2013	Year 2 June 2014	Year 3 June 2015	Year 4 June 2016
PDO 2. To incorporate natural capital accounting in policy analysis and development planning in core implementing countries						
Outcome Indicators:						
a. Number of core implementing countries in which 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)	None	Target: 0 countries **Botswana–** Government hosts Heads of State Summit on African Sustainability, resulting in Gaborone Declaration to implement NCA signed by 10 countries	Target: 2 countries Achieved: **Botswana–**Mid-term Review of National Development Plan 10 calls for NCA in NDP 11; President's Botswana Economic Advisory Council includes progress on NCA in briefing pack for its biannual meetings **Philippines–** Executive Order on mining for mineral accounts	Target: 2 countries Achieved: **Botswana–**President's State of Nation Address, national water policy, IWRM policy call for NCA; Government policy brief on water management calls for water accounts as management tool; Botswana hosts follow-up to 2012 Gaborone Summit to establish secretariat for NCA; NCA center stage at the National Water Pitso (water sector stakeholders consultations) **Colombia–**CONPES (Environmental Management Plan for first pilot watershed) calls for NCA as management tool **Philippines–**NCA included in revised Philippines Development Plan as management tool	Target: 5 countries Achieved: **Botswana–**NCA informs World Bank SCD; NCA in President's State of the Nation Address; NCA prominent in Water Pitso (water sector stakeholders consultations) **Colombia–**NCA included in Green Growth NDP **Costa Rica–**Proposed bills for water and forest include NCA **Madagascar–**NCA informs PRSP and World Bank ISN **Philippines–**Water pricing discussions for Laguna Lake based on preliminary results from ecosystem accounts; land use planning in S Palawan based on accounts; Secretary of DENR requests inclusion of billion-dollar dike project in Laguna Lake ecosystem account and upscaling of accounts to LGU/province level	Target: 5 countries **Botswana–**MFDP commits to mainstream NCA in draft of NDP 11; NCA informs new fiscal rule for mineral revenues; NCA in new Long Term Vision **Colombia–**NCA informs Forest Strategic Plan and policy instruments for River Basin management **Costa Rica–**NCA informs dialogue on forest policy and strategies **Madagascar–**World Bank CPF uses NCA; other use TBD with new government **Philippines–**Mining policy informed by mineral accounts and ecosystem pilot in southern Palawan; Philippines Development Plan informed by macro indicators; policy dialogue on ecosystem accounts

Intermediate Outcomes Indicators						
2.1 Number of core implementing countries with policy notes and analytical work based on NCA	None	Target: 0 countries	Target: 2 countries Achieved: **Botswana–** DWA water policy brief and first technical report	Target: 2 countries Achieved: All countries have at least 1 policy note, analytical report **Botswana**–Updated technical reports and new notes on water, first technical report on minerals & macro policy, first technical report on energy **Colombia**–Technical report and policy note on national forest accounts, and on water accounts for first pilot ecosystem **Costa Rica**–First policy notes on national forest and water accounts **Madagascar**–First macro indicators policy note **Philippines**–First ecosystem accounts policy note	Target: 5 countries Achieved: All countries have policy notes **Botswana**–Policy notes on water and on sustainability (macro indicators and minerals); policy notes on water **Colombia**–Policy note and technical report on second and third ecosystem pilots **Costa Rica**–Second policy note and technical reports on forest and water accounts **Madagascar**–Macro indicators note, preliminary forest accounts (area and timber volume); preliminary ecotourism report for protected areas **Philippines**–Macro indicators-minerals; 2 technical reports and series of policy briefs on ecosystem accounts; note on water pricing for Laguna Lake	Target: 5 countries Achieved **Botswana**–New technical reports, policy notes, and briefs on sustainability, macro indicators, and minerals; water management **Colombia**–Policy note and technical report on ecosystem accounts; second phase policy notes on forest accounts **Costa Rica**–New policy notes and technical reports on forest and water accounts, and environmental expenditure accounts **Madagascar–**Mining and forest sector policy notes, national ecotourism accounts, additional TBD **Philippines**–Final technical report and policy notes on 2 ecosystem pilot sites; note on scaling up ecosystem accounting to the rest of the country

2.2 Number of countries with capacity for using NCA in policy dialogue (evidenced by government staff trained in using NCA)	None	Target: 1 countries **Botswana**–Policy makers workshop for 35+ people **Philippines–**2 training workshops for policy makers and people from user agencies (government, academic, CSOs)	Target: 1 country **Botswana–**5 staff attend water account training workshop; 3 internal training seminars on uses of water accounts at DWA **Colombia–** NCA training workshop for 50+ people **Costa Rica**–Training workshop for 20+	Target: 1 country **Botswana–**2 workshops on NCA for 40+ participants; 3 training seminars on water accounts at DWA; seminar on energy accounts; initial seminars held for all other TWGs **Colombia–**3 staff attended UNSD-WB training in SEEA (Brazil); hosted regional ecosystem account training 30+ people **Costa Rica–**3 staff attended UNSD-WB training in SEEA (Brazil), 2 attended Colombia workshop; 2-day training by international expert for 15+ policy makers **Madagascar**–Training of 20 staff on policy use of NCA by international expert **Philippines–**2-day training workshop on ecosystem accounts for 110+ people; 1-week training course in ecosystem accounts for 35+ staff; 1-week training course on SEEA, 4 staff sent to regional SEEA training course in Bangkok; 10 staff sent to NCA course in Australia	Target: 5 countries All countries: Regional and national training workshops **Botswana–**2 training courses on water accounts; 2 one-week training courses on ecosystem accounts; 3 seminars on mineral accounts and macro indicators; training on energy accounts **Colombia, Costa Rica–** Forest accounting workshop for 30+ people; water accounting workshop for 30+ people; 1-week ecosystem accounting workshop for 30+ people **Madagascar**–Continued training of staff in Ministry of Economy on uses of NCA by international experts; 1-week course on ecosystem accounting **Philippines–**4 staff attend NCA course in Australia; two 1-week training courses on ecosystem accounting; 1-week course on SNA/SEEA, 1 3-day training on macroeconomic indicators, several hands-on training sessions on data management and analysis, GIS, biophysical modeling and valuation	Target: 5 countries All countries: Regional and national training workshops, TBD

Global Results-Based Monitoring Matrix – PDO 1 (3 New WAVES Countries)

OBJECTIVES & OUTCOME (RESULTS) INDICATORS	Baseline June 2014	Prep year 2014	Year 1 June 2015	Year 2 June 2016
PDO 1. To implement natural capital accounting in partner developing and developed countries				
Outcome Indicators:				
a. Number of new implementing countries with a commitment to institutionalize natural capital accounting based on lessons learned from the WAVES program	**Indonesia-** (Statistics Office, 4 staff)	Target: 3 Achieved: 3 **Guatemala**–Preparation phase ended December 2014; Steering Committee established (5 institutions); mobilized resources from WB/WAVES, including hiring consultants; scoping study finalized **Indonesia**–Steering Committee established (4 Ministries); Technical Team established with members from 4 key ministries **Rwanda**–Mobilized resources from WB/WAVES, including hiring consultants; initiated scoping study	Target: 3 Achieved: 1 **Guatemala**–National Institute of Forests will produce updated national forest accounts **Indonesia**–Establishment of environmental accounts unit suggested **Rwanda**–Institutional arrangements for land and water accounts into national accounts and development planning suggested	Target: 3 **Guatemala**–Environmental expenditures will be generated from the public Central Government budget system; INAB will submit forest accounts to its steering committee **Indonesia**–Implementation phase starts July 1, including establishment of country coordinator and TWG; updated SISNERLING for energy, forest, and minerals accounts institutionalized **Rwanda**–Land accounts institutionalized; data methods collection revised for water accounts
Intermediate Outcomes Indicators:				
1.1 Number of new implementing countries that have completed the milestones for the WAVES Preparation Phase*		Target: 2 Achieved: 2 **Guatemala, Rwanda** **Indonesia partly achieved**	Target: 3 Achieved: 3 **Indonesia completed** (feasibility assessment to be completed June 20)	All achieved

1.2 Number of new implementing countries with asset accounts for selected natural assets		None **Guatemala**–No accounts updated or produced during the preparation period	Target: 3 Achieved: 3 Work started in 3 countries **Guatemala**–Digital platform and guidelines developed for SEEA asset accounts to have regular updates (forest, land) **Indonesia–**Data availability for land and water accounts assessed by June 20 **Rwanda**–Assessment of data availability on land accounts	Target 3 **Guatemala**–Update of asset accounts (forests, subsoil assets, land) **Indonesia**–Subsoil asset accounts updated and compiled according to SEEA-CF 2012; preliminary land account; development of framework and data assessment for water account **Rwanda**–Preliminary land accounts consolidated; preparatory work planned for minerals
1.3 Number of new implementing countries with flow accounts for selected natural resources		Target: 1 Achieved: 1 **Guatemala**–Flow accounts produced by the academic sector and systematized in 6 "policy notes"	Target: 3 Achieved: 3 partial or completed Work started in 2 countries **Guatemala**–Digital platform and guidelines built for SEEA flow accounts (forest, water, waste, energy, emissions) that will allow ease of update in the future **Indonesia**–Flow accounts for natural resources within existing SEEA/ SISNERLING assessed **Rwanda**–Assessment of data availability on water accounts	Target: 3 **Guatemala**–Update on flow accounts **Indonesia**–Update on flow accounts for natural resources within existing SEEA/ SISNERLING updated to SEEA 2012; preliminary monetary account for land **Rwanda**–Draft water accounts developed
1.4 Number of new implementing countries with experimental ecosystem accounts			Target: 2 Achieved 2 Work started in 2 countries **Guatemala**–Experimental ecosystem accounts methodology produced **Rwanda**–Collaboration with Wildlife Conservation Society agreed to scale up WCS site for ecosystem accounting	Target: 2 **Guatemala**–Experimental ecosystem accounts to be implemented according to methodology; sites TBD **Rwanda–**Preliminary report on scaling up ecosystem accounting from 2 sites, joint work with WCS

1.5 Number of new implementing countries with macroeconomic indicators based on NCA			Target: 2 Achieved: 2 Work started in 2 countries **Guatemala**–Scoping and methodology to develop adjusted net savings estimates for the Central Bank **Indonesia**–Preliminary macroeconomic indicators	Target: 3 **Guatemala**–Update of adjusted net savings; new base year SNA will include balance sheets improved by NCA; green growth macro indicators will be produced **Indonesia**–Macroeconomic indicators expanded and updated **Rwanda–**WAVES results inform green indicators and national M&E prepared by Rwanda
1.6 Number of new implementing countries with capacity for maintaining NCA (evidenced by dedicated government staff for NCA and regular reporting mechanism for production of natural capital accounts)		Target: 1 Achieved: 1 **Indonesia–**SEEA training by ABS for technical staff of 4 key ministries	Target: 3 Achieved: 3 **Guatemala**–Institute of Statistics has institutionalization plan; INAB will have one person dedicated part-time to forest accounts plus outside consultants; National Protected Areas Council will have at least one person dedicated part-time to forest and ecosystem accounts plus outside consultants **Indonesia–**Further SEEA training by ABS **Rwanda**–NCA coordination and reporting unit established in MINIRENA around National Coordinator, system of monitoring developed; 3-year program of training by Statistics Netherlands	Target: 3 **Guatemala–**Ministry of Finance, National Forestry Institute, and Protected Areas Council will continue dedicating at least one technician to NCA **Indonesia**–National SEEA Training; SEEA Training on land account; economic resources valuation training; ANS training **Rwanda**–Own-budget allocations established; NCA reporting regularized within key institutions

* National Steering Committee (NSC) established, Feasibility study approved by NSC and WAVES Secretariat, Stakeholder consultation on draft work plan, Work plan approved by NSC and WAVES Secretariat.

Country Results-Based Monitoring Matrix – PDO 2 (3 New WAVES countries)

OBJECTIVES & OUTCOME (RESULTS) INDICATORS	Baseline June 2014	Prep year 2014	Year 1 June 2015	Year 2 June 2016
PDO 2. To incorporate natural capital accounting in policy analysis and development planning in core implementing countries				
Outcome Indicators:				
a. Number of new implementing countries in which 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)		Target: 2 Achieved: 2 **Guatemala**–National Development Plan K'atun has been published, citing directly NCA **Indonesia**–Macroeconomic policy analysis (AAA) produced under Green Development	Target: 3 Achieved: 2 **Guatemala**–Ministry of Environment will publish its report from an NCA perspective **Indonesia**–Policy input on sustainability indicators in the new National Medium-term Development Plan **Rwanda–**Policy studies on land and water planned for Q3-4, 2015	Target: 3 **Guatemala**–Wealth accounting; work on report from MoE will continue; Report from the President's Affairs, Report of the Climate Change Law, and Report of the Policy of Social Development will use inputs from NCA **Indonesia–**NCA acknowledged by government as key indicators for monitoring economic sustainability **Rwanda**–Policy studies and recommendations are aligned with national planning and budgeting

Intermediate Outcomes Indicators:				
2.1 Number of new implementing countries with policy notes and analytical work based on NCA		Target: 1 Achieved: 1 **Guatemala–**6 policy notes produced, on experience of developing and institutionalizing NCA through a public-academic-private partnership	Target: 3 Achieved: 2 **Guatemala**–Policy notes on green economy **Indonesia–**Green Growth macroeconomic policy note developed **Rwanda**–Draft policy notes planned to focus on initial sectors	Target: 3 **Guatemala**–Content of policy notes for the year TBD **Indonesia–**AAA on Economic Rent Extraction to inform Fiscal Policy; development of reinvestment policy **Rwanda**–Policy analysis using land accounts will be undertaken
2.2 Number of new implementing countries with capacity for using NCA in policy dialogue (evidenced by government staff trained in using NCA)		Target: 1 Achieved: 1 **Guatemala–** Communications strategy work started with help from IIED	Target: 1 Achieved: 1 **Guatemala**–Communications strategy will feature a reach-out strategy for various groups, such as government staff; Ministry of Environment will train its various departments in NCA perspective	Target: 3 **Guatemala**–Training expected to permeate University Economics Courses at Rafael Landivar University **Indonesia**–Training for government staff on the policy use of NCA **Rwanda**–Deeper training program planned and implemented; more exchanges with other WAVES countries

Global Results-Based Monitoring Matrix – PDO 3

OBJECTIVES & OUTCOME (RESULTS) INDICATORS	Baseline June 2011	Prep year June 2012	Year 1 June 2013	Year 2 June 2014	Year 3 June 2015	Year 4 June 2016
PDO 3. To develop guidelines for implementing ecosystem accounting for global implementation						
Outcome Indicators:						
a. International guidelines are developed on physical and monetary accounts for ecosystems in the SEEA Experimental Ecosystem Accounts (Vol. 2)	None	Input provided on valuation to Draft SEEA EEA; financial support provided to editing of SEEA EEA	Achieved: SEEEA EEA approved by UN Statistical Commission as best practice guidelines	Date for next revision not set	Date for next revision not set; work on valuation for input to rev SEEA-EEA	Date for next revision not set; work on valuation for input to rev SEEA-EEA
Intermediate Outcomes Indicators:						
3.1 Ecosystem Services Accounting (ESA) concepts, data sources, and methods tested	Not started	Target: Identifying partners for pilot studies Achieved: Cooperation agreed with CI, Wageningen University, and WWF/TNC/ Stanford U/ Minnesota U	Target: Testing methods in externally financed projects Achieved: 3 ecosystem accounting pilots studies initiated (Peru, Indonesia, India)	Target: 3 pilot studies testing methods for scaling up and valuation Achieved: 3 pilot studies ongoing	Target: 3 pilot study reports published; 3 workshops on scaling up and valuation held; testing methodology issues in CICs work: Philippines, Botswana Achieved: interim reports published, all projects still ongoing; testing methods ongoing in Philippines and Botswana	Target: Report and papers from workshops published; reports on methodology tests in Philippines and Botswana published

3.2 Guidance notes for using different methodologies for Ecosystem Services Accounting developed	Initial workshop held	Target: Setting up experts committee Achieved: Policy and Technical Experts Committee (PTEC) formed; first annual meeting held	Target: Workshop on designing pilots; methodology issues identified Achieved: Research agenda established; 2 notes commissioned; workshop providing input to note on designing pilot held	Target: 3 guidance notes finalized Achieved: 3 guidance notes Finalized: designing pilots on ESA (overview), scoping studies for pilots, biophysical modeling and mapping; 3 notes commissioned: mapping and valuing coastal and marine ES, valuation of regulating ES, biophysical modeling of watershed ES	Target: Notes on mapping and valuing coastal and marine ES and on biophysical modeling of watershed ES finalized; note commissioned on integrating ES measures into accounts Achieved: Notes on mapping and valuing coastal and marine ES and on biophysical modeling of watershed ES finalized; note on valuation of regulating ES ongoing; note on integrating ES measures into accounts cancelled due to similar work at UNSD	Target: Note on valuation of regulating ES finalized; report on issues and recommendations for ecosystem accounting
3.3 Policy examples of natural capital accounting compiled from existing literature	Not started	Target: Stories on policy uses compiled Achieved: Presentations with policy uses compiled	Target: Survey of user/uses of accounts Achieved: Survey completed	Target: Overview report Achieved: Overview report published	Target: 5 policy briefs published Achieved: 4 policy briefs to be published by May 31; overview of uses of accounts in economic models to be published in June	Target: 5 additional policy briefs published; overview of policy analysis with accounts, including tools and methods, published

3.4 Training material developed	Not started	Not started	Not started	Target: 1. Forest accounting training material Achieved: Forest accounting; draft training material on ecosystem accounting	Target: Water accounting; ESA general training; valuation for ESA; biophysical and GIS modeling for ESA Achieved: All trainings have been developed and tested	Target: Web-based trainings launched *Target to be re-evaluated pending discussions with partners*

Global Results-Based Monitoring Matrix – PDO 4

OBJECTIVES & OUTCOME (RESULTS) INDICATORS	Baseline June 2011	Prep year June 2012	Year 1 June 2013	Year 2 June 2014	Year 3 June 2015	Year 4 June 2016
PDO 4. To promote the adoption of ecosystem and natural capital accounting beyond the WAVES core implementing countries.						
Outcome Indicators:						
a. Number of countries beyond the original 5 WAVES Core Implementing countries undertaking natural capital accounting, where WAVES has played a significant role in implementation (for example, countries having received direct technical support from WAVES Secretariat)	None	Target: 0	Target: 0	Target: 2 Achieved: 3 Indonesia, Rwanda, Guatemala	Original Target: 3 Achieved: 0, pending review of expansion strategy by new WB management	Original Target: 4 New Target: TBD
b. Number of countries beyond the original 5 WAVES Core Implementing countries undertaking natural capital accounting, where WAVES has played a supporting role in implementation (for example, through WAVES Secretariat participation in workshops)	None	Target: 0	Target: 0	Target: 3 Achieved: Brazil, Chile, Mexico	Target: 4 Achieved: Turkey, Brazil, Chile, Uruguay, Mexico, Ecuador, 12 Central Asian countries	Target: 5
Intermediate Outcomes Indicators:						
4.1 Number of countries beyond the original WAVES Core Implementing countries participating in knowledge sharing activities (Annual Partners meetings; international workshops, south-south exchanges)	None	3*	Target: 30**	Target: 40 Achieved: 60+ ***	Target: 50 Achieved: 50+	Target: 60

4.2 Number of WAVES website hits	No website	Website is launched	Target: 20% increase Achieved: 35,725	Target: 20% increase Achieved: 74,740	Target: 20% increase Achieved: 25% increase (100, 205)	Target: 20% increase
4.3 Number of WAVES newsletter views	No newsletter	No newsletter	Target: launch website Achieved: 300 subscribers	Target: 20% increment Achieved: 1,100 subscribers	Target: 20% increment Achieved: 90% (2,000 subscribers)	Target: 20% increment
4.4 Number of social media followers	No social media	No social media	No social media	Target: launch Achieved: Plans to launch last quarter of 2014	Original target: 20% increase New Target: Using WB environment Twitter	Target: 20% increment

See Monitoring and Evaluation Framework for definitions of results.

* China, Peru, Kenya participate in WAVES Annual Workshop.

**Partnership meeting included Peru, Kenya, India; MENA workshop included Morocco, Tunisia, Egypt, Lebanon, Jordan, Turkey; VCs/missions to Gabon, Ghana, Vietnam; Ministerial Dialogue on Natural Capital Accounting at spring meetings of WB/IMF April 18, 2013, included 38 countries.

***Workshops in **AFR:** Botswana, Comoros, Congo, Côte d'Ivoire, Egypt, Ethiopia, Gabon, Ghana, Kenya, Liberia, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, South Africa, Tanzania, Uganda, Zimbabwe; **EAP:** Indonesia, Thailand, Samoa, Vietnam; **LCR:** Belize, Bahamas, Barbados, Brazil, Dominica, Ecuador, Jamaica, Mexico, Panama, Peru, St. Lucia, Uruguay, Venezuela; **MNA:** Egypt, Jordan, Lebanon, Morocco, Tunisia, Turkey. (For a full list of engagement see Annual Report.)

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