Annual Report 2019

GPS
Global Program
on Sustainability

WAVES

The World Bank's Global Program on Sustainability (GPS) promotes the use of high-quality data and analysis on natural capital, ecosystem services, and sustainability to better inform decisions made by governments, the private sector, and financial institutions. GPS is the World Bank umbrella program on the economics of sustainability, and encompasses the Wealth Accounting and the Valuation of Ecosystem Services (WAVES) global partnership. Since 2013, WAVES has been supporting some 20 countries worldwide in the development and the use of natural capital accounts in policy-making.

Find out more at :
www.worldbank.org/gps
www.wavespartnership.org

Table of Contents

EXECUTIVE SUMMARY

Global Program on Sustainability Becomes Operational

The Global Program on Sustainability (GPS) became operational in early 2019 and is now the World Bank's umbrella program on natural capital accounting (NCA) and the economics of sustainability. The program aims to integrate sustainability considerations into decisions by governments as well as financial and capital markets, providing the necessary data, metrics, and tools. It builds on nearly a decade of experience from the Wealth Accounting and the Valuation of Ecosystem Services (WAVES). The program has three pillars: Pillar 1 provides global information on sustainability. Pillar 2 provides assistance for country implementation of NCA, similar to WAVES. Pillar 3 supports the sustainable finance agenda. GPS starts its first year of operation on a strong footing with 90 percent rate of accomplishment for WAVES trust fund indicators as summarized in Table ES1 and further discussed in the Monitoring and Evaluation chapter.

Table ES1. WAVES Trust Fund: Percentage of Indicators Achieving or Exceeding Their Targets

Scope/ Result hierarchy	Number of indicators	Rate of accomplishment
Country	**7**	**96%**
Outcome	3	96%
Output	4	97%
Global	**5**	**94%**
Output	5	94%
Grand total	**12**	**95%**

While the WAVES Plus Trust Fund will continue disbursing in 2020 (that is, past the closing date of WAVES), its activities are now subsumed into the GPS overall umbrella framework, as an associated Trust Fund. As a result, this annual report uses the three-pillar structure of GPS to report on activities supported by GPS, WAVES, and WAVES Plus. The reporting period goes from July 1, 2018 to June 30, 2019; although some outreach and dissemination activities that took place up to October 2019 are also mentioned, given their relevance for discussion at the GPS/ WAVES Steering Committee meeting. The work supported by WAVES/ WAVES Plus pertains mostly to Pillar 2, and to some extent Pillar 1. The breakdown of financial data by individual trust fund is contained in chapter 5. This year still utilizes the result framework of WAVES (chapter 4), pending a discussion with the donors on the transition to the GPS result framework.

Pillar 1: Boosting the Profile of Sustainability in the Global Debate, Through Knowledge Products and Outreach

This is a critical moment for biodiversity because the date of the 15th meeting of the Conference of Parties (COP15) of the Convention on Biological Diversity is rapidly approaching. In October 2020 in Kunming, China, countries will agree on new targets and processes for the protection of biodiversity over the next 10 years to replace the goals brokered 10 years earlier in Aichi, Japan. As a contribution to those efforts, GPS has started an initiative called the Road to Kunming. A major component is analytical work to inform the development of the Post-2020 Global Biodiversity Framework. This includes pioneering quantitative analysis that models the interaction between ecosystem services and economic systems at a global scale. In addition, an engagement strategy with partners, including the Convention on Biological Diversity (CBD), is an important component of this work.

GPS is also supporting the next version of The Changing Wealth of Nations (CWON), also to be completed by the time of COP15, which will expand the range of natural assets and ecosystem services included in the analysis. The publication will feature novel lines of policy analysis, including effects of climate change, and stranded assets.

Progress in the global arena of Pillar 1 has been significant also in terms of knowledge sharing and partnerships. Building on the successful 2018 Natural Capital Policy Forum on climate change and biodiversity, the government of Uganda is hosting the 2019 Forum focusing on `measuring and valuing natural capital for improved landscape management'.

This is in response to an increased emphasis by the development community on landscapes as an organizing principle for integrating investments in agriculture, forests, watersheds, and biodiversity. The forum will be an opportunity to assess how NCA and integrated landscape management can work together to accelerate socioeconomic development and the protection of ecosystem services at the same time. This becomes all the more important against the backdrop of efforts to meet international goals and targets, such as the Bonn Challenge, the Paris Agreement on Climate Change, and the Post-2020 Global Biodiversity Framework.

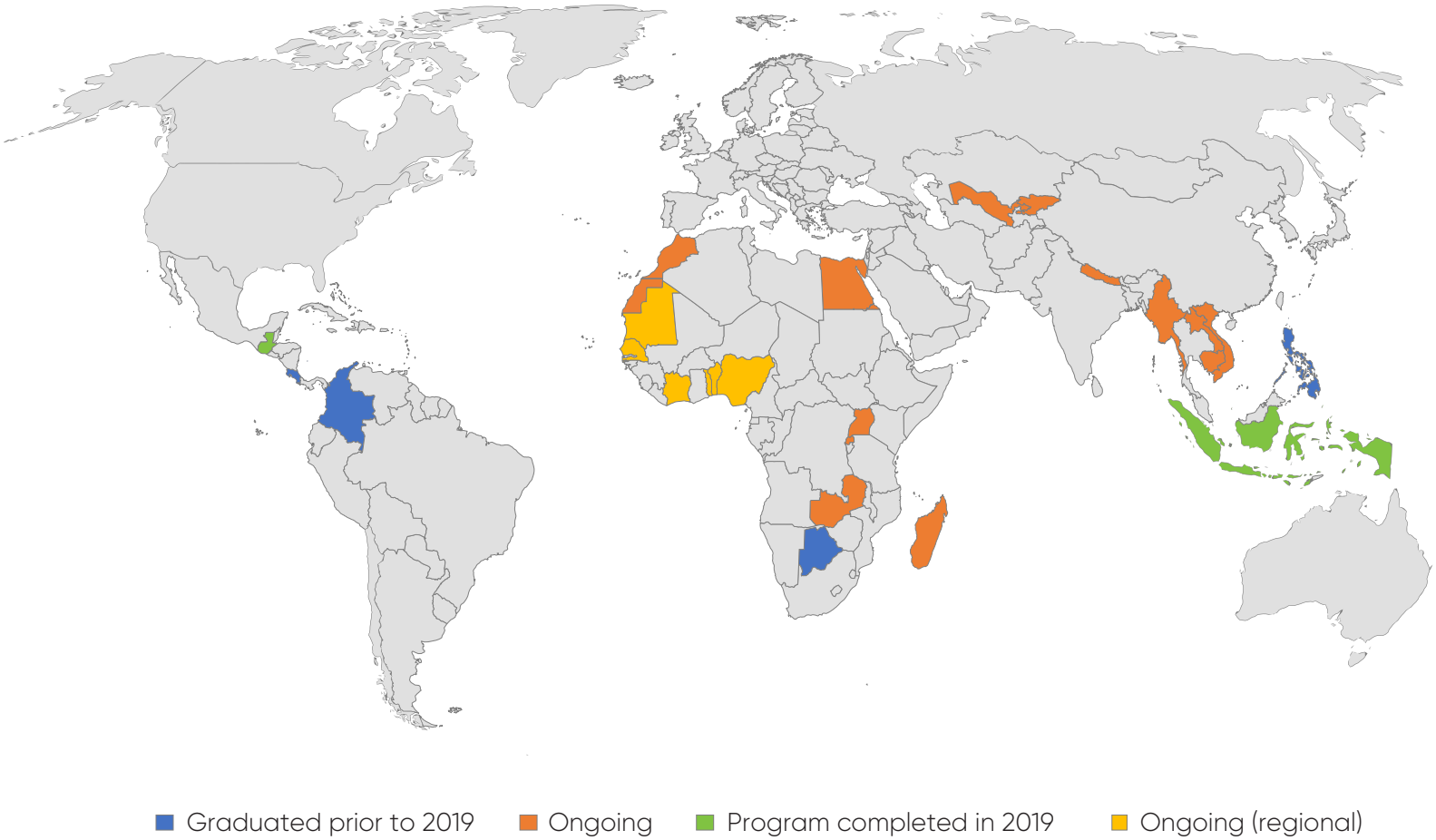
STRONG PARTNERSHIPS ARE A KEY ELEMENT OF OUR WORK

GPS has worked closely with a range of organizations. For the Road to Kunming work, in addition to the ongoing interaction with CBD parties and stakeholders, the GPS team is closely coordinating its analytical work with the team performing the Dasgupta Review on the Economics of Biodiversity, set up by the U.K. Treasury. Other partners include the World Economic Forum, The Nature Conservancy, the International Union for Conservation of Nature (IUCN), and the World Conservation Congress (WCC). For the CWON, collaborative work is under way with the University of Minnesota, IUCN, University of British Colombia, Columbia University, and PBL Netherlands. The United Nations Statistics Division (UNSD) continues to be a strong partner and the team is closely engaged with them on testing and developing methodology on ecosystem accounts.

Pillar 2: Delivering Results for Current Partner Countries, Welcoming More Countries to the Program

In 2019, GPS supported the completion of the work in two countries and progress in the development and policy use of accounts in another eight countries, as well as welcomed six new partners to the program (Figure ES1)

Figure ES1. **Geographical Scope of Country Engagement**



TWO WAVES COUNTRIES COMPLETED THEIR WORK WITH A MANDATE TO CONTINUE

Two partner countries completed the WAVES-supported work in 2019: Guatemala and Indonesia. In July, Indonesia held an event attended by 150 people to present the results of program, including reports on national land cover, land extent accounts for Sumatra and Kalimantan, and ecosystem accounts for peatlands. One of the key contributions of the WAVES work has been providing the data and modeling techniques for Indonesia's Low Carbon Development Initiative (LCDI), a new platform that aims to promote a low-carbon pathway to the country's economic growth. In the keynote speech, the deputy minister for Bappenas (the planning agency) acknowledged the role that WAVES had played in developing the platform. The country is keen to continue its engagement under GPS to explore economy-wide options for improved land use planning for the protection of peat, and coastal resources including mangroves.

In Guatemala, an event was held in June 2019 to launch the reports supported by the program. The event was attended by more than 100 participants, including senior officials such as the vice minister of finance, the undersecretary of planning, and the vice minister of environment, as well as representatives from various government agencies, academia, nongovernmental organizations (NGOs)/civil society organizations (CSOs), the private sector, and the media. The WAVES partnership has enabled Guatemala to update and publish accounts on forest, fisheries and aquaculture, energy and emissions, ecosystems, and environmental-agriculture.

The work has informed several government documents and indicators in Guatemala ranging from the National Tax Policy, the State of the Environment report and the Climate Change Knowledge and Assessment. The work on accounts is not ending with the completion of WAVES activities: in a recent development, the government has assigned the Forest Institute to continue the work on forest accounts.

GPS CONTINUES TO INFORM POLICIES IN THE COUNTRIES CURRENTLY SUPPORTED BY THE PROGRAM

In Rwanda, building on the progress made last year on the development of land accounts and their use for the country's land management system, the findings of the water account provided data underpinning the Rwanda Water Resources Board, which the government recently set up. In particular, the water account pointed to the need for an interdisciplinary approach and more systematic planning for water resources.

Nepal, the Kyrgyz Republic, Uganda, and Zambia have made steady progress. Uganda is expected to release the findings of forest and land accounts at a dedicated event in November 2019. The government is working to integrate NCA into their Third National Development Plan, not just by using NCA data in the preparation of the plan, but also by considering an explicit commitment to update accounts which would be included in the plan.

In Zambia, a presentation of forest and water accounts was made to the National Assembly, with the goal to inform the Seventh National Development Plan.

NEW COUNTRIES JOINED THE PROGRAM

In 2019, the GPS-WAVES partnership welcomed six new countries. Egypt and Morocco joined as Core Implementing Countries (CICs). Madagascar, Uzbekistan, and the West Africa Coastal Areas Management (WACA) Program countries became recipients of Targeted Technical Assistance (TTA), which is just-in-time support for analysis on specific investment or policy questions that can be answered through work on natural capital or ecosystem services. An extension of the TTA work in Nepal was also included in the 2019 workplan.

Thus, the cumulative number of countries or regions being supported by GPS-WAVES now stands at 20 (Figure ES1), with a wide range of natural assets and ecosystem types being measured and valued. Coastal and marine ecosystems are an emerging area of focus, with several countries engaging in the valuation of coastal assets or in exploring nature-based solutions—for example, Morocco, a new CIC, and TTA countries like Myanmar and Vietnam. WACA countries Ghana and Guinea are focusing on valuing ecosystem services provided by mangroves.

Air emission and waste accounts will be supported for the first time under GPS-WAVES in Egypt. In Morocco, the priority will be on forests and coastal and marine ecosystem services. In all the new countries, there is increasing focus on policy use and taking into account the challenges deriving from climate change and the competing development demands on landscapes and seascapes.

GPS has extended Nepal's TTA support to a second phase. Building on progress made in the first phase on estimating the value of ecosystem services provided by various types of forest lands, the program is now informing the development of a compensation scheme for forest land diversion for development projects. The findings will be published in the Nepal Environment Sector Diagnostic by the World Bank. As a result of the progress made so far, the government of Nepal has expressed interest in becoming a CIC country to further set priorities for accelerating sustainable growth based on developing the natural resource sectors.

Pillar 3: Supporting Sustainable Finance Through Data and Analytics

Pillar 3 is a major area of innovation of GPS, compared with the original scope of work of WAVES. Led by the Financial, Competitiveness, and Innovation Global Practice of the World Bank, the work responds to the growing interest in sustainable finance by governments and investors globally. The Bank's recently launched Sovereign ESG Data Portal provides an online platform to obtain and analyze data relevant for the analysis of sovereign bonds. Research has begun to analyze correlations between environmental, social, and governance (ESG) criteria and sovereign ratings. Climate and Environmental Risk Assessments have begun in two countries. As part of the Bank's partnership with the Japanese Government Pension Investment Fund (GPIF), the team conducted a benchmarking exercise mapping the GPIF's ESG report and those of other leading global pension funds against a framework based on international standards. GPS work was also presented at multiple global sustainable finance conferences.

Communications and Outreach Has Been Integral to Progress

Apart from progress in the three pillars summarized above, a cross-cutting area of work concerns communications and outreach. This year, GPS got a face and a home: a GPS logo and branding guidelines were developed, and web pages on the World Bank website were created to provide regular updates on the program. The program also launched a GPS Seminar series, which attracts a large online audience. The WAVES Knowledge Center and the website saw a 41 percent increase in page views as compared to last year. In-country communications activities included meetings with stakeholders in Uganda and several other TTA countries, such as Cambodia, the Lao People's Democratic Republic, and Myanmar. High-profile events in Guatemala, Indonesia, and Rwanda were attended by ministers, raising the profile of natural capital. NCA came up in the World Bank–IMF Annual Meeting event "Invest in Nature" and was mentioned at the event and on online conversations.

Looking Forward

We have plenty to look forward to in the coming year. At the global level, a key to the success of the Post-2020 Biodiversity Framework will be the definition of targets that are specific, measurable, achievable, realistic and time-bound. We expect that GPS will have a role to play, including through the analytical work being conducted as part of the *Road to Kunming* work and *The Changing Wealth of Nations 2020*; as well as outreach activities such as the event on "investing in nature", featured at the 2019 Annual meetings of the World Bank. The results of the analytical work will help assess the interplay between the economy and the environment, thereby providing insights on how policies can address the drivers of ecosystems and biodiversity loss without jeopardizing development.

GPS will also play an important role in the aftermath of COP 15, supporting the implementation of the Post-Aichi targets. In particular, the program could provide evidence to underpin the design and implementation of the National Biodiversity Strategies and Action Plans (NBSAPs), especially in terms of the effects of policy reforms. The program is also well positioned to support the integration of biodiversity in the funding provided by the International Development Association (IDA - the part of the World Bank Group financing the poorest countries), especially in consideration of the requests of the IDA board members to feature biodiversity as a special theme in the 19th replenishment of the IDA fund. Finally, GPS can provide data and tools for the design of Nature Based Solutions (NBS) to climate change mitigation and adaptation challenges, an area that is becoming increasingly important as countries revise or roll-out their Nationally Determined Contributions (NDCs) under the Paris Climate Accord.

In terms of the program's country-level work, we plan to strengthen the program's reach, both directly (via the involvement of new countries) and through fostering cross-country collaboration, including in particular through a regional community of practice in Africa. The TTA work holds the promise of informing the design or implementation of a number of Bank operations, accounting for financial commitments in excess of US$500 million.

There will be opportunities for synergies between GPS and related Bank work. Two new trust funds have recently been established at the Bank, PROBLUE and PROGREEN, which will tackle marine and terrestrial eco-systems, respectively. The GPS team will work with these programs to scale up the use of natural capital approaches in the management of seascapes and landscapes.

In another important development, the office of the Chief Economist for Sustainable Development at the World Bank is working on a novel approach to measuring natural capital for any country in the world through a "Natural Capital Index" that measures the relative efficiency with which natural assets are managed in a country. This index is expected to encourage countries to better manage their natural resources. This ongoing work is expected to be completed in 2020. GPS is well equipped both to contribute to the finalization of the analysis and to operationalize its findings.

PILLAR 1: GLOBAL INFORMATION

"The loss of species, ecosystems and genetic diversity is already a global and generational threat to human well-being. Protecting the invaluable contributions of nature to people will be the defining challenge of decades to come. Policies, efforts and actions - at every level - will only succeed, however, when based on the best knowledge and evidence."

– Sir Robert Watson, former Chair of the Intergovernmental Panel on Biodiversity Ecosystem Services (IPBES)

ROAD TO KUNMING

CWON 2020

CONTRIBUTION TO SEEA

DATA PLATFORM

ESF TOOLKIT

POLICY FORUM

PILLAR 1. **GLOBAL INFORMATION**

The last few years have seen a surge in demand for support from countries and global partners in the area of natural capital, ecosystem services, and the economics of sustainability. There is a growing realization that natural capital should be considered as an "asset class" of its own and hence its value needs to be captured with reliable and standardized data for sound policy making. Building on nearly a decade of experience with WAVES, the Global Program for Sustainability (GPS) has ramped up its global-level work on natural capital and ecosystem services, including knowledge products, data and methodologies, as well as consultation and outreach.

In addition to informing the overall debate on improved environmental management, this work provides methodological insights for country-level applications (supported by Pillar 2 of the program), and data and tools to help advance the sustainable finance agenda (supported by Pillar 3 of GPS).

This year saw the launch of important scientific reports, such as IPBES global assessment and the IPCC reports on oceans and land degradation. The first showed the loss of biodiversity is unprecedented - more than a million (out of an estimated 8 million) species are threatened with extinction, more than ever before in history. The IPCC reports provide additional evidence on the interaction between climate change and natural assets, and on the important role that nature-based solutions can play in mitigating, and adapting to, climate change. The IPBES and IPCC reports galvanized efforts towards scaled-up action for addressing the biodiversity and climate change challenges in an integrated fashion.

As a contribution to those efforts, GPS has started an initiative called *The Road to Kunming*. A major component is analytical work to inform the development of the Post-2020 Global Biodiversity Framework. This includes pioneering quantitative analysis that models the interaction between ecosystem services, economic systems and climate change at a global scale. In addition, an engagement strategy with partners, including the Convention of Biological Diversity (CBD), is an important component of this work.

GPS is also supporting the next version of the Changing Wealth of Nations (CWON), which will expand the range of natural assets and ecosystem services included in the analysis and will feature novel lines of policy analysis including the effects of climate change, and stranded assets.

Several partners are involved in both these global tasks. For the Road to Kunming work, in addition to the ongoing interaction with CBD parties and stakeholders, the GPS team is closely coordinating its analytical work with the Dasgupta Review team, set up by the U.K. Treasury. Other partners include the World Economic Forum, The Nature Conservancy, the International Union for Conservation of Nature (IUCN), and the World Conservation Congress (WCC). For the CWON, work is under way with the University of Minnesota, IUCN, University of British Colombia, Columbia

University, and PBL Netherlands Environmental Assessment Agency. The United Nations Statistics Division (UNSD) continues to be a strong partner and the team closely engages with them on testing and developing methodology on ecosystem accounts.

While catalyzing global discussion on economics of sustainability, the program also supports the integration of natural capital in the large lending portfolio of the World Bank. The GPS secretariat team is developing an Ecosystem Services Assessment Toolkit to integrate Natural Capital in the design of investment projects. Over time the tool could also be adapted to policy lending and Programs for Results (P4R); and become part of projects' Monitoring and Evaluation systems (M&E), including through dedicated support to be provided to countries through recipient-executed grants under Pillar 2 of the GPS.

To enable customized uses by development practitioners and the public at large, the data generated by GPS is being made available and accessible online. A new data platform with detailed data sets on environmental indicators, wealth, natural capital, and poverty will be ready for launch by the end of 2019.

During the reporting period of this report, the Third Forum on Natural Capital Accounting for Better Policy Decisions was held in Paris, France. The forum brought together more than 100 users and producers of national capital accounting (NCA) to explore how NCA can contribute to addressing the climate change and biodiversity challenges.

Global Knowledge Products

Road to Kunming

As part of the Global Program for Sustainability (GPS), and at the request of UNEP and the Secretariat of the Convention on Biological Diversity (CBD), the World Bank is providing support to the development of the Post-2020 Global Biodiversity Framework, to be approved at the fifteenth Conference of the Parties (COP 15) of the CBD in Kunming, China in 2020. This effort, named "The Road to Kunming," is organized around two tracks of work: (i) analytic activities, and (ii) advisory and outreach activities.

ANALYTIC TRACK

Integrated biophysical and economic analysis of changes in land use and ecosystem services. Teaming up with WWF (under their "Global Future Project"), the Bank is working with the University of Minnesota and Purdue University to assess the following:

- The economic impacts of loss of biodiversity and ecosystem services (including pollination, water regulation, coastal protection, carbon storage) under different reference scenarios of socioeconomic and climate change
- The ability of selected policies to deliver better outcomes compared with the reference case—for example, promote provision of ecosystem services while sustaining growth

This pioneering work will make it possible to conduct an integrated assessment that accounts for both the effect of economic drivers on ecosystem services as well as the effects of ecosystem services on economic systems. Several policies will be assessed, including removal of perverse incentives, particularly in agriculture; addressing trade-related drivers of biodiversity loss; and boosting conservation of critical ecosystem through payment for ecosystem services.

ADVISORY AND OUTREACH TRACK

Biodiversity finance workshop in China: The World Bank organized a workshop centered around the principle of maximizing private finance for biodiversity and ecosystem services, as per the request of China's Ministry of Ecology and Environment in November 2019. It is expected to provide valuable input to a CBD thematic consultation on resource mobilization to be held in Germany in early 2020.

Annual Meetings event: With the objective of putting biodiversity on the agenda of Ministers of Finance, a series of events are being planned for the Annual and Spring meetings of the World Bank. The first event on Investing in Nature took place during the IMF-World Bank Annual Meetings in October 2019.

Engagement with other stakeholders: Several opportunities for engagement are being pursued, which include the Dasgupta Review team, commissioned by the U.K. Treasury; the World Economic Forum, leading on the Nature Action Agenda; and The Nature Conservancy, supporting the Resource Mobilization consultation with Germany and Costa Rica.

Investing in Nature' took place during the IMF-World Bank Annual Meetings in October 2019

The Changing Wealth of Nations 2020

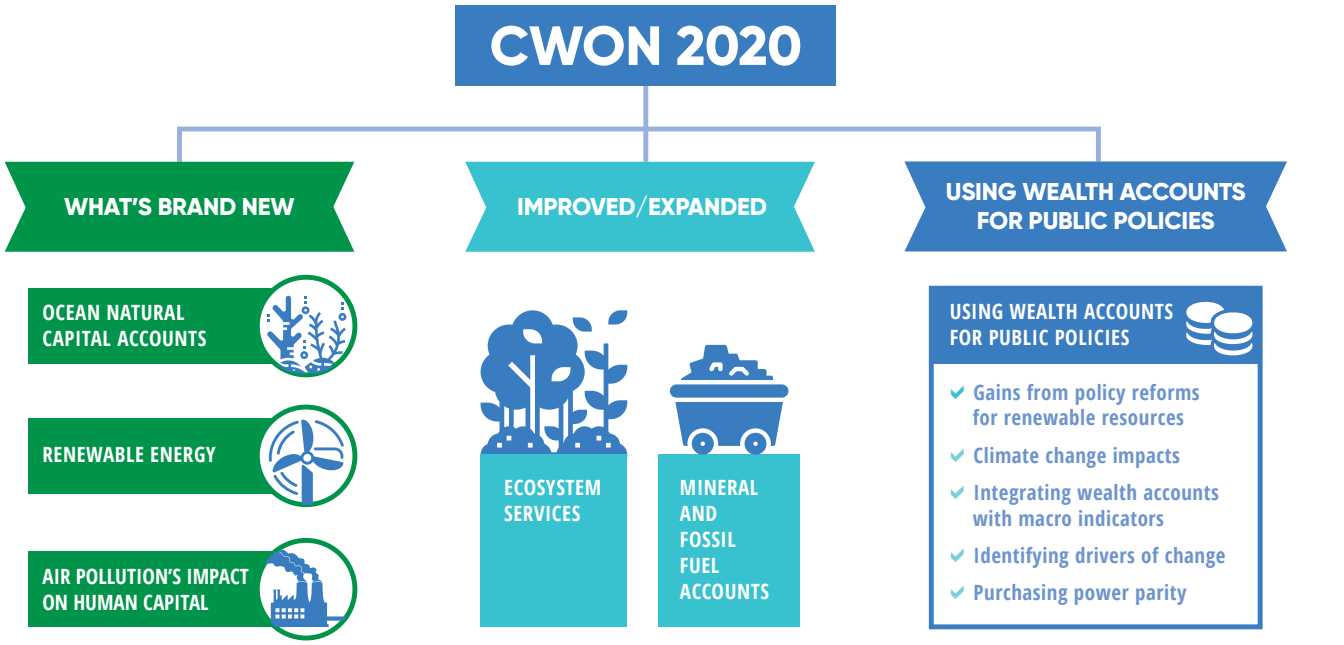
GPS is also supporting the next version of CWON, expected to be released at the 2020 CBD Conference of the Parties, with interim dissemination activities taking place along the way. It will provide accounts for all forms of wealth (natural, human, and produced capital) over 1995–2017, and it will focus on how to manage those forms of capital for sustainable development. Climate change will be a running theme throughout the report. All renewable natural capital assets—land, forests, fisheries, mangroves—will include scenarios on managing the potential impacts of climate change. Here are some areas where the report is breaking new ground (see figure 1):

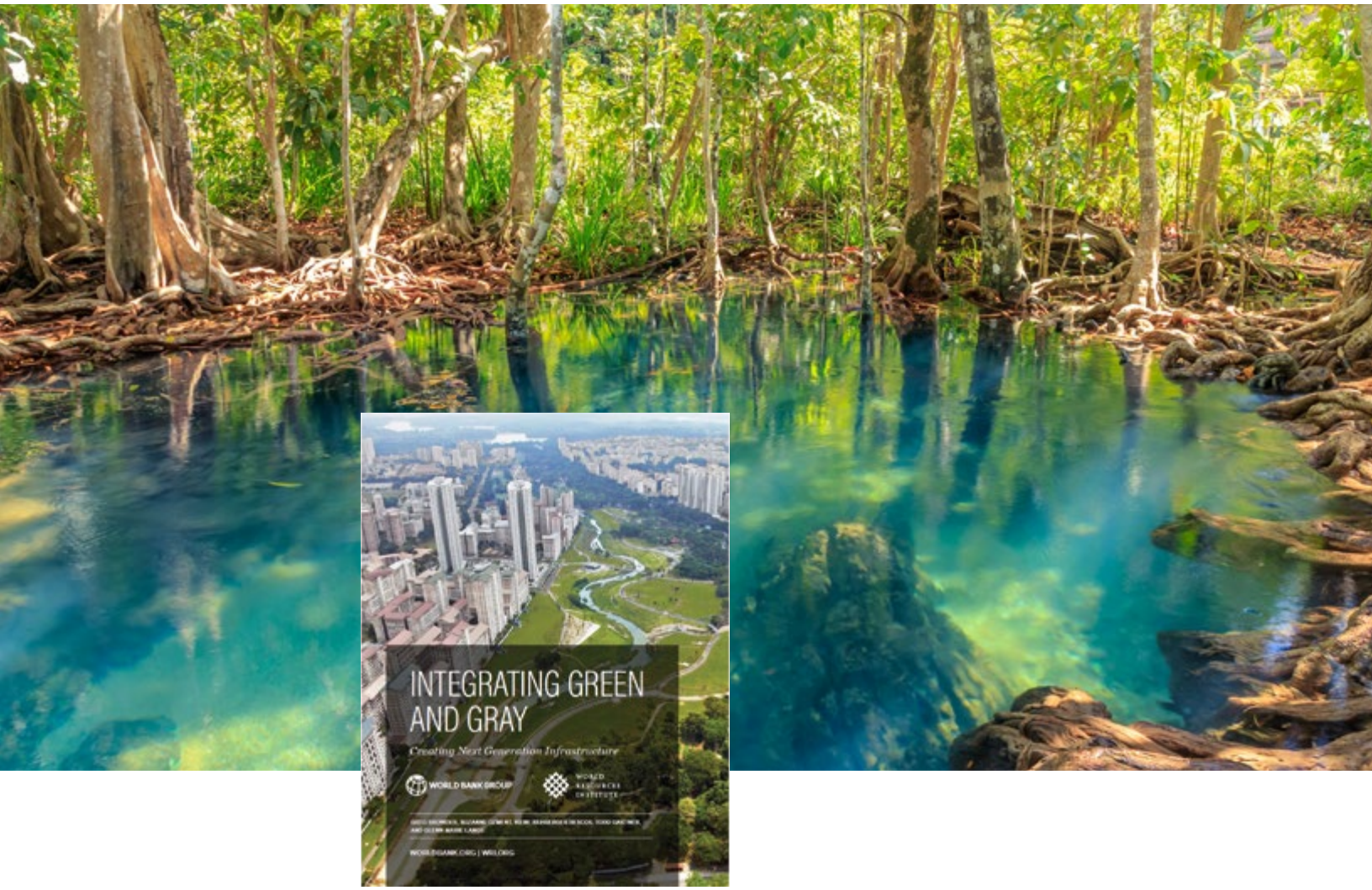
- New assets to be included are oceans (fisheries, mangroves, and coral reefs), renewable energy, and the impact of air pollution on human capital.
- Renewable energy accounts (hydro, solar, wind) consider not only the current installed capacity but also the global potential for renewable energy.
- The global estimates of the impact of air pollution on human capital include a case study of India where an in-depth study of impacts and the benefits from reducing pollution is under way.
- Wealth calculations are accounting for forest and agricultural land degradation and updating the estimates of forest ecosystem services.
- Mineral and fossil fuel accounts are using newly available databases that provide mine-level data, allowing accurate asset valuation.
- The report will assess where policy reform and better management can increase the benefits generated by natural capital. For example, fisheries accounts will include scenarios about the gains from rebuilding fisheries and eliminating harmful subsidies.

While the above work is progressing, inception reports have been completed for ocean assets, renewable energy, and the impact of air pollution on human capital. A report on fossil fuel–dependent countries under low-carbon transition is also complete. An inception report for a systematic analysis of the drivers of change in wealth accounts (decomposition analysis) has been prepared and is ready to be applied to the new wealth accounts.

Internally, this work is co-led by the Environment, Natural Resources and Blue Economy (ENB) and Macroeconomics, Trade, and Investment (MTI) Global Practices in partnership with other global practices like Agriculture; Water; Health, Nutrition and Population; Finance, Competitiveness, and Innovation; and Jobs and Development; as well as the Development Economics Vice Presidency and the cross-cutting solution area Climate Change.

FIGURE 1. **WHAT'S NEW IN THE CHANGING WEALTH OF NATIONS 2020**





Nature-Based Solutions Being Adopted Widely

This year saw the culmination of work under a Bank-wide initiative on nature-based solutions (NBS) based on the approach that natural systems such as forests, floodplains, and soils can contribute to clean, reliable water supply and protect against floods and drought. There was significant progress in building on the guidelines developed by the WAVES program, to account for coastal protection services of mangroves and coral reefs. The NBS initiative was launched in 2016 to promote a wider study of NBS and how it could be applied in Bank operations. A group comprising members of several parts of the World Bank did a range of analytical work culminating in a flagship report co-authored with the World Resources Institute (WRI) and published in March 2019, *Integrating Green and Gray: Creating the Next Generation Infrastructure*. With funding from two programs—Global Facility for Disaster Reduction and Recovery (GFDRR) and the Program on Forests (PROFOR)—studies to develop NBS options in country operations were undertaken in Jamaica, Mozambique, Sri Lanka, Vietnam, and other countries. This effort has led to new interest in NBS for coastal development in GPS country programs. GPS is collaborating with PROBLUE, the World Bank's new program on the blue economy, to promote NBS in coastal areas, with potential country work in Indonesia, Mozambique, and West Africa. The Bank team working on NBS also provided inputs and insights to the climate meetings in Abu Dhabi and New York (as part of the UNGA Climate Action Summit)

Data, standards and methodologies

Contributing to Developing Standards on Ecosystem Accounting

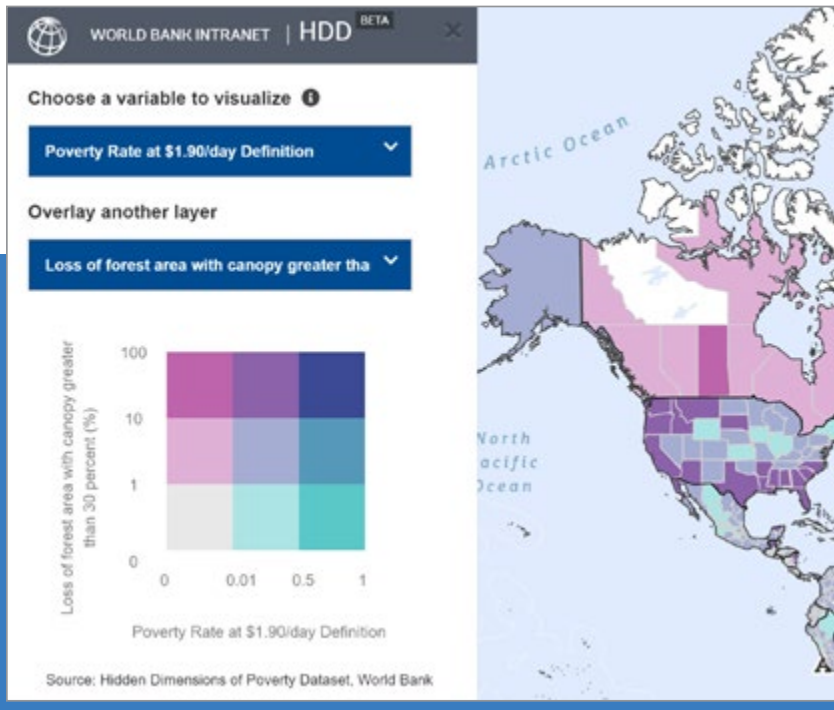
The World Bank is an active member of the high-level UN Committee of Experts on Environmental Accounting, where it has been strongly supporting the ongoing revision of the System for Environmental-Economic Accounting (SEEA) Experimental Ecosystem Accounting manual. One of the main areas of contribution come from lessons learned from its experiences implementing ecosystem accounting in several countries under the WAVES program.

The World Bank is part of the ISWGNA (Intersecretariat Working Group on National Accounts subgroup on Measuring Well-Being and Sustainability), which is seeking to bridge the SEEA and the System of National Accounts (SNA) by identifying which components of ecosystem accounts may be linked to the SNA. In the context of new work on the CWON 2020, the World Bank has proposed new methodology for accounting for renewable energy resources—hydro, solar, and wind—filling a gap in both the SNA and the SEEA manuals, including SEEA Energy, which does not address renewable energy as assets. This work was presented as part of ISWGNA presentations at the Advisory Expert Group for the SNA in October 2019.

WAVES participated in the 24th Meeting of the London Group on Environmental Accounting, October 1-4, 2018, in Dublin, Ireland. WAVES presented its country experience on how to better engage with potential account users in all aspects of the policy cycle. The presentation provided examples of how accounts had been used in policy making in Australia, Guatemala, the Philippines, and Zambia. Lessons learned included establishing cross-ministerial steering committees, shortening the production cycle, using economic modeling as a link between the accounts and policy analysis, and the importance of engaging with a wide group of stakeholders.

Ecosystem Services Assessment Toolkit

A brand-new Environmental and Social Framework (ESF) that guides all World Bank operations came into effect in October 2018, offering broad and systematic coverage of environmental and social risks, including impacts and risks associated with ecosystem services. This afforded an opportunity to further operationalize this ecosystem services approach in ESF by providing practical and accessible tools for both borrowers and specialists.

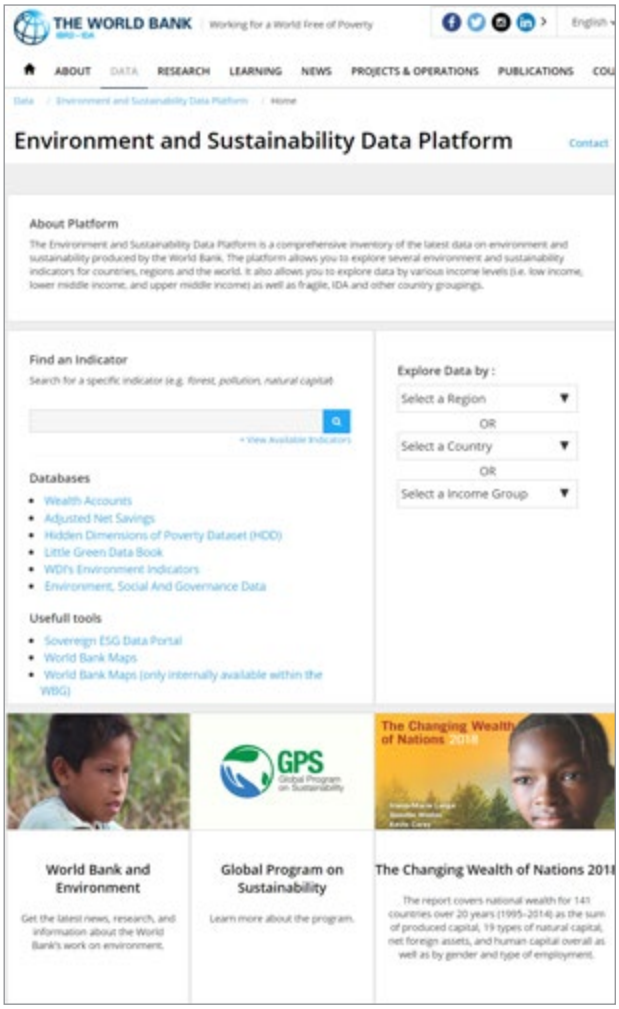


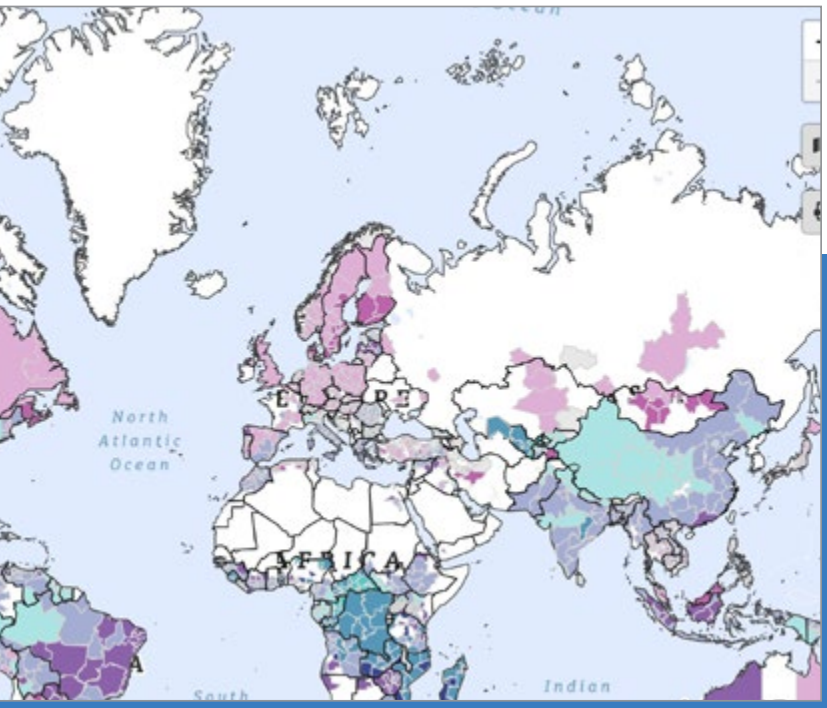
In response to this, the GPS secretariat is leading on the development of the Ecosystem Services Assessment Toolkit, which will provide an evidence-based, standardized, and practical toolkit to measure and value environmental risks and impacts associated with ecosystem services in the project cycle. For example, a screening tool available on a web platform will help users better understand, visualize and report potential project impacts to ecosystems in the hydro or roads sector. This year, significant progress was made in developing a beta version of the toolkit, developing protocols for a help desk, conducting case studies, and providing recommendations for future work, including feasibility and added-value of developing a final and full version of the toolkit in a potential next phase.

Data Platform

The World Bank has produced various data sets on the environment, including Wealth Accounting, Adjusted Net Savings, Hidden Dimensions of Poverty (HDD), and the Little Green Data Book, among others. To make the existing data sets more accessible to policy makers and a general audience, the Environment & Sustainability Data Platform has been developed. This data platform aims to be the World Bank's comprehensive inventory of the latest data on environment and sustainability. It allows users to explore and visualize environment and sustainability indicators for countries, regions, and the world. It also allows users to explore data by various income levels as well as fragile, IDA (International Development Association), and other country groupings.

FIGURE 2. **ENVIRONMENT & SUSTAINABILITY DATA PORTAL**





Global Outreach, Consultation, and Dissemination

The Third forum on Natural Capital Accounting for Better policy making: Focus on Climate Change and Biodiversity

Building on the success of the previous forums, this year, The World Bank, the United Nations Statistical Division (UNSD), the Dutch Ministry of Foreign Affairs, and the Natural Capital Coalition co-hosted the 3rd Policy Forum on Natural Capital Accounting for Better Policy in Paris, France. It provided a platform to share knowledge and experiences, exploring how NCA can contribute to climate change and biodiversity. The Forum was part of a "Natural Capital Week" held jointly with the 'Government Dialogue on Natural Capital' which links diverse governments involved in various natural capital approaches, and the 'Combining Forces Initiative' that links business and governments. More than 130 participants from 25 countries attended the conference.

Alexander Chiteme, Minister of National Development Planning for Zambia and Uwera Claudine, Minister of state, Ministry of Finance and Economic Planning for Rwanda.

Dr. Laurence Monnoyer-Smith, Commissioner General for Sustainable Development, Ministry for Ecological and Solidarity Transition, France, welcomed participants, noting France's renewed focus and commitment towards biodiversity conservation and climate change. Saleemul Haq of the International Centre for Climate Change and Development, Bangladesh, spoke about how NCA could strengthen data on comprehensive risk management framework under climate change. Juha Siikamaki, Chief Economist, IUCN, opened the session on biodiversity outlining the main challenges as the global discussion galvanized towards designing the new biodiversity framework in 2020 and the role that NCA could play in designing evidence-based targets.

The annual meeting of the UN Committee of Experts on Environmental Economic Accounting (UNCEEA)

The GPS-WAVES team attended the annual meeting of UNCEEA, the agency responsible for providing direction to the technical groups working on SEEA. The team presented on communicating natural capital accounting and the experience with influencing policy under WAVES. The team participated in the Forum of Experts on SEEA Experimental Ecosystem Accounting at Glen Cove, New York where a presentation was made on the CWON 2020 and contributions were made to sessions on valuation and accounting, including emerging areas of marine/ ocean accounting.

Outreach and Engagement

This year the broader World Bank umbrella initiative GPS has a face and a home. A GPS logo and branding guidelines were created, and webpages within the larger World bank website were created to provide information on the objectives of the program, the progress on all three pillars, and highlight the latest news relevant to natural capital accounting.

A seminars series was launched this year to build momentum around `sustainability' and showcase results from GPS on the policy use of natural capital accounting and valuation of ecosystem services. The inaugural seminar saw the participation of Dr. Claudine Uwera, Minister of State for Economic Planning, Rwanda on how they are using the land and water accounts to inform policy decisions. At a subsequent seminar, the EU Joint Research Center (JRC) shared its experience on the first extensive set of Ecosystem Accounts for Europe. The series so far has seen a large online audience, pointing to the interest in the topic.

Meanwhile, the WAVES website and knowledge center continue to be a source of information for the natural capital community. Eleven new reports and briefs on policy use of accounts in countries were uploaded to the knowledge center. WAVES publications were downloaded 23,292 times, an increase of about 378 percent compared to last year, with most downloads going to country reports and presentations. Traffic to the WAVES website shows an increase of 41 percent from last year. The WAVES/GPS newsletter now reaches 3,000 contacts, with an average open rate of 43 percent.

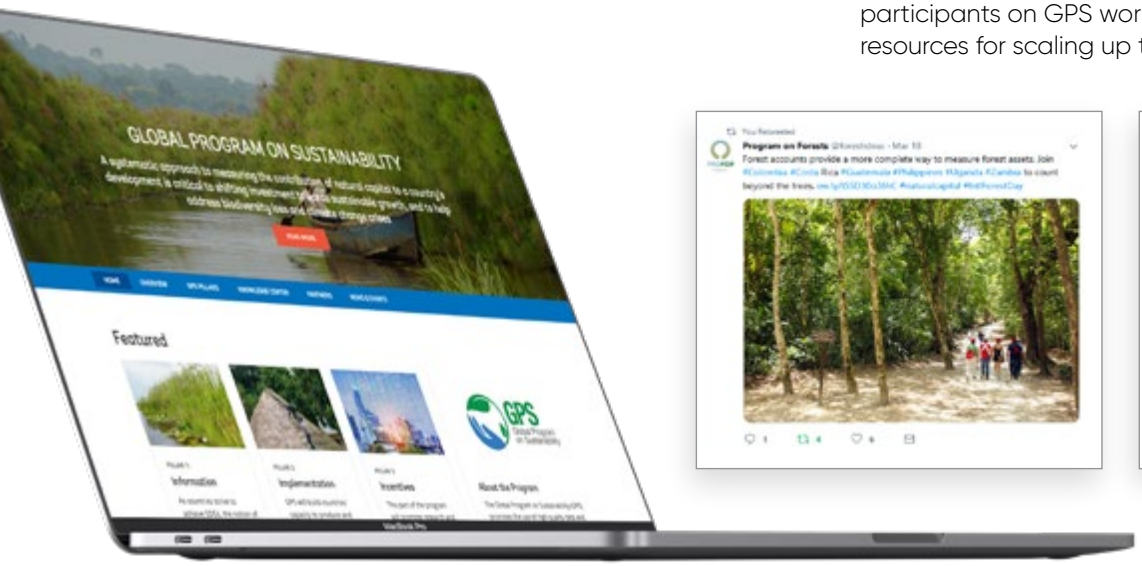
The World Bank's environment Global Practice (@WBG_Environment) keeps up the online conversation on wealth and natural capital. Online engagement grew steadily with more influencers and institutions such as the World Bank official twitter account and other sectors at the World Bank joining the conversation.

The in-country communications work had a strong momentum as two of the WAVES Plus countries concluded their formal engagement, while countries like Uganda and Zambia strengthened their engagement activities. Uganda held a stakeholder meeting attended by the Ministry of Finance, Uganda Bureau of Statistics, the Ministry of Water and Environment, among others. Zambia presented Forest Accounts to the National Parliament. WAVES organized high-profile events in Indonesia and Guatemala to mark the completion of the first phase of WAVES engagement.

With Uganda making substantial progress on accounts, a stakeholder meeting was held in Kampala to create a communications strategy and identify opportunities on the policy front. More than 30 people attended the workshop, including the Ministry of Finance, Statistics, and Environment. A video was created on the Mabamba wetland in Uganda to show the value of measuring and valuing the services that an ecosystem like a wetland provides to the people and the economy. The video features interviews of direct beneficiaries of the wetland and policy makers in Uganda. The video was promoted during the World Tourism Day using World Bank's social media channels.

The UNCEEA invited WAVES to present its experience on influencing policy-makers and a wide range of stakeholders using a communication strategy and engagement plan. The presentation was well-received and was followed by a good discussion among members on the lessons that can be applied to newer programs like UNSD's program on ecosystem accounts in countries.

To garner more support for GPS, a donor information meeting was held in June at the World Bank Office in Paris. The meeting provided an opportunity to update participants on GPS work currently underway; and to seek resources for scaling up the program.



PILLAR 2: COUNTRY WORK

"The WAVES program has supported us in mainstreaming natural capital accounting into our development planning. The innovative approaches and solutions employed by this program enabled us to integrate natural capital accounting into our low-carbon development planning and brings us closer to our Sustainable Development Goals."

– Dr. Ir. Arifin Rudiyanto, the Deputy Minister for Maritime Affairs and Natural Resources of BAPPENAS (Planning Agency), Indonesia


GUATEMALA


INDONESIA


RWANDA


UGANDA


ZAMBIA


PROGRESS WITH TTA

GUATEMALA

This year marked the completion of the WAVES program in Guatemala. An event was held in June 2019 to launch the products supported by the program. More than 100 participants, including senior officials such as the vice minister of Finance, the undersecretary of Planning, and the vice minister of Environment, as well as representatives from various government agencies, academia, NGO/CSOs, the private sector, and media, attended the event. The WAVES partnership has enabled Guatemala to update and publish accounts on forest, fisheries and aquaculture, energy and emissions, ecosystems and environmental-agriculture.

Guatemala has a long history of developing SEEA-compliant NCA using a public-academic partnership with Rafael Landívar University. WAVES filled some of the gaps, allowing NCA to further advance in the country. The Institute of Statistics (INE) is committed to updating and producing accounts and now considers NCA at par with the official statistics of the country. In a recent development, the government has assigned the Forest Institute to work on forest accounts.

ACCOUNTS COMPLETED

Forest Accounts
2001–2012

Fisheries and aquaculture accounts
2001–2012

Energy and Emission Accounts
2001–2012

NEW ACCOUNTS

Ecosystem Accounts
2001–2014

Environmental-agriculture accounts
(2001–2012), including water accounts for the agricultural sector

INSTITUTIONALIZATION

Accounts were institutionalized through innovative institutional arrangements that included the following:

- Creation of a national steering committee
- Creation of a public-academic partnership, which is in the process of being formalized

POLICY IMPACT

More generally, the process of building the accounts to strengthen the "SCAE" (Guatemalan System of Environmental-Economic Accounts) helped reinforce natural capital as an important element in Guatemala's economic growth narrative. More specifically:

- WAVES informed indicators that will monitor the National Development Plan (NDP), K'atun Plan: Our Guatemala 2032. The NDP is a relevant milestone in the country's planning system, since it is the first effort to build a national consensus based on the system of local development councils established in the 1990s.
- The accounts also contributed to provide information to different government documents and policy instruments (Table 1):

The event marking the conclusion of the WAVES program was attended by the vice minister of finance, the undersecretary of planning, and the vice minister of environment, as well as representatives from various government agencies, academia, and civil society organizations.

TABLE 1.

Entity	Document	Contribution of NCA
Ministry of Finance	Environmental Tax Strategy 2018	Establishes strategic lines for the implementation of Incentives and taxes to reduce and manage environmental impacts.
National Institute of Statistics	Environmental Statistical Compendium 2016	Provides information on the environmental situation in Guatemala.
Ministry of Environment and Natural Resources	Environmental Report of the State of Guatemala 2018	Monitors and evaluates of the situation and environmental trends in Guatemala.
	Base Document of the Environmental Pact in Guatemala 2016–2020	Proposes the general guidelines for the achievement of an environmental pact in Guatemala, considering the public sector, private sector and civil society.
Climate Change Science System	First report on climate change knowledge assessment in Guatemala 2019	Systematizes the knowledge produced in Guatemala on climate change and its probable repercussions for the country. To be published in 2019.

Ecosystem Accounts Show Humid Forests in Guatemala Are at Risk

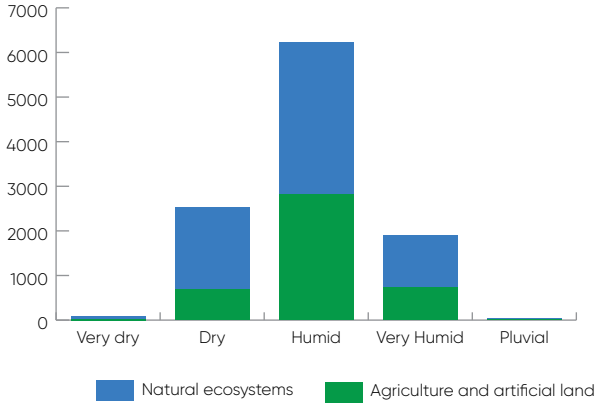
Guatemala produced ecosystem accounts using an extensive database of spatial information that allowed analyzing changes from 1991 to 2018.[1] Key findings from the ecosystem accounts have informed the ongoing policy dialogue related to the National Biodiversity Policy and the broader regional agenda related to the Mesoamerican Corridor initiatives,[2] in particular the establishment of future protected areas, reviewing the effectiveness of implementation of the existing ones, and informing future policies on biological corridors. More importantly, the ecosystem extent and condition accounts were used as input into a modeling exercise for climate change scenarios that was used in the Climate Change Strategy.[3] The accounts provided the baseline data that were used to predict changes in ecosystems by 2050 and 2080.[4] The predicted decrease in precipitation will mean that by 2080, 60 percent to 70 percent of humid ecosystems will convert to dry ecosystems and only 20 percent of humid ecosystems will survive. Decreases in water availability will affect biodiversity composition and certain species, especially those living in the Guatemalan highlands, will migrate or disappear.

Two key findings from the accounts have been useful for policy:

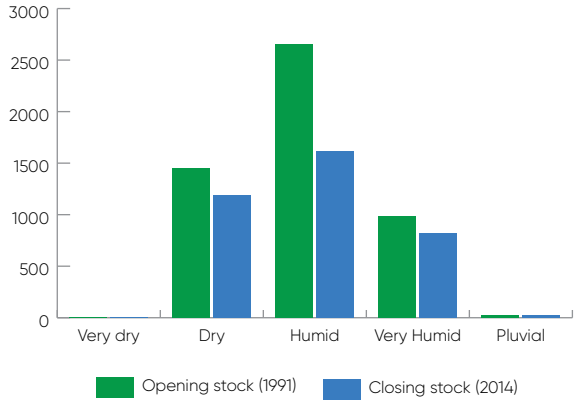
Most ecosystem types in Guatemala are humid and very humid and on average 60 percent still have natural vegetation; however, forest cover is decreasing at very high rates. More than 8 million hectares (75 percent of the country area) are concentrated in two types of ecosystems, with mostly tropical forests and premontane forests, which are well known for providing critical

FIGURE 3. **ECOSYSTEM EXTENT ACCOUNT**

(a) Ecosystem extent account by type and class (thousand hectares)



(b) Forest cover change by ecosystem type Base year: 2001 natural vegetation class (thousand hectares)



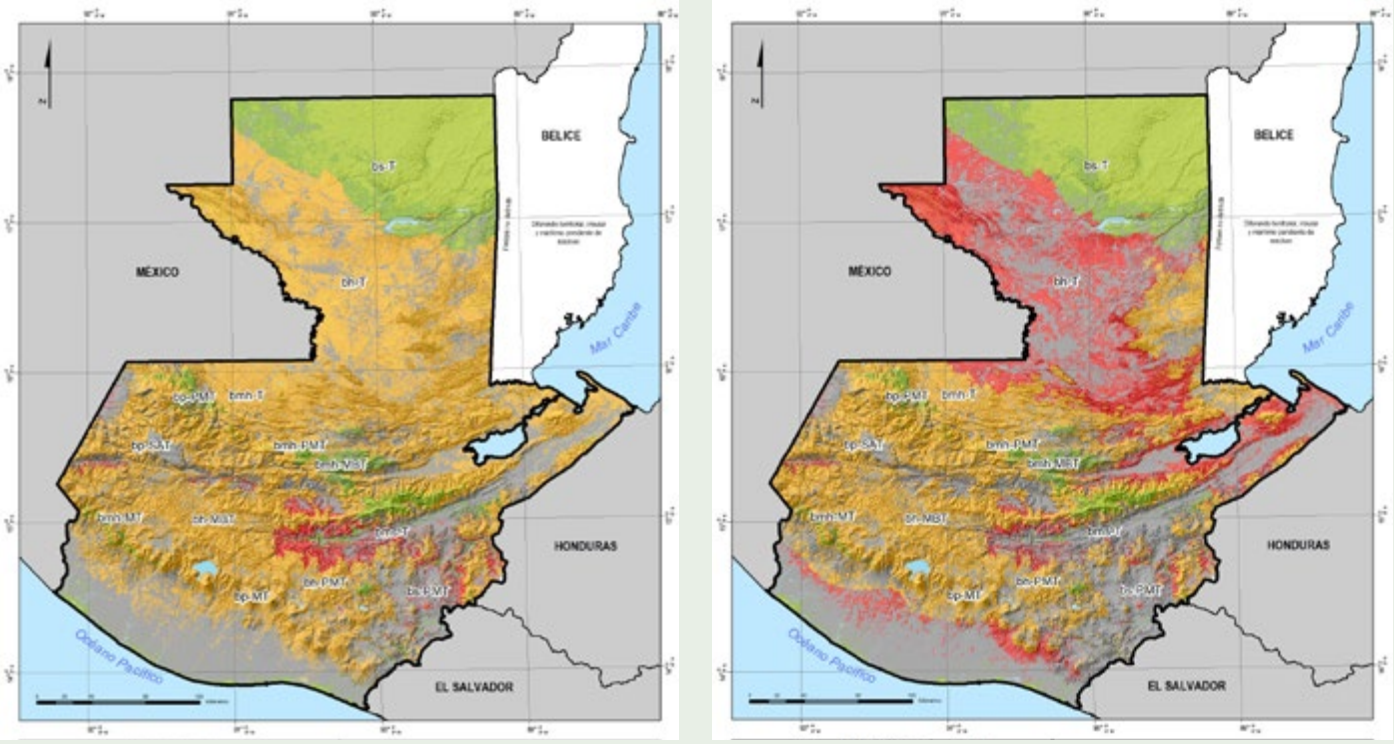
1 Key sources of information include the forest cover maps for 1991, 1996, 2001, 2006, 2010, 2013, and 2014, and the land use maps for 2003 and 2018. No new data was generated, but the analysis done for the account is novel.

2 See the National Biodiversity Strategy and Action Plan: https://www.cbd.int/doc/world/gt/gt-nbsap-v2-es.pdf. Further information on the Mesoamerican Corridor is available at https://www.wri.org/publication/defining-common-ground-mesoamerican-biological-corridor.

3 Additional information: https://icc.org.gt/wp-content/uploads/2018/06/Infor_reporte_ESP_2018-05-28.pdf.

4 The extent accounts grouped ecosystems in five categories for the country's 13 ecosystem types. The ecosystem accounts use the Holdridge Life Zones System, which is a global bioclimatic scheme for the classification of land areas. The Holdridge system is a relatively simple system based on few empirical data, giving objective mapping criteria. This allows its use and application in countries with limited data. The system has found a major use in assessing the possible changes in natural vegetation patterns due to global warming. Further information can be found in Pérez Irungaray et al. (2016).

FIGURE 4. **ECOSYSTEM CONDITION ACCOUNTS BY ECOSYSTEM TYPE (2001-2014)**



Source: Ecosystem Accounts

services such as water regulation services and biodiversity (Figure 3a).[5] All ecosystem types lost forest cover between 1991 to 2014, with humid and very humid ecosystems losing 1.2 million hectares, or 33 percent of their forest cover, in 1991 (Figure 3b).

Ecosystems health is reaching a threshold with serious effects on biodiversity. As part of the condition accounts, spatial analysis was done using key indicators: patches, vegetation cover, fragmentation, representativeness, isolation, connectivity, and others. As shown in Figure 4, the analysis included patches of forests greater than 51 percent (green); between 26 percent and 50 percent (orange); and less than 25 percent (red) to define areas in which the situation is especially critical. Results show that the northern part of the country is especially affected, where agriculture, particularly cattle ranching and palm oil are gaining vast areas of land. However, protected areas set up using the forest concession instrument have been effective in the northern-most region. This points to the need for potential expansion of conservation areas as well as for setting up incentive mechanisms to discourage conversion of vegetation cover that will result in the loss of the ecosystem services provided by forests. The results of the work also strengthen the case for increasing fiscal resources for the agencies involved in the conservation policy in protected areas (CONAP) and the forest policy outside protected areas (INAB). These agencies will be able to use the findings of the WAVES-supported work to prioritize across space their efforts toward improved management of natural resources.

5 See Ecosystem Account Report.

INDONESIA

This year saw the completion of phase one of the WAVES program in Indonesia. A high-level event, chaired by the deputy minister of the Indonesian Ministry of National Development Planning (Bappenas) and the head of the Central Bureau of Statistic (BPS), marked the occasion. More than 150 guests representing various government agencies, academia, nongovernmental organizations (NGOs)/civil society organizations (CSOs), the private sector, and media attended the meeting. Several reports were launched, consisting of program findings and analysis, developed in collaboration with Bappenas, the BPS, and the Ministry of Finance. Since its inception, the program has completed national land accounts, pilot water accounts for the Citarum River Basin, peatland accounts for Sumatra and Kalimantan, and a synthesis report. The program has also helped strengthen the Indonesian System for Integrated Environmental and Economic Accounting (SISNERLING) by improving coverage of natural resources and data quality.

One of the program's key contributions has been to provide the data and modeling techniques for the Low Carbon Development Initiative for Indonesia (LCDI)—a new platform for Indonesia's development that aims to maintain economic growth through low-emissions development activities while minimizing exploitation of natural resources.

The next phase of WAVES work in Indonesia will be in line with the new thinking that the Global Program for Sustainability, successor of the WAVES program, has brought to the table. The program will be working on options for improved management of peatlands using a combined biophysical and general equilibrium economic modeling, as well as supporting the development and use of accounts for coastal resources (including mangroves). WAVES support has been instrumental in leveraging financing from other Indonesia-specific trust funds.

ACCOUNTS COMPLETED

National land cover accounts
1990–2014

Feasibility analysis for the development of water account in the Citarum watershed
2014 and 2016

Land extent accounts for Sumatra and Kalimantan
2017

Ecosystem accounts for peatlands
(Sumatra and Kalimantan 1990–2014)

INSTITUTIONALIZATION

- A draft strategic Plan for SEEA Implementation (SEEA Road Map) was developed by the BPS in discussion with other agencies—a major step toward institutionalizing accounts.
- Bappenas issued a new decree, replacing the 2016 decree, on the establishment of the Coordinating Group for SISNERLING implementation, similar to the WAVES Steering Committee.
- WAVES support to the Ministry of Finance fed into the policy dialogue on the Fiscal Potential of Natural Resources, a new draft regulation[6] largely based on the lessons learned from other WAVES countries.

POLICY IMPACT

In 2017, Bappenas, in cooperation with the World Bank and several development partners, introduced the Low Carbon Development Initiative for Indonesia to explicitly incorporate greenhouse gas (GHG) emissions reduction targets into the country's National Medium-Term Development Plan (RPJMN) 2020–2025. The LCDI served as an analytical platform assessing the environmental implications of Indonesia's development; it allowed the government to explore ways to sustain economic growth while minimizing exploitation of natural resources and reducing carbon emissions.

One of the key findings of the LCDI report is that a low-carbon growth path can deliver an average GDP growth rate of 6 percent annually until 2045. By sustainably using natural resources, and by reducing its carbon and energy intensity, Indonesia could lower its total GHG emissions by nearly 43 percent by 2030.[7] This surpasses Indonesia's target in its national climate action plan, or Nationally Determined Contribution (NDC), presently set at 41 percent below baseline.

WAVES technical assistance provided data on natural capital compliant with the System of Environmental-Economic Accounting (SEEA) standard that could be used for the systems dynamic modeling approach used in the LCDI. The models analyzed the carrying capacity of the natural systems under different growth scenarios and showed how growth could be constrained when the capacity of natural capital to provide ecosystem services slows down. This represents a key contribution of WAVES to Indonesia's policy making, as the LCDI is expected to be used in the work that underpins decisions that will be made in the next five-year policy cycle.

6 Still under discussion by the government of Indonesia.

7 Indonesia's NDC includes a unilateral reduction target of 29 percent (~2,869 MtCO2e) below business as usual (BAU) emissions of GHGs by 2030, plus a conditional target of up to 41 percent reductions below BAU with sufficient international support (Bappenas 2019). It targets 2030 emissions of 2,037 MtCO2e under the unconditional target and emissions as low as 1,693 MtCO2e under the conditional target (WRI 2017).

Land Accounts Reveal Forests and Peatlands Are Threatened by Agricultural Expansion

The extent account for peatlands revealed that 52 percent of peat forests in Kalimantan and Sumatra were converted to other types of land cover between 1900 and 2014. In both Sumatra and Kalimantan, plantation crops such as oil palm fruit, rubber, and acacia have expanded. However, these changes lead to various environmental impacts such as high carbon emissions, degraded peatlands, fire, and smog formation with associated health impacts. Over time, agricultural activities will not be maintained because of soil subsidence in drained peatlands and subsequent flood risks.[8]

The pattern of land use and land use change observed in peatlands since 2000 has resulted in large carbon emissions. The combined effect of peat drainage (which releases carbon stored in peat, resulting in CO_2 via oxidation upon contact with the atmosphere), land use change, and forest fires caused over 40 percent of total GHG emissions in Indonesia; the bulk of peatland emissions (some 95 percent on average) comes from oxidation in drained soils and from fires (Table 2). These figures are telling in terms of the key role that peatland management will have in the near future for Indonesia's contribution to its NDC climate actions. The share of peatlands in the country's total emissions will be larger once Papua's peatlands are included in the tally under a business as usual scenario.

8 Indonesia Ecosystem Account for Peatlands (BPS, forthcoming).

TABLE 2. CO_2 EMISSIONS FROM PEATLANDS IN SUMATRA AND KALIMANTAN (MILLION TONS)

Sources of emissions	1995 (a)	2000	2005 (a)	2010	2014	Average share (2005-2014) (b)
Land use change (c)	73.40	108	45	58.75	28.8	4%
Oxidation (d)	240	273	294	333	387	34%
Fire (e)			704	508	610	61%
Total	313	381	1,043	900	1,026	100%
Total Emission Indonesia (f)	1,435	1,315	1,749	2,285	2,472	
Peatland emissions in Sumatra and Kalimantan relative to total emissions (g)			60%	39%	42%	46%

Source: Indonesia Ecosystem Account for Peatlands (BPS with WAVES Support)[9]

NOTES:

(a): Estimates for each year were published the following year (e.g. the emissions for 1995 were published in 1996)

(b): Emissions related to the release of carbon stored in above-ground biomass following land clearance

(c): The figure is the average just for the three years included in the period (i.e. 2005, 2010 and 2014) and not over the whole period 2005 to 2014

(d): The figures oxidation-related emissions are likely to be under-estimated because they are based upon conservative assumptions regarding the area of peatland covered with plantations, the occurrence of peatlands (both are in line with government data) and the drainage level in plantations. The numbers are based on government data on land cover (KLHK map).

(e): Estimates for forest fires-related emissions are not available for 1995 and 2000

(f): Source: WRI ClimateWatch/ CAIT, which includes FAO estimates for Forestry and Other Land use emissions. FAO indicates that CH4 and N2O, and additional CO2 emissions are estimated for fires and drainage of organic soils which mean that their estimates include oxidation-related emissions (http://www.fao.org/faostat/en/#data/GL)

(g): Peatland emissions refer only to Sumatra and Kalimantan. Once other islands (and in particular Papua) are included, the share in total emissions would probably be higher

9 These are preliminary figures and the numbers are based on government data on land cover (KLHK map).

RWANDA

In 2019, following completion of the land and water accounts, Rwanda focused on production of two new accounts for minerals and for ecosystems, as well as further institutionalization of the NCA process. There were also important efforts to build on and integrate the results from the land and water accounts into specific policies and decisions of the government.

The completion of water accounts was marked with a high-profile event on integrated water resources management (IWRM) where the key findings and recommendations were discussed at a panel organized by the Ministry of Environment (MoE) and the Netherland Embassy in Rwanda. The event was strategically linked to the government's effort to establish a national Water Resources Board (WRB) with a broader mandate to implement Rwanda's IWRM framework. Through the water accounts, and through specific technical assistance and recommendations solicited by the MoE's design team, the WAVES NCA work in Rwanda was able to influence the mandate and priorities of the WRB, particularly in the areas of cross-sector coordination and data harmonization needs.

ACCOUNTS COMPLETED

Land accounts
(2014 – 2017),
published 2018

Water accounts
(2012 -2016), waiting final clearance to be published 2019 by National Institute of Statistics for Rwanda

Mineral resource flows accounts (MRA)
(2012–2016), final report available, waiting publication in 2019

Ecosystem accounts,
final draft work available, also to be validated and published in 2019

POLICY BRIEFS WRITTEN

Land Use Changes • Land Cover Changes • Summary of Results and Integration into the National Land Development Master Plan

Water Accounts • Renewable Water Resources Availability and Water Demand in Rwanda • Water Use Efficiency and Productivity in Rwanda • Water Stress Level in Rwanda

Mineral Resource Flows Account • Analyzing Mineral Resource Rents in Rwanda: Towards Improved Sector Liquidity and Sustainability

The completion of water accounts was marked with a high-profile event on integrated water resources management, organized by the Ministry of Environment and the Netherlands Embassy in Rwanda.

INSTITUTIONALIZATION

- The Ministry of Finance and Economic Planning (MINECOFIN) has taken on the work on natural capital accounts from the MoE. Rwanda's NCA work is now housed at a MINECOFIN-affiliated agency, the National Institute of Statistics for Rwanda (NISR), whose director general currently chairs the NCA National Steering Committee.
- A nine-member unit made up of local experts is now housed within the NISR. WAVES has provided capacity building, planning, and resource mobilization assistance to the new unit.

POLICY IMPACT

- Water accounts have informed planning of new technologies for water resources management and building new water storage capacity to increase food security.
- Analysis from the water accounts has informed the formation of the new Rwanda WRB, set up by the government in 2018. The WRB has a broader mandate of implementing Rwanda's IWRM, and will lead the work on water accounts going forward.
- The mineral resources flow accounts 2019 will inform the improvement of the mining sector performance, directing investments and increasing productivity of the sector and boosting export earnings. The accounts are helping the government understand the negative externalities of the mining sector. Spurred by mineral accounts, the government of Rwanda is undertaking a specific study to understand the economic value of the environmental degradation caused by mining activities.

Ecosystem Accounts Show Soil Erosion Trends

Rwanda has produced its first version of ecosystem accounts that aim to show how selected ecosystem services are changing over time, to identify the implications of these changes for Rwandan society, and to suggest ways to plan and manage future stocks, flows, risks, and opportunities associated with ecosystems and natural capital. The decision to focus on erosion is based on the fact that 70 percent of Rwandans live in rural areas and that 90 percent of cropland is on steep slopes, with small landholdings and unsustainable farming practices that degrade the soil and increase erosion. Coupled with high-intensity rainfall, this leads to reduced water infiltration into the soil and accelerated rainwater runoff, so crops are less productive, soil erodes, and downstream flooding risks are raised. The ecosystem accounts focus on several indicators of interest in the management of watersheds, runoff, and soil retention, including soil loss, baseflow, and "quickflow" (fast-flowing destructive water).

The accounts show that in 2015, approximately 158 million tons of soil were eroded, with an average soil loss of 62 tons per hectare (for the year) or 13 tons per person per year. The trend since 1990 shows that soil erosion has increased by 54 percent, or some 3 percent per year on average. The Integrated Valuation of Ecosystem Services and Tradeoffs (InVEST) model was used to highlight a range of soil loss or erosion indicators at different scales or in different spatial forms summed across different spatial extents (that is, catchments, districts, provinces, or the nation), and to pinpoint priorities across space for remedial action. The Upper Nyabarongo catchment had the greatest soil loss, at some 32 million tons in 2015. The combined soil loss volume of the Upper and Lower Nyabarongo contributed to 37 percent of the total soil erosion in Rwanda. The Rusizi catchment had the lowest soil loss.

Soil loss has implications for fertilizer costs, food prices, water pollution, and food security. Recommendations from the accounts reinforce the priority that Rwanda is placing on expanding sustainable land management practices, improving catchment management, and developing basin-wide environment management programs.

TABLE 3. **NATIONAL SOIL LOSS FOR 1990, 2000, 2010, AND 2015**

National soil erosion (Tonnes/Yr)		Change in soil erosion from past to current period
1990	102,450,911	
2000	157,652,121	54%
2010	135,960,937	-14%
2015	158,166,230	16%
Change, 1990-2015	**55,715,319**	**54%**

Note: Positive changes show an increase in erosion and negative changes show a decline in erosion.

UGANDA

Uganda has had a productive first year in the WAVES program. The Uganda Natural Capital Accounting program was launched in October 2018 by the permanent secretary of the Ministry of Finance, Planning and Economic Development (MFPED). The launch event was attended by stakeholders from the government, academia, and NGOs. A technical working group (TWG), chaired by the MFPED and co-chaired by the Uganda Bureau of Statistics (UBS) and the National Planning Authority (NPA), is leading the implementation of NCA.

Building on the existing data provided by the National Forestry Authority, Uganda completed its land account (physical assets) 1990–2015 and its launch is planned for late November 2019. Preparation of the forest account is ongoing and an experimental ecosystems account will be developed thereafter.

The development of accounts was enhanced by dedicated capacity-building activities (a basic SEEA training in March 2019, two training sessions on adjusted macroeconomic indicators in March and June 2019, and a knowledge exchange with Zambia and the Netherlands hosted by Statistics Netherlands) and learning by doing.

Three issue papers were developed, in part to inform preparation of the Third National Development Plan. The National Plan for Advancing Environmental-Economic Accounting (earlier drafted with support from the United Nations Statistics Division) was updated and will be launched during the Natural Capital week hosted by Uganda in November 2019.

ACCOUNTS COMPLETED

Land (physical asset)
1990 – 2015

Forest
1990-2015,
work in progresss

POLICY BRIEFS WRITTEN

Land account (physical asset)

Woodfuels assessment

Adjusted macroeconomic indicators

Natural Capital Accounting and National Development Plan III

INSTITUTIONALIZATION AND CAPACITY BUILDING

The program implementation is fully imbedded in the existing government of Uganda structure. The program is led by a TWG composed of the MFPED and the NPA (chairs), and the UBS (serves as co-chair and ensures technical oversight). The National Steering Committee is led by the Ministry of Water and Environment (MWE) and includes the National Environmental Management Authority (NEMA), National Forest Authority (NFA), and Uganda Wildlife Authority (UWA).

Several capacity-building initiatives have benefited participating staff of ministries and agencies:

- Introductory session on natural capital accounting (June 2019)
- Basic SEEA training (March 2019)
- Two training sessions on adjusted macroeconomic indicators (March 2019 and June 2019)
- Stakeholder engagement/sensitization workshop resulting in development of a communications strategy and work plan (March 2019)
- Knowledge exchange on SEEA for Uganda and Zambia hosted by Statistics Netherlands (September 2019)

POLICY IMPACT

Work on the accounts was supplemented by preparation of three issue papers in time for the drafting of the Third National Development Plan (NDP III), which is scheduled for finalization by the end of 2019.

Issue paper on NCA and NDP III: The main objective of this paper is to mainstream NCA into development dialogue and the NDP III planning process. Specifically, the paper seeks to raise awareness and appreciation of NCA as a tool to inform policy, decision making, and the development planning process. It also aims to identify opportunities to ensure that the NCA activities are included in the NDP III, to ensure longer-term sustainability of the NCA program. The paper also suggests relevant indicators in the plan where NCA can be used for monitoring progress.

Adjusted macroeconomic indicators: This is Uganda's first report of adjusted macroeconomic indicators, prepared using a combination of global indicators and Uganda's own data. It spells out the adjusted net national income (ANNI) and the adjusted net savings (ANS), in addition to the wealth measure indicators. Comprehensive wealth results reinforce other work showing that natural capital is being depleted in Uganda, and has declined since 2010. This report makes a number of general recommendations with regard to NCA, as well as some specific ones relevant to the NDP III, currently under preparation. These include a recommendation to introduce a "Sustainable Budgeting Rule" and accompanying measures to ensure that future fiscal revenues from minerals and energy are spent only on public investment (including education spending).

Woodfuel assessment: The purpose of this issue paper is to provide data on the scale, value, and employment contribution of woodfuels to the economy of Uganda. The woodfuel industry is significant and growing, but a lack of reliable data on scale, value, and economic and social contribution is indicative of the low priority it receives, and the marginalization and informality experienced by actors in the supply chain.

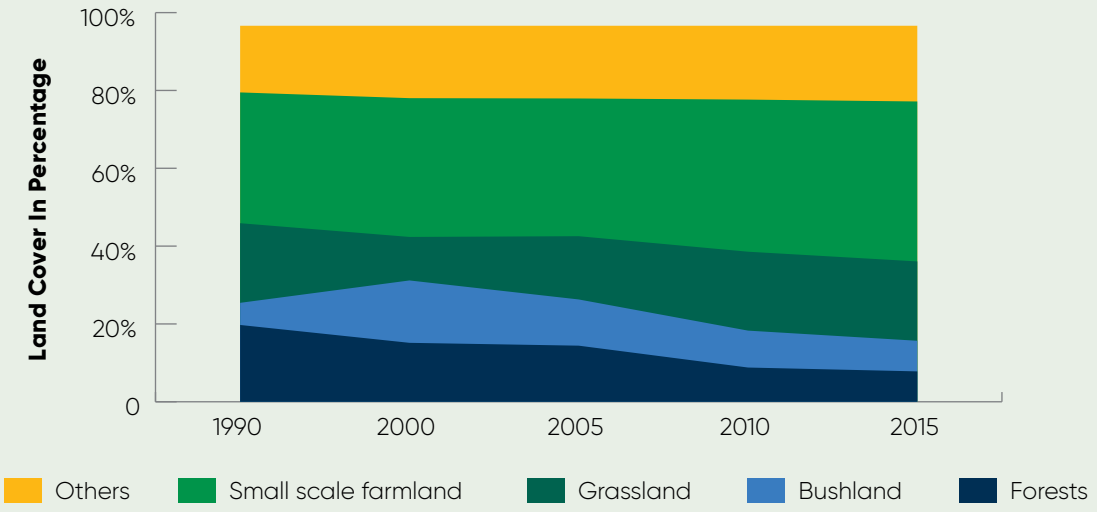
Accounts Improve Understanding of Land Use Patterns

Land accounts show the land cover/land use changes associated with human activity and natural processes over a 25-year timeline, 1990–2015. The accounts presented are for the national-level land cover/land use, by Uganda's four regions (central, east, north, and west); 11 subregions of Acholi, Central North, Central South, East Central, Elgon, Karamoja, Lango, Southwest, Teso, West Nile, and Western; and 112 districts, based on district boundaries as of July 1, 2010.

Key results from the accounts show a significant transformation of the country's landscape: Land cover with a lesser degree of anthropogenic footprint (such as forests and bushlands) accounted for 38 percent of the total in 2000; it shrank to 19 percent in 2015. On the other hand, small-scale farmland and grasslands, which accounted for 57 percent of the total in 2000, grew to 75 percent in 2015. Some of the conversions that occurred in woodlands and grasslands were likely related to harvesting of woodlands for woodfuel production and overgrazing of grasslands.

The accounts provide an improved understanding of the transitions in land use in the country, thus supporting the implementation of the guiding principles of the National Land Policy, which sees land as central to planning the development of productive activities. Land accounts will support review and/or evaluation of the targets of the National Development Plans and the long-term development strategic frameworks such as Vision 2040 and Uganda's attainment of the Sustainable Development Goals, among others.

FIGURE 5. **UGANDA: SHARES OF LAND COVER OVER TIME**



NOTE: other land cover includes wetlands, commercial farmland and build up area. Areas of open water are not included in the chart

ZAMBIA

This year, Zambia completed water and forest accounts with important findings that support policy recommendations on better use of natural resources for long-term economic development. The results from the water and forest accounts were presented in several forums, such as the Zambia National Assembly and the Zambia National Commercial and Agriculture Show. Results from land accounts are still undergoing validation.

Some policy issues emerging from the accounts include the urgent need to protect water catchment and recharge zones by halting excisions and de-gazettement of protected forest areas (PFA), which are causing ground water contamination and depletion.

The modeling technical working group comprising officials from the Ministry of Finance, Water, and Forest was trained in using the Integrated Environmental Economic (IEE) model, which shows the interaction between natural capital and the economy. The model will be useful in assessing the relationship between natural capital on socioeconomic development and evaluating the negative economic consequences of environmental degradation. The results will be used for policy analysis and planning within the Ministry of Development Planning (MNDP) as well as the Ministry of Finance.

Zambia has started the development of three new accounts; tourism, minerals, and energy, under the coordination of the MNDP, with technical support provided by the WAVES program.

Statistics Netherlands invited Zambia and Uganda technical working groups for a training on SEEA.

ACCOUNTS COMPLETED

Water

Land

Forest

INSTITUTIONALIZATION AND CAPACITY BUILDING

The government has taken several steps to mainstream NCA production. Capacity building under the WAVES program has been key.

- The MNDP has begun strengthening the environmental statistics division of the Central Statistical Office (CSO) by creating an NCA Data Management team with a mandate to store data generated from the accounts, and manage their dissemination and periodic update.
- The Water Statistics Unit in the Ministry of Water Development and Sanitation is in the process of earmarking a budget line in to support periodic updates of the water accounts.
- Current members of the technical working group participated in the knowledge exchange on SEEA for Zambia and Uganda in the Netherlands, hosted by Statistics Netherlands (September 2019).

POLICY IMPACT

Natural capital accounting for land, forest and water resources will influence four of the five pillars of the Seventh National Development Plan (SNDP):

- Pillar 1 - Economic diversification and job creation
- Pillar 2 - Poverty and vulnerability reduction
- Pillar 4 - Enhancing human development
- Pillar 5 - Creating a conducive governance environment for a diversified economy

The water accounts are linked to pillars 1 and 4 of the SNDP and will help address re-use and recycling of treated effluent and maintaining adequate water quality. Water resources are closely linked to sectors such as agriculture, aquaculture, forestry, and energy (hydropower).

The forest accounts are exploring policy support in areas of reducing deforestation, carbon sequestration, climate mitigation; and research on development of large forest areas, and areas of wooded land. They are linked to pillars 1 and 2 of the SNDP.

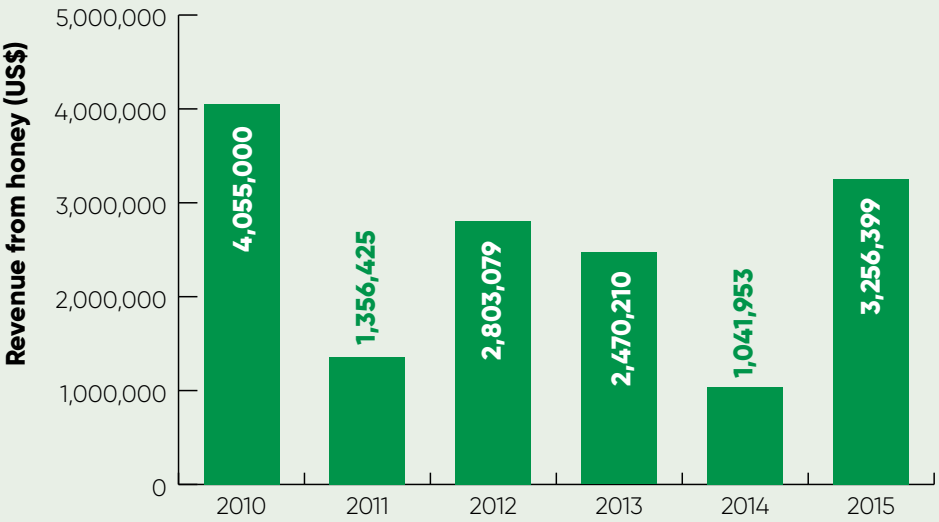
The land accounts will inform and drive the government policy, direction, and agenda on enhancing land productivity, agricultural expansion, urban and rural development planning, and reducing deforestation; the accounts are linked to pillars 1, 2, 4, and 5.

Economic Potential of Investing in Non-timber Forest Products

In Zambia, forests play an important role because they ensure the provision of several ecosystem services that are key for the country's economy: water regulation, soil retention, and carbon sequestration, among others. The forest sector contribution to the country's GDP, as accounted for in the national accounts, is 5–6.3 percent and provides formal and informal employment to around 1–1.4 million people. However, the sector contributes more to the economy than is currently captured in GDP figures.

Forest accounts found that licensing for forestry products (for example, timber, honey, wax, and charcoal) can contribute to government revenue, exports, and foreign exchange reserves. Investments in non-timber forest products and/or tourism related to natural areas could generate high economic returns for forest dwellers without contributing to deforestation or the expansion of forest plantations into key natural forest areas. For example, apiculture (or beekeeping) is a potential growth sector, which is increasingly coming into sharp focus in the government's diversification strategy. Although honey only represents a very small but growing share of Zambia's total exports (0.01 percent in 2014 and 0.04 percent in 2018), its contribution to nontraditional exports has improved from 0.04 percent in 2014 to 0.18 percent in 2018. Although production is barely meeting domestic demand, it has immense potential to increase production for both the domestic and international markets, as noted in the World Bank's 12th Zambia Economic Brief-Wealth Beyond Mining: Leveraging Renewable Natural Capital. There is a high demand for both honey and bees wax on the international market. Between 2010 and 2015, the country earned US$35 million from the sale of liquid honey (Figure 6) and another US$8.4 million from the sale of bees wax in the same period, mainly from the export market (United Kingdom, Germany, and South Africa were the main markets). With appropriate investments, these products can become a much larger share of exports in Zambia; more importantly, they can provide solid and more sustainable livelihood opportunities to rural people, compared with traditional alternatives such as employment in the copper mining sectors.

FIGURE 6. **VALUE OF LIQUID HONEY SALES, 2010–2015**



Source: Zambia Forest Accounts

Update on Targeted Technical Assistance Countries

The Targeted Technical Assistance (TTA) is a modality of engagement that complements the support provided through the Core Implementing Countries (CICs) window. TTAs are smaller grants intended to provide more "just-in-time" support for specific investment or policy questions that can be answered through work on natural capital or ecosystem services. TTAs typically focus on Bank-supported policy dialogue and investment operations.

The TTA portfolio now comprises eight activities, including seven country-level tasks (Cambodia, Kyrgyz Republic, Lao People's Democratic Republic, Madagascar, Myanmar, Nepal, Uzbekistan, Vietnam) and a regional activity related to the West Africa Coastal Areas Management (WACA) program. Table 4 summarizes the essential features of these activities.

TTAs are proving to be a valuable instrument of engagement: by being closely linked to the Bank investment program, they can provide NCA insights to the design and/or implementation of operations worth some US$500 million. This is key, as it can showcase in a tangible way the practical usefulness of NCA work, thereby enticing governments to embark on a more long-term development of accounts, which can be supported through follow-on CIC support.

The two main areas of operational work being informed by TTAs are forests, and landscape management more generally (Cambodia, Kyrgyz Republic, Lao PDR, Madagascar, Nepal, Uzbekistan), and ecosystem services in coastal areas (Myanmar, Vietnam, and the WACA program). The work can provide insights on the value of ecosystem services and on risk mitigation options for specific investment operations; or, as in the case of the WACA program, it can help design or update larger investment planning instruments (for example, Multi-Sector Investment Plans in Nigeria and Ghana).

The rate of progress has been uneven, with some countries proceeding somewhat slower (for example, Myanmar). This is by and large physiological: the design or approval of the investment operations to which a TTA is linked is often affected by factors outside the control of the GPS/WAVES program (for example, political turnover linked to the electoral cycles, parliamentary approval, scaling down of

counterpart funding due to fiscal policy restrictions or re-alignments, and so on). In many cases, patience pays off: it could often be counterproductive to pursue a stand-alone track of the TTA work while issues affecting the pace of project design are being resolved, as this would negatively affect the eventual uptake of the results.

On the positive side, there is evidence that the TTA work is paying off in terms of engaging countries for longer-term work on natural capital. A good example is Nepal (Box 1), which has received TTA support in two stages. The objective of the first stage was to estimate the value of ecosystem services provided by various types of forest lands to inform development of a compensation scheme for forest land diversion for development projects. The findings are to be published in the Nepal Environment Sector Diagnostic (ESD) by the World Bank. Phase two of the work, which is nearing completion, was instrumental in quantifying the benefits of transitioning to a sustainable forestry management model, and in assessing the related social and institutional implications. As a result of this engagement, the government of Nepal has expressed interest in becoming a CIC. The goal is to extend to other natural resources the process of defining sustainable policy targets successfully piloted in the case of forests.

TABLE 4. **TARGETED TECHNICAL ASSISTANCE: KEY FEATURES OF THE COUNTRY WORK SUPPORTED**

Country	Purpose of accounts	Potential impact on policy	World Bank project informed/influenced	Progress	Dialogue/outreach with government
Cambodia	Strengthen the business case for enhancing the use and management of natural resources in the Cardamom Mountains Strengthen the capacity of the government to use ecosystem accounting approaches in landscape planning and decision making	Protected area financing Designing payments for ecosystem services (PES)	Cambodia Sustainable Landscape and Ecotourism Project with GEF additional financing adding up to U$54 million	Conservation International (CI), the technical consultant for this project, has developed the methodology for ecosystem valuation Data collection is ongoing In June, the Bank and CI teams met key government counterparts to discuss next steps	The team participated in a National Dialogue on PES in Cambodia attended by 200 participants
Kyrgyz Republic	Develop forest accounts as mandated in the recently approved Forest Development Concept to 2040 Develop methodology for tourism accounts for Issyk Kul oblast (80% of tourism frequentation), and apply it to a Bank lending program	Accounts will identify indicators for the National Forest Inventory update and the Forest Management Information System (FMIS) under the Integrated Forest Ecosystem Management Project	Third Phase of the Central Asia Regional Links Program (CARs-3)	Compilation of forest accounts is ongoing Data gaps assessment and capacity needs for rolling out the forest accounts have been finalized Guidance and training plan (with specific modules and timeline) has been completed Tourism statistics are being collected and the first field mission is planned for November 18–December 6	Initial forest accounts were prepared and discussed in a stakeholder workshop in July 2019
Lao PDR	Estimate natural capital value at the national level Produce the first NCA of selected assets in a selected landscape, and estimate the economic value of these assets and ecosystem services	Input to National Green Growth Strategy Input to design new investment project financing for Lao Landscapes and Livelihoods	Lao Landscapes and Livelihoods (US$58 million) project, which is under discussion, to provide programmatic approach to landscape development The third phase of the Lao PDR Green Growth Development Policy Operation Series to promote forest sector development	A multisectoral technical working group comprising government sectoral representatives has been established The Ministry of Planning and the National Statistics Bureau are leading the work Data has been collected for national and provincial level	A workshop was held in June with participation from different branches of the government where scope and site of the project was identified

Country	Purpose of accounts	Potential impact on policy	World Bank project informed/influenced	Progress	Dialogue/outreach with government
Madagascar	Develop a platform for assessing/modeling selected ecosystem services (e.g., food provisioning, erosion control, carbon storage), as a key input to reorienting land use and land use change processes	Ensure policies related to land use planning are more evidence-based or investing in areas where impacts on investments are likely to be maximized (e.g., national reforestation policy)	The US$108 million sustainable agriculture landscape management project (PADAP), which consists of an integrated approach for managing five landscapes in Madagascar The US$50 million REDD+ Emissions Reduction Program in the northeastern part of the country	The team has been working on two parallel, related models: (a) a regional model (LANDSIM-R) that models the hydrology and sedimentation dynamics of a watershed under different scenarios; and (b) a national model (LANDSIM-P) that models household dynamics, land degradation and resulting land use change under different scenarios LANDSIM-R has been fully delivered to the client for its use under the PADAP project. The government has taken the decision that LANDSIM-R will be used as a tool for informing the ongoing design of the landscape management plans to be developed in the PADAP five landscapes LANDSIM-P has been almost finalized and it will be tested in two real case studies dealing with agriculture value chains and reducing emissions from deforestation	Several workshops have been conducted involving various ministries and other stakeholders during the process of developing, calibrating, and finalizing both models
Myanmar	Valuation of mangroves National balance sheet Forest accounts Coastal zone accounts	Valuation of mangroves to see the marginal value of increasing mangrove coverage to inform coastal planning and effectiveness of community forest initiatives Forest accounts will evaluate benefits from forests to identify forest management options	Forest Landscape project Coastal Resilience report	A workshop was held with the Ministry of Planning and Finance, the Central Statistical Organization, and the Ministry of Environmental Conservation and Forestry to discuss areas of focus in the country The team is exploring the use of "Boost database" as a quick way to access data	A workshop was held with government stakeholders in March 2019
Uzbekistan	Valuation of soil retention ecosystem services with regard to preventing air pollution, provided by plantation of saxaul forest in Aral Sea area and to allow for the hidden benefits from the ecosystem services to be included in ROAM analysis in pursuit of the goals of Astana Resolution	Informing government dialogue on landscape restoration projects	Kazakhstan GEF project North Aral Sea project CAMP4ASB	Terms of reference prepared and a firm hired (ICARDA) to do valuation Government focal point appointed The proposed work was presented at the Aral Sea High level conference	An inception workshop to be conducted in January 2020

Country	Purpose of accounts	Potential impact on policy	World Bank project informed/influenced	Progress	Dialogue/outreach with government
Vietnam	Valuation of coastal assets to determine revenue generation and wealth	Inform ongoing discussions with government on ways to enhance coastal resilience and how to finance investments	Forest Sector Modernization and Coastal Resilience Enhancement project (US$150 million) to improve coastal forest management	An assessment of carbon sequestration potential for mangroves has been done for Quang Ninh province An international consulting firm has been hired to do valuation work in partnership with an institute in the Ministry of Natural Resources and Environment Two provinces identified in the Mekong Delta—Quang Ninh and Ca Mau—for validation work	A mini technical workshop was conducted on valuation of coastal assets

Country	Purpose of accounts	Potential impact on policy	World Bank project informed/influenced	Progress	Dialogue/outreach with government
West Africa Coastal Areas Management (WACA) Program	Valuation of externalities on pollution related to air, water, marine, and deforestation (for the analytical work on the cost of environmental degradation in coastal cities in Nigeria) Valuation of ecosystem services (particularly the role of mangroves in reducing the risk of coastal flooding)	The analysis will inform the development of a Multi-Sector Investment Plan in Nigeria and Ghana, allowing countries to design policies and investments that take the value of ecosystem services and risk mitigation into account The analytical work supports the engagement of client countries, academic institutions, regional agencies, and partners in the economics of coastal environmental degradation	The work supports the knowledge pillar of WACA and the WACA scale-up platform, which aims to facilitate access to knowledge and accelerate access to finance for coastal resilience	Analytical work for the cost of environmental degradation in coastal cities in Nigeria has started Role of mangroves in coastal flooding has started in Ghana and Guinea There is great interest following the publication of the initial results in March 2019; the team is leveraging the results of this work, and the new work financed by the WAVES trust fund with additional resources to expand the analyses, and to extend dissemination in the targeted countries	The Bank has engaged in with the governments of Ghana and Nigeria for the Multi-Sector Investment Plan, which in turn, under the broader WACA umbrella, could lead to the preparation of future investments operations

BOX 1.

TARGETED TECHNICAL ASSISTANCE TO NEPAL'S FORESTRY SECTOR

The World Bank has a strong engagement with the government of Nepal and supports its efforts to boost economic growth through increased value generation from the forestry sector, and enhancement of its hydropower generation and transport infrastructure, in a sustainable manner. In the forestry sector, the Bank supports the government's policy to shift from protection-based forestry to production-oriented sustainable forest management, as well as to balance its NDC pledge to maintain forest cover at 40 percent of its land area. The government is in the process of revising the system of paying for offsets arising from the need to cut forests for new infrastructure projects. The Bank is supporting the revision of the procedure and the adoption of regulations that are in line with international good practices through two development policy loans programs.

The work done under WAVES allowed the Bank team to analyze the economic values of timber under the current protection-oriented management approach and under production-oriented sustainable forest management. WAVES supported a section on economic, regulatory, and institutional analyses in the World Bank's Nepal Environment Sector Diagnostic: Path to Sustainable Growth Under Federalism, which was completed in June 2019. The TTA also allowed the team to prepare a policy advisory note[10] addressing key institutional, social, and economic principles related to an offset and compensation system. A draft of the advisory note along with the forest value calculations was presented to stakeholders in April 2019. A summary of the note was also included in the ESD as a separate section. The ESD will be launched in Kathmandu in November. The timber value estimates under two management practices will inform the economic analysis of the proposed Bank-funded Investing Forests for Prosperity at a Time of Transformation Project. The advisory note continues to inform the Bank team's dialogue with the government on the regulatory and institutional structure of the offset and compensation system.

10. Entitled Review of Policy Proposals for Forest Clearance for National Priority Projects in National Forest Areas and Protected Areas

Nepal ESD: Timber Value Estimates Under Two Forest Management Policies

Modeling of timber production and sales indicates that under sustainable forest management, annual rents and government revenues from Nepal's forests could be US$450 million and US$83 million, respectively, which is six to seven times the amount under the current practices. The model included two scenarios: (i) business as usual (BAU) and (ii) sustainable forest management (SFM). The model predicts that in 2030, under SFM, the total annual rents generated from Nepal's productive and protected forests could be around US$450 million, or six times the amount generated under BAU. Similarly, under SFM, government revenues—including royalties, taxes on sales of trees by community based forest user groups, and value added tax—could be about US$83 million, which is more than seven times the BAU estimate. The increase in production would more than cover and generate jobs and value add in local processing enterprises (see Table B1.1). SFM would also provide opportunities for Nepal to engage in international carbon markets and receive payments for verified carbon emissions reductions.

TABLE B1.1. **TIMBER-RELATED RENTS AND GOVERNMENT REVENUES UNDER THE BAU AND SFM SCENARIOS**

	Baseline 2017	BAU 2030	SFM 2030
Production (m^3, millions)	1	1	3
Rents (US$, millions)	69	77	456
Government revenues (US$, millions)	11	12	84

Note: BAU = business as usual; SFM = sustainable forest management.

PILLAR 3:
SUSTAINABLE FINANCE

"Although investors have long been aware that environmental, social and governance (ESG) information is relevant and in many cases critical for their investments - especially in developing countries, it has been a challenge for investors to make well-informed decisions due to lack of experience and data. The new ESG data portal will improve the quality, scope, transparency, and timeliness of publicly available ESG data, and gives investors and others the opportunity to benefit from research and field work experience.""

– Hiro Mizuno, Executive Managing Director and Chief Investment Officer, Government Pension Investment Fund (GPIF), Japan.

THIS PILLAR INTEGRATES SUSTAINABILITY INTO THE FINANCIAL SECTOR THROUGH THE FOLLOWING WORK STREAMS:

I. Data: Sovereign ESG Data Portal

a. Establishment of a financial markets–oriented sustainability information platform that provides investors with more robust data on the sustainability performance of countries, so they can better integrate this information into their portfolio analysis and investment decisions

II. Research agenda: Effects of sustainability on the financial sector

a. Supporting a research agenda on how sustainability drives financial risks, and how it may generate investment opportunities, with a special focus on environmental criteria

III. Sustainable finance assessments: Development and testing of a sustainable finance assessment framework and contributing components

a. The development and piloting of a diagnostic framework and related tools to assess climate and related environmental risks and opportunities facing the financial sector

IV. Capacity building, disclosure, and engagements

a. Capacity building and technical assistance on the implementation of sustainable finance measures

b. Preparing a model for impact reporting against environmental goals

c. Promoting broader dissemination, learning, and uptake of green finance data, measures, and instruments; engagement through dialogue, conferences, and workshops

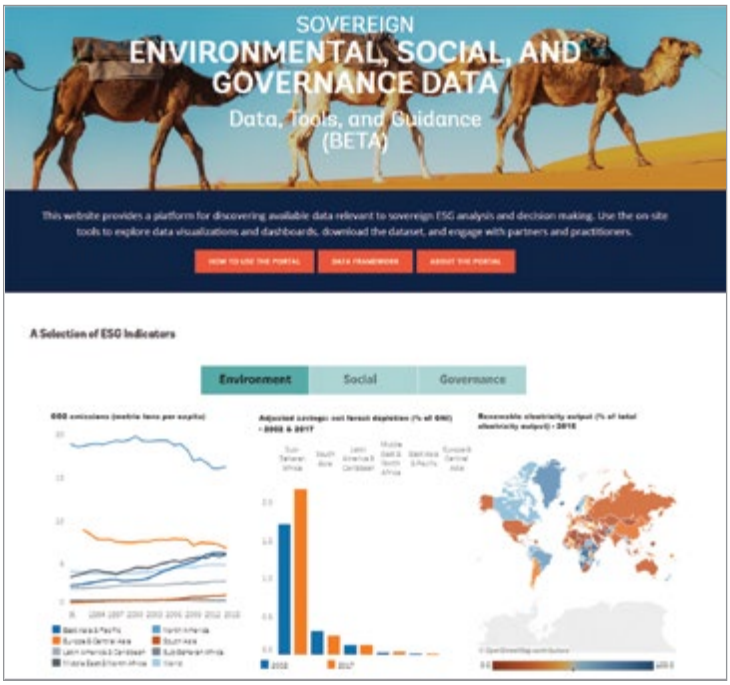
Implementation of Pillar 3 is led by the World Bank's Finance, Competitiveness and Innovation (FCI) Global Practice (GP), in collaboration with the Environment, Natural Resources, and Blue Economy (ENB) GP, the Treasury Department, the Development Economics Data Group, the Health, Nutrition and Population GP, and the Country Credit Risk Group.

Data: Sovereign ESG Portal and Framework

The Sovereign ESG Data Portal was built in FY2019 with the goal of providing improved data on sustainability criteria—including natural and human capital—to the private sector. The portal includes indicators, tools, and guidance materials for environmental, social, and governance (ESG) sovereign-level analysis. These ESG tools are the result of collaboration with institutional investors, other stakeholders, and topical experts across the World Bank Group (Bank Group). The project aims to contribute to better alignment between investors' ESG analysis and key sustainable development policy indicators and analysis, as well as to increase data transparency and support private sector investments in emerging markets.

A growing body of research demonstrating the importance of ESG criteria indicates that investors need to manage and assess ESG risks and opportunities associated with their investments—for all asset classes, including sovereign bonds. As part of a research program with the Japanese Government Pension Investment Fund, the Bank Group led research and consultations with investors and ESG research firms to identify critical gaps in data. Findings from this process demonstrated that ESG data for analyzing sovereign bonds were scattered across various web pages, lacked harmonization, had limited temporal and geographic coverage, and varied in quality. The launch of the Sovereign ESG Data Portal improves the availability, transparency, and usability of ESG data for sovereigns.

The Environment & Sustainability Data Platform discussed in the chapter on Pillar 1 and the Sovereign ESG Data Portal complement each other and will eventually converge toward an integrated platform. Underlying the information provided on the Sovereign ESG Data Portal is the data framework, which incorporates criteria relevant to all 17 Sustainable Development Goals.



The framework organizes data into themes the World Bank considers to be crucial for financial sector representatives to consider when assessing the contribution of investments or policies to sustainable development. The data set will evolve over time. The initial set of indicators is based on the following:

- Survey of World Bank data currently used by investors
- Indicators relevant to the World Bank's own policy analysis
- Other key indicators identified through analysis by World Bank expert teams
- Availability, coverage, timeliness of data

TABLE 5. **World Bank Sovereign ESG Data Framework: Themes and Relevance**

Theme	Relevance
ENVIRONMENT	This category encompasses key themes, which provide a picture of the sustainability of a country's economic performance given its natural resource endowment, management, and supplementation and its risk or resilience to climate change and other natural hazards. This category pays particular attention to the internalization of environmental externalities created by economic activity. This category also accounts for sustainable energy access and food security, crucial factors for stable long-term economic growth.
	Emissions and pollution
	Natural capital endowment and management
	Energy use and security
	Environment/climate risk and resilience
	Food security
SOCIAL	This category encompasses key themes that provide a picture of the sustainability of a country's economic performance given its efficacy in meeting the basic needs of its population and reducing poverty, management of social and equity issues, and investment in human capital and productivity. This category also includes demographic criteria, pertinent to stable long-term economic growth.
	Education and skills
	Employment
	Demography
	Poverty and inequality
	Health and nutrition
	Access to services
GOVERNANCE	This category encompasses key themes that provide a picture of the sustainability of a country's economic performance given its institutional capacity to support long-term stability, growth, and poverty reduction. This category also accounts for the strength of a country's political, financial, and legal systems and capacity to address environmental and social risks.
	Human rights
	Government effectiveness
	Stability and rule of law
	Economic environment
	Gender
	Innovation

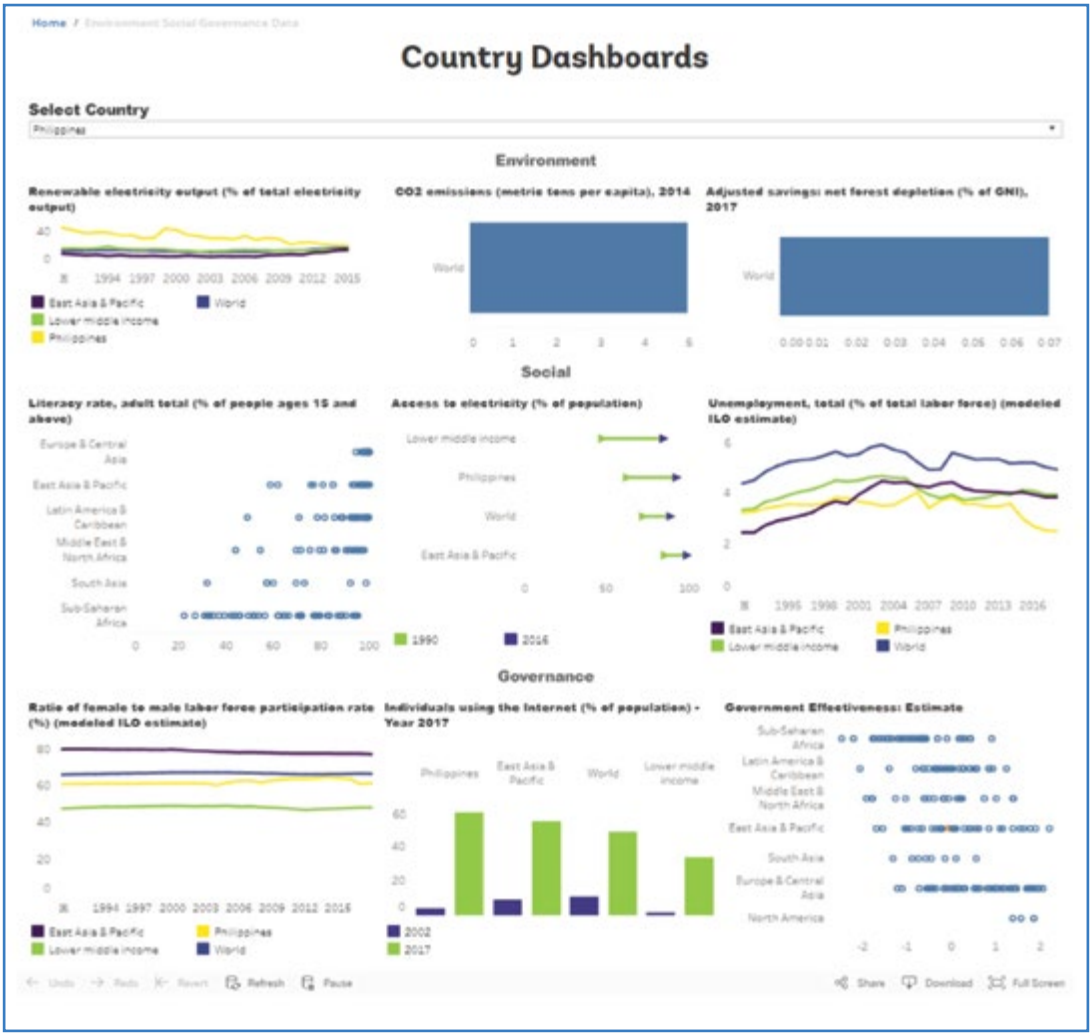
Scoring and Weighting

In the first version of the portal, countries are not scored or ranked; however, there is the possibility for this application in a later version of the portal. The first version provides ESG data to the financial sector and to governments, and lets users perform their own analysis.

Engagement and Promotion

The team gathered feedback from more than 50 key internal and external stakeholders. The portal was launched at the end of October. The ESG framework and portal allow the World Bank to weigh in on factors influencing sustainability and to contribute to the ongoing dynamic discussion among financial sector participants on how best to promote sustainable investing.

FIGURE 7. **Sovereign ESG Data Portal**



Research Agenda: Effects of Sustainability on the Financial Sector – CPIA Sovereign Bond Research

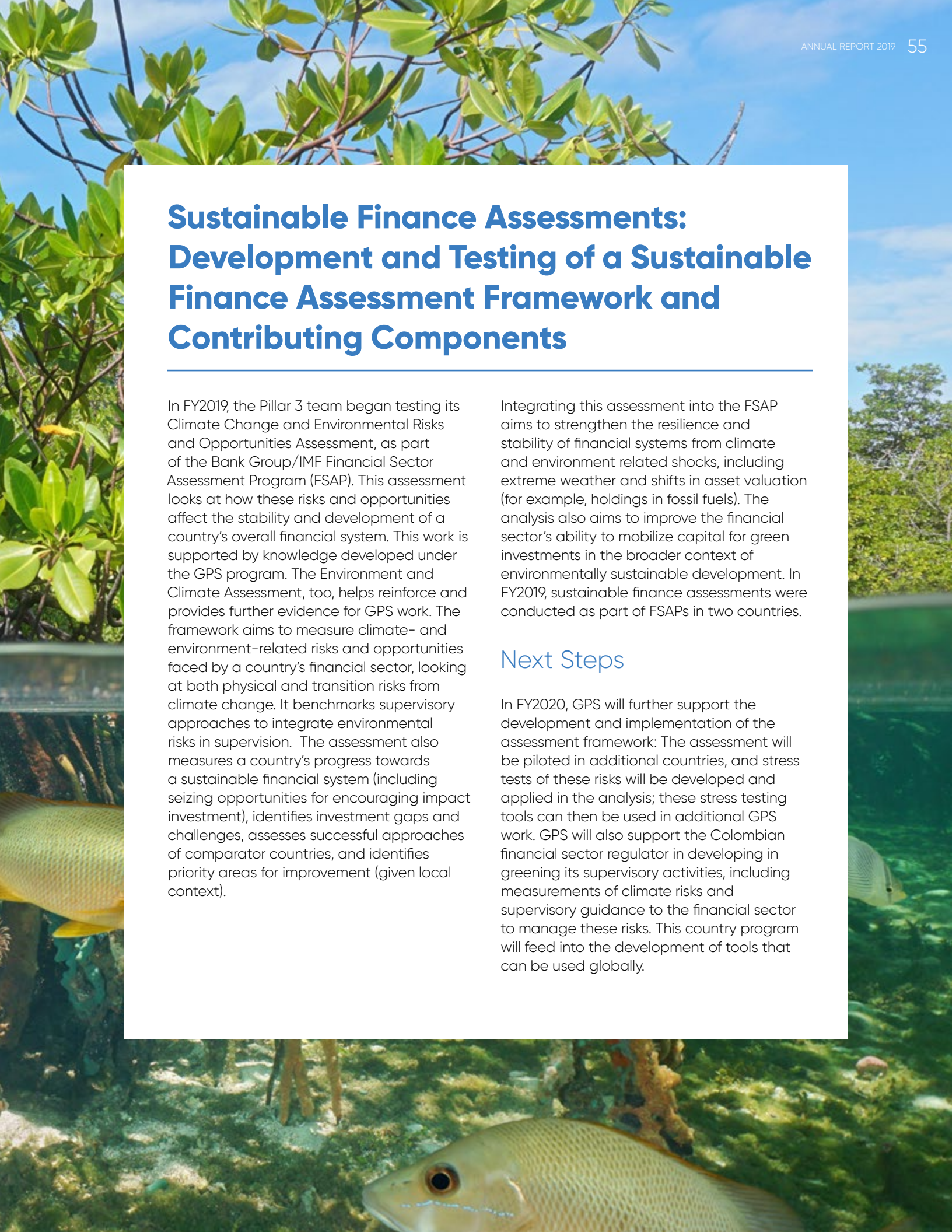
In June 2019, the Country Credit Risk Group published a report titled Governance Improvements and Sovereign Financing Costs in Developing Countries, which examined how making improvements in the quality of economic policies and institutions can help lower governments' financing costs. The MTI GP looked at the correlation between World Bank Country Policy and Institutional Assessment (CPIA) scores and country credit ratings over time. Particularly, the analysis looked at two of the four CPIA components most closely associated with governance: economic management and public sector management and institutions.

The research found that the average yield reduction from a 1-point CPIA indicator gain, resulting in a 1.5 notch rating upgrade, is 174 basis points. This effect is much stronger for countries with an initial rating that is low. There are diminishing marginal returns to credit quality governance improvements. So, steps to improve governance lead to the largest marginal reduction in financing costs in countries with non-investment grade ratings. This work was not financially sponsored by GPS, but is aligned with the GPS agenda and has provided the basis for further research which will be sponsored by GPS.

Next Steps

Building on this research piece, the Country Credit Risk Group will perform similar analysis on correlations between environmental and social factors and sovereign ratings. Additionally, the analysis will look at relationships between E, S, and G factors and bond yields and currency spreads. Two key elements this analysis will focus on are stranded assets and biodiversity. The World Bank has developed very detailed data sets on both criteria. The Pillar 3 team is contributing to work led by the environment team to provide input to the Convention of Biological Diversity 2020.

The FCI and Country Credit Risk teams will prepare a chapter for the 2020 Changing Wealth of Nations publication, analyzing how ESG is priced or ignored by financial markets.



Sustainable Finance Assessments: Development and Testing of a Sustainable Finance Assessment Framework and Contributing Components

In FY2019, the Pillar 3 team began testing its Climate Change and Environmental Risks and Opportunities Assessment, as part of the Bank Group/IMF Financial Sector Assessment Program (FSAP). This assessment looks at how these risks and opportunities affect the stability and development of a country's overall financial system. This work is supported by knowledge developed under the GPS program. The Environment and Climate Assessment, too, helps reinforce and provides further evidence for GPS work. The framework aims to measure climate- and environment-related risks and opportunities faced by a country's financial sector, looking at both physical and transition risks from climate change. It benchmarks supervisory approaches to integrate environmental risks in supervision. The assessment also measures a country's progress towards a sustainable financial system (including seizing opportunities for encouraging impact investment), identifies investment gaps and challenges, assesses successful approaches of comparator countries, and identifies priority areas for improvement (given local context).

Integrating this assessment into the FSAP aims to strengthen the resilience and stability of financial systems from climate and environment related shocks, including extreme weather and shifts in asset valuation (for example, holdings in fossil fuels). The analysis also aims to improve the financial sector's ability to mobilize capital for green investments in the broader context of environmentally sustainable development. In FY2019, sustainable finance assessments were conducted as part of FSAPs in two countries.

Next Steps

In FY2020, GPS will further support the development and implementation of the assessment framework: The assessment will be piloted in additional countries, and stress tests of these risks will be developed and applied in the analysis; these stress testing tools can then be used in additional GPS work. GPS will also support the Colombian financial sector regulator in developing in greening its supervisory activities, including measurements of climate risks and supervisory guidance to the financial sector to manage these risks. This country program will feed into the development of tools that can be used globally.

Capacity Building, Disclosure, and Engagement

Capacity Building and Technical Assistance on the Implementation of Sustainable Finance Measures

SUPPORTING WORK UNDER THE NETWORK FOR GREENING THE FINANCIAL SYSTEM

Since 2018 the World Bank has been an observer to the Network for Greening the Financial System (NGFS), a group of central banks and supervisors from 42 countries that exchange experiences, share best practices, contribute to the development of environment and climate risk management in the financial sector, and mobilize mainstream finance to support the transition toward a sustainable green economy. The NGFS's purpose is to define and promote best practices to be implemented within and outside of its membership and to conduct or commission analytical work on green finance. The NGFS published reports in April 2019 that offer recommendations to better integrate climate-related risks into financial stability surveillance and prudential frameworks.

For FY2020, the World Bank aims to use the NGFS's work and recommendations in capacity-building missions in client countries. This will include the earlier referred project in Colombia. Moreover, we will actively promote the knowledge generated through GPS in the activities of the NGFS, creating a continuous cycle of using their work in client advisory and support and feeding the NGFS with new information from those engagements. The World Bank's experience working with central banks, supervisors, and regulators on the ground in developing countries and emerging markets is of particular interest to the NGFS.

Two particular outcomes will be supported in FY2020:

- GPS will support the newly created NGFS Market Dynamics Working Group. This group will look at how green trends in the financial sector can impact future strategies and product development in the sector, as well as how these trends can affect financial sector regulators. Through GPS, the World Bank will support the group with measuring these trends. This research will also inform the World Bank's ESG data work.

- Writing a handbook for supervisors on integrating climate risk into micro-prudential supervision. The handbook will focus on a set of best practices for how to manage climate risks as a supervisor. The outcomes of this exercise will be used not only in World Bank capacity building but also in strengthening the World Bank sustainable finance diagnostics framework.

Preparing a Model for Impact Reporting Against Environmental Goals

INSTITUTIONAL INVESTORS ESG INTEGRATION AND REPORTING

As part of its partnership with the Japanese Government Pension Investment Fund (GPIF), the World Bank conducted a benchmarking exercise in FY2019 that examined the GPIF ESG report alongside those of other leading global pension funds against a framework based on international standards. The aim was to conduct a stocktake of where leading funds are and to suggest how their reporting practices might evolve in the future. A template was developed to assess ESG reporting by funds in a comparable way. This stocktake then served as the basis for the World Bank to develop a "Best Practice Disclosure Checklist."

THE GRAPHIC BELOW SHOWS KEY ELEMENTS OF THE CHECKLIST.

The team also developed a timeline for asset owners looking to develop and implement a sustainable investment strategy that also identifies tasks which might be conducted or led by consultants or advisers. This timeline will serve as a basis for future advisory work.

Promoting Broader Dissemination, Learning, and Uptake of Green Finance Data, Measures, and Instruments; Engagement Through Dialogue, Conferences, and Workshops

WORKSHOP ON SOVEREIGN INVESTOR ESG DIALOGUE

Investors interviewed for the Bank Group and Japan's GPIF research project in 2018 indicated that although engagement with issuers is an important part of a comprehensive ESG strategy, this is more difficult to implement with sovereign issuers than corporate ones. To help facilitate such dialogue, the World Bank Treasury team hosted an event where several issuers of sovereign standard and green bonds (Columbia, Finland, and the Netherlands) were able to communicate and interact with leading global investors, presenting their strategies and answering questions on how the use of proceeds from their issuances will contribute to their NDCs to the Paris Agreement and the Sustainable Development Goals (SDGs).

PRESENTATION OF GPS WORK AT GLOBAL SUSTAINABLE FINANCE EVENTS

Members of the team presented on the GPS work at multiple sustainable finance events over the course of the fiscal year, including the following:

Event title	Title of panel (if any)
Columbia Business School's Conference on Public Pension and Sovereign Funds	Will Public Pension Funds Make an Impact on Environmental Sustainability?
Closing the Investment Gap Workshop	How the Trillions Are Invested: Investment policy, risk tolerance, and asset allocation by major asset owners and what it means for project development in emerging markets
Chartered Financial Analyst (CFA) ESG Asset Owners Summit	The World Bank: Promoting ESG Across Asset Classes
The Changing Climate for Responsible Investment	

4.

MONITORING AND EVALUATION REPORT

Monitoring and Evaluation Report

The Results Framework (RF) has been improved over the years to reflect the expanding program on natural capital originally set up under WAVES. In an effort to streamline reporting, the two results frameworks of WAVES and WAVES Plus were consolidated in 2017 with further improvements in 2018.

While the full range of WAVES and WAVES Plus indicators are presented in the rest of this chapter, it is important to note that WAVES, which will close at the end of 2019, has already achieved a rate of accomplishment of well over 90% over its original set of indicators (Table 6)

This year marked the setting up of the World Bank's umbrella program on the economics of sustainability, the Global Program on Sustainability (GPS). Since GPS was formally set up as a trust fund in January 2019, the 2019 Annual Report continues to report on the WAVES and WAVES Plus framework to ensure consistency and ensure easy comparability between different years.

A technical note is being drafted to explain the transition to a new GPS framework and will be circulated for comments at the GPS-WAVES Steering committee. The technical note will explain the rationale for introducing new indicators and for improving existing ones The goal is to have a RF broadly consistent with the principles of WAVES Plus RF, thereby making it possible to assess progress being made on WAVES Plus countries – e.g. Zambia and Uganda.

TABLE 6. **Progress Made by 2019 in Meeting the WAVES Targets**

CN Indicator	Baseline	End of Program Goal	Actual 2019	Rate of accom-plishment[a]
Countries supported by the project with at least two environment-related sectors in natural capital accounts in accordance with defined criteria and publicly accessible	8	8	7	88%
Countries supported by the project with at least two natural capital accounting–related policy analyses made publicly accessible	0	5	8	100%
IR Indicator 1.1: Countries supported by the project with Natural Capital Accounts Steering Committee established	0	8	8	100%
IR Indicator 1.2: Skilled staff in relevant government institutions participating in natural capital accounting and related policy analysis (the number of females who participated)	0	10	220	100%
IR Indicator 1.6: Number of key policy documents such as development plans, sectoral policies and strategies, bills, etc., that reference NCA or the accounts	0	N/A	45	100%
IR Indicator 1.7: Countries supported by the project with policy question(s) identified, methodologies chosen, and first results available (number of TTAs)	0	8	7	88%
(Subscribers newsletter)	0	4000	2,800	70%
Direct project beneficiaries (the number of female beneficiaries)	0	160	1,175	100%
IR Indicator 3.2: Global knowledge products on developing ecosystem accounts made publicly accessible	0	3	3	100%
IR Indicator 3.4: Global knowledge products on policy uses of NCA made publicly accessible		10	15	100%
IR Indicator 3.5: Hits on WAVES website (global and country pages)	93,255 in 2015	149,208	150,000	100%
IR indicator 2.1: Regional knowledge events on NCA supported by the project	0	3	4	100%

Note: (a): the rate takes on a value of 100% when the corresponding indicator has achieved, or exceeded, its target

TABLE 7. **Monitoring and Evaluation WAVES Countries**

CN Indicator	Baseline	End of Program Goal	Actual 2018	Actual 2019	Notes 2019
Countries supported by the project with at least two environment-related sectors in natural capital accounts in accordance with defined criteria and publicly accessible[a]	8	8	7	7	Botswana, Colombia, Costa Rica, Guatemala, Indonesia, the Philippines, Rwanda
Countries supported by the project with at least two natural capital accounting–related policy analyses made publicly accessible[a]	0	5	7	7	Botswana, Colombia, Costa Rica, Guatemala, Indonesia, the Philippines, Rwanda
IR Indicator 1.1: Countries supported by the project with Natural Capital Accounts Steering Committee established	0	8	8	8	Botswana, Colombia, Costa Rica, Guatemala, Indonesia, Madagascar, the Philippines, Rwanda
IR Indicator 1.2: Skilled staff in relevant government institutions participating in natural capital accounting and related policy analysis (the number of females who participated)	0	10	200 (49)	220 (58)	Participants in technical trainings
IR Indicator 1.3: Countries supported by the project with first preliminary draft natural capital accounts collected in their second year (of which x have ecosystem accounts)			8 (3)	8(4)	This indicator has been introduced by WAVES Plus; as a result, there is no indication of end-of-program target. Progress for the current reporting period is nevertheless included to ensure consistency with the WAVES Plus Result Framework (RF) table Progress on ecosystem accounts refers to the Philippines, Colombia, and Indonesia. For the 2019 reporting period, Rwanda has also developed ecosystem accounts
IR Indicator 1.4: Countries supported by the project with validation and publication of final natural capital accounts in their third year, and made publicly accessible (of which x have ecosystem accounts)			8 (3)	8(4)	This indicator has been introduced by WAVES Plus; as a result, there is no indication of end-of-program target. Progress for the current reporting period is nevertheless included to ensure consistency with the WAVES Plus (RF) table. Data for the 2019 reporting period also includes Rwanda ecosystem accounts
IR Indicator 1.5: Countries supported by the project with preparation phase finalized, including firm political commitment received, key entry point for policy making/policy questions, and accounts identified			8	8	This indicator has been introduced by WAVES Plus; as a result, there is no indication of end-of-program target. Progress for the current reporting period is nevertheless included to ensure consistency with the WAVES Plus (RF) table
IR Indicator 1.6: Number of key policy documents such as development plans, sectoral policies and strategies, bills, etc., that reference NCA or the accounts	0	N/A	39	45	Indonesia: Low Carbon Development Initiative; Rwanda: IWRM Framework; Guatemala: National Development Plan: Our Guatemala 2032,-The State of the Environment Report, The Strategy for Climate Change,The Environmental Fiscal Policy Strategy
IR Indicator 1.7: Countries supported by the project with policy question(s) identified, methodologies chosen, and first results available (number of TTAs)	0	8	7	7	Botswana, Colombia, Costa Rica, Guatemala, Indonesia, the Philippines, Rwanda
IR Indicator 2.3: Number of countries with targeted technical assistance				NA	Not included in WAVES objectives

TABLE 7. **Monitoring and Evaluation WAVES Countries**

CN Indicator	Baseline	End of Program Goal	Actual 2018	Actual 2019	Notes 2019
(Subscribers newsletter)	0	4000	2.6	2,800	Transitioning to GPS newsletter
Direct project beneficiaries (the number of female beneficiaries)	0	160	1175 (420)	1175 (420)	Conservative estimate using the cumulative amount already reported in 2018 Participants in workshops and stakeholder events. Number of female participants for reporting purposes only
IR Indicator 2.2: Regional knowledge products supported by the project made publicly accessible	0	0	0		Not included in WAVES objectives
IR Indicator 3.1: Global knowledge events on developing ecosystem accounts supported by the project					Not included in WAVES objectives
IR Indicator 3.2: Global knowledge products on developing ecosystem accounts made publicly accessible	0	3	3	3	Activities in FY19 funded by WAVES Plus
IR Indicator 3.3: Global knowledge events on policy uses of NCA supported by the project					Not included in WAVES objectives
IR Indicator 3.4: Global knowledge products on policy uses of NCA made publicly accessible		10	15	15	Activities in FY19 funded by WAVES Plus
IR Indicator 3.5: Hits on WAVES website (global and country pages)	93,255 in 2015	149,208	140000	150,000	End of program goal defined using a target of 20% growth each year starting from 93,250 An additional GPS webpage has been created within the World Bank site
IR indicator 2.1: Regional knowledge events on NCA supported by the project	0	3	5	5	

(a): The 2018 and 2019 results for these indicators have been adjusted to reflect the only partial results achieved in Madagascar. While intermediate or advanced technical reports have been delivered on water, forests, minerals and macro-economic indicators, these have not been turned into final products ready for publication. This reflects challenges related to the political situation, limited capacity in relevant government agencies, and the overall weakness of the statistical system (to exemplify, Madagascar has not had a general census of the population for over 20 years).

TABLE 8. **Monitoring and Evaluation WAVES Plus Countries**

CN Indicator	Baseline	End of Program Goal	Actual 2018	Actual 2019	Notes 2019
Countries supported by the project with at least two environment-related sectors in natural capital accounts in accordance with defined criteria and publicly accessible	0	4	1	2	Zambia; Uganda is also included since it will publish results in late 2019
Countries supported by the project with at least two natural capital accounting–related policy analyses made publicly accessible	0	10	2	3	Nepal, Uganda, Zambia
IR Indicator 1.1: Countries supported by the project with Natural Capital Accounts Steering Committee established	0	4	1	4	Zambia, Uganda, Morocco and Egypt
IR Indicator 1.2: Skilled staff in relevant government institutions participating in natural capital accounting and related policy analysis (the number of females who participated)	0	10	200 (49)	220 (58)	Estimate of participants in technical trainings
IR Indicator 1.3: Countries supported by the project with first preliminary draft natural capital accounts collected in their second year (of which x have ecosystem accounts)	0	4	1	3	Kyrgyz Republic, Uganda, Zambia
IR Indicator 1.4: Countries supported by the project with validation and publication of final natural capital accounts in their third year, and made publicly accessible (of which x have ecosystem accounts)	0	4	0	1	Uganda, although not yet in the third year of the program, will publish results of accounts by late 2019
IR Indicator 1.5: Countries supported by the project with preparation phase finalized, including firm political commitment received, key entry point for policy making/policy questions, and accounts identified	0	4	3	5	Kyrgyz Republic, Mdagascar and Nepal (TTAs), Uganda, Zambia
IR Indicator 1.6: Number of key policy documents such as development plans, sectoral policies and strategies, bills, etc., that reference NCA or the accounts	0	4	2	3	Nepal (TTA), Uganda, Zambia
IR Indicator 1.7: Countries supported by the project with policy question(s) identified, methodologies chosen, and first results available (number of TTAs)	0	10	3	6	Lao PDR, Madagascar, Nepal, WACA programs (TTAs); Uganda, Zambia
IR Indicator 2.3: Number of countries with targeted technical assistance	0	12	6	8	Cambodia, Laos, Madagascar, Myanmar, Nepal, Uzbekistan, Vietnam, WACA regional program

TABLE 8. **Monitoring and Evaluation WAVES Plus Countries**

CN Indicator	Baseline	End of Program Goal	Actual 2018	Actual 2019	Notes 2019
(Subscribers newsletter)	0	4000	2,600	2,800	Transitioning to GPS newsletter
Direct project beneficiaries (the number of female beneficiaries)	0	160	1175 (420)	1175 (420)	Conservative estimate using the cumulative amount already reported in 2018 Estimated participants in workshops and stakeholder events. Number of female participants for reporting purposes only
IR indicator 2.1: Regional knowledge events on NCA supported by the project	0	3	3	4	In late 2019 the program supported a regional training meeting in South Africa in collaboration with UNSD
IR Indicator 2.2: Regional knowledge products supported by the project made publicly accessible	0	3	3	3	
IR Indicator 3.1: Global knowledge events on developing ecosystem accounts supported by the project	0	7	7	8	In addition to the events reported in 2018, the program supported the 2019 edition of the Glen Cove expert forum on ecosystem accounting in collaboration with UNSD
IR Indicator 3.2: Global knowledge products on developing ecosystem accounts made publicly accessible	0	7	3	3	
IR Indicator 3.3: Global knowledge events on policy uses of NCA supported by the project	0	5	2	3	In addition to the events reported earlier, the program supported the third policy forum on NCA in Paris
IR Indicator 3.4: Global knowledge products on policy uses of NCA made publicly accessible	0	5	2	3	In addition to the products reported earlier, the program supported the publication of the proceedings of the third policy forum on NCA held in Paris
IR Indicator 3.5: Hits on WAVES website (global and country pages)	93,255 in 2015	149,208	140,000	150,000	End of program goal defined using a target of 20% growth each year starting from 93,250 An additional GPS webpage within the World Bank site was created

5.

FINANCIAL REPORT

Financial Report

The original WAVES Multi-donor Trust Fund (MDTF) was set up in March 2012 with an initial contribution of approximately US$9.4 million from eight development partners. Through subsequent contributions, a total of US$23.2 million was pledged to WAVES.

In November 2015, the steering committee endorsed WAVES Plus, and the United Kingdom, the Netherlands, and the EU have committed to WAVES Plus since then. A new WAVES Plus MDTF was set up in November 2016. Total pledges to WAVES Plus to date amount to US$10.1 million.

Finally, the GPS Trust Fund, discussed with the donors during the Steering Committee meetings of 2017 and 2018, was set up at the end of 2018, with seed funds pledged by Bundesministerium für Wirtschaftliche Zusammenarbeit (BMZ) in the amount of 2 million Euros.

Table 9 shows the financial status of the WAVES, WAVES Plus and GPS Multi-Donor Trust Fund (MDTF) as of June 30, 2019. Of the total donor pledges for the three trust funds of US$35.6 million, an amount of US$30.3 million has been transferred to the World Bank.

The three trust funds have disbursed or committed US$ 26.5 million, or 88 percent of the total funds transferred to the World Bank tables 11a, 11b and 11c

The WAVES MDTF supports both country-level and global activities, as well as cross-cutting quality assurance and program management activities. Country-specific work is tailored to the requirements of the country partners and includes in-country communications and training workshops, as well as for regional workshops and preliminary country-level engagement. Global work include analytical and data activities applicable to as many countries as possible, as well as knowledge sharing, outreach and communication, as illustrated in other chapters of this report.

The bulk of resources has been utilized to date for country/regional work (some 65 percent of total funds disbursed or committed for the three programs). Global activities have been supported with a share of 27 percent of the total; quality assurance and program management and administration has used less than 8 percent of the total resources.

WAVES Summary

Most of the funds committed or disbursed funds were used for country work amounting to US$ 12.4 Million. For global level work, a total of US$ 5.59 Million were disbursed and committed to support a range of activities: knowledge-sharing events and workshops; developing methodology for ecosystem accounting; global communications; engaging with NCA partners at high-level events; and The Changing Wealth of Nations 2018 report.

WAVES Plus Summary

WAVES Plus committed or disbursed resources have been used for country or regional work in an amount of 2.3 Million; and for global work in an amount of $1.37 Million

The overall structure of this year's financial report is consistent with previous reports, and includes the presentational improvements contained in the 2018 annual report (for example, footnotes to better specify nature of some activities).

TABLE 9: **FINANCIAL SUMMARY (IN US$, AS OF JUNE 30, 2019)**

	WAVES Trustee TF071860	WAVES Plus Trustee TF072708	GPS Trustee TF073257	Total	In %
A. Total donor pledges, per signed Administration Agreement	**23,256,957**	**10,113,330**	**2,273,500**	**35,643,787**	
United Kingdom - DFID	3,747,042	2,540,500		6,287,542	
France - Agence Francaise de Developpement	1,051,046			1,051,046	
Norway - Ministry of Foreign Affairs	3,019,250			3,019,250	
Germany-Deutsche Gesellschaft Fur Internationale Zusammenarbeit (GIZ)	2,255,142			2,255,142	
Netherlands-Minister of Foreign Affairs	2,857,142			2,857,142	
Denmark - Royal Ministry of Foreign Affairs	1,717,482			1,717,482	
EU-Commission of the European Communities	3,113,186	3,072,830		6,186,016	
Japan - Ministry of Finance	2,996,667			2,996,667	
Swiss Federal Department of Economic Affairs, Education and Research	2,500,000			2,500,000	
Netherlands - Minister for Foreign Trade and Development Cooperation		4,500,000		4,500,000	
Germany - Bundesministerium für Wirtschaftliche Zusammenarbeit (BMZ)			2,273,500	2,273,500	
B. Actual funds received from donors	**23,256,957**	**5,928,220**	**1,135,200**	**30,320,377**	**85%**
United Kingdom - DFID	3,747,042	2,540,500		6,287,542	
France - Agence Francaise de Developpement	1,051,046			1,051,046	
Norway - Ministry of Foreign Affairs	3,019,250			3,019,250	
Germany-Deutsche Gesellschaft Fur Internationale Zusammenarbeit (GIZ)	2,255,142			2,255,142	
Netherlands-Minister of Foreign Affairs	2,857,142			2,857,142	
Denmark - Royal Ministry of Foreign Affairs	1,717,482			1,717,482	
EU-Commission of the European Communities	3,113,186	1,137,720		4,250,906	
Japan - Ministry of Finance	2,996,667			2,996,667	
Swiss Federal Department of Economic Affairs, Education and Research	2,500,000			2,500,000	
Netherlands - Minister for Foreign Trade and Development Cooperation		2,250,000		2,250,000	
Germany - Bundesministerium für Wirtschaftliche Zusammenarbeit (BMZ)			1,135,200	1,135,200	
C. Other adjustments	**(244,487)**	**110,832**	**12,057**	**(121,598)**	
Administrative fees to World Bank central units (-)	(465,139)			(465,139)	
Investment income (+)	220,653	110,832	12,057	343,541	
D. Total funds available (B+C)	**23,012,470**	**6,039,052**	**1,147,257**	**30,198,779**	
E. Grants: Allocations	**22,699,607**	**7,974,737**	**100,000**	**30,774,344**	**102%**
WAVES	22,699,607			22,699,607	
WAVES Plus		7,974,737		7,974,737	
GPS			100,000	100,000	
F. Grants: Disbursements & Commitments	**22,505,991**	**3,900,860**	**228,529**	**26,635,381**	**88%**
Funds disbursed	22,068,734	2,817,348	-	24,886,081	
Funds committed to be disbursed - BETFs	437,258	1,083,513	228,529	1,749,300	
Funds committed to be disbursed - RETFs				-	
G. Funds available (Trustee & Grant level)	**865,277**	**2,288,489**	**1,140,643**	**4,294,409**	**14%**
at Grant and Subfund level after disbursements and commitments	553,355	1,427,960	93,387	2,074,702	
at Trustee level after allocation to grants	311,922	860,529	1,047,256	2,219,707	

Source: My Trust Fund database.

Note: DFID = Department for International Development; GIZ = Deutsche Gessellschaft Fur Internationale Zusammenarbeit; BMZ = Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung

TABLE 10: **DONOR PLEDGE AND CONTRIBUTION SUMMARY (AS OF JUNE 30, 2018)**

		Pledges		Contribution made		Outstanding Contribution		
Donor	**Currency**	**Amount in Contribution Currency**	**Amount in US$***	**Paid in Contribution Currency**	**Paid in US$***	**Unpaid in Contribution Currency**	**Unpaid in US$***	**Paid in %**
United Kingdom - DFID	GBP	2,402,424	3,747,042	2,402,424	3,747,042	-	-	100%
France - Agence Francaise de Developpement	EUR	811,556	1,051,046	811,556	1,051,046	-	-	100%
Norway - Ministry of Foreign Affairs	NOK	20,000,000	3,019,250	20,000,000	3,019,250	-	-	100%
Germany-Deutsche Gesellschaft Fur Internationale Zusammenarbeit (GIZ)	EUR	1,787,000	2,255,142	1,787,000	2,255,142	-	-	100%
Netherlands-Minister of Foreign Affairs	USD	2,857,142	2,857,142	2,857,142	2,857,142	-	-	100%
Denmark - Royal Ministry of Foreign Affairs	DKK	10,000,000	1,717,482	10,000,000	1,717,482	-	-	100%
EU-Commission of the European Communities	EUR	2,500,000	3,113,186	2,500,000	3,113,186	-	-	100%
Japan - Ministry of Finance	USD	2,996,667	2,996,667	2,996,667	2,996,667	-	-	100%
Swiss Federal Department of Economic Affairs, Education and Research	USD	2,500,000	2,500,000	2,350,000	2,500,000	-	-	100%
Subtotal WAVES			**23,256,957**		**23,256,957**		**-**	**100%**
United Kingdom - DFID	GBP	2,000,000	2,540,500	2,000,000	2,540,500	-	-	100%
Netherlands - Minister for Foreign Trade and Development Cooperation	USD	4,500,000	4,500,000	2,250,000	2,250,000	2,250,000	2,250,000	50%
EU-Commission of the European Communities	EUR	2,700,000	3,072,830	1,000,000	1,137,720	1,700,00	1,935,110	37%
Subtotal WAVES Plus			**10,113,330**		**5,928,220**		**4,185,110**	**59%**
Germany - Bundesministerium für Wirtschaftliche Zusammenarbeit (BMZ)	EUR	2,000,000	2,273,500	1,000,000	1,135,200	1,000,000	1,138,300	
Subtotal GPS			**2,273,500**		**1,135,200**		**1,138,300**	**50%**
Total WAVES, WAVES Plus & GPS			**35,643,787**		**30,320,377**		**5,323,410**	**85%**

Source: My Trust Fund database.

Note: DFID = Department for International Development; GIZ = Deutsche Gessellschaft Fur Internationale Zusammenarbeit; BMZ = Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung

* Will fluctuate with exchange rate changes.

TABLE 11a: **SUMMARY OF DISBURSEMENTS AND COMMITMENTS (IN US$, AS OF JUNE 30, 2019): WAVES**

Activities	A. Allocation	B. Disbursed	C. Committed	D. Disbursed and Committed	E. Available balance
1. Country work (a)	**12,574,636**	**12,042,666**	**374,025**	**12,416,691**	**516,735**
WAVES- Botswana	1,837,394	1,798,107	-	1,793,449	-
WAVES- Colombia	1,820,838	1,781,905	-	1,777,288	-
WAVES- Costa Rica	661,131	646,995	-	645,319	-
WAVES- Indonesia	1,719,340	1,558,086	-	1,554,049	260,915
ID WAVES 2.0 - Indonesia	-	-	358,790	388,720	-
WAVES- Madagascar	817,176	799,703	-	797,631	-
WAVES- Philippines	2,624,859	2,568,735	-	2,562,079	-
WAVES- Rwanda	2,172,625	2,035,216	15,236	2,046,449	155,941
WAVES- Guatemala	921,273	853,920	-	851,707	99,878
2. Regional work	**750,000**	**749,700**	**-**	**749,700**	**300**
WAVES-Regional Workshops	750,000	749,700	-	749,700	300
3. Global work	**5,563,418**	**5,531,207**	**63,232**	**5,594,440**	**(31,022)**
WAVES-Annual Partnership Forums	1,131,682	1,102,237	63,232	1,165,469	(33,787)
WAVES-Changing Wealth of Nations 2018	149,272	149,272	-	149,272	-
WAVES-Engagement with the wider NCA community	909,451	909,118	-	909,118	333
WAVES-Global Communication Strategy	1,319,963	1,319,963	-	1,319,963	-
WAVES-Methodology Development & Policy Application for Ecosystem accounting (b)	2,053,049	2,050,617	-	2,050,617	2,432
4. Cross cutting work	**1,920,739**	**1,920,739**	**-**	**1,920,739**	**-**
WAVES inception activities (c)	1,920,739	1,920,739	-	1,920,739	-
5. Other	**1,890,814**	**1,824,422**	**-**	**1,824,422**	**66,392**
Waves Program Management and Administration	1,890,814	1,824,422	-	1,824,422	66,392
Grand Total	**22,699,607**	**22,068,734**	**437,258**	**22,505,991**	**552,404**
Funds available in the Trustee and Sub-fund level but not yet allocated					312,873
Total funds available in the Trustee, Sub-fund and Grant level					865,277

Notes

(a): Including scoping activities carried out during identification stages; and communication work carried out at the country level

(b): Including pilot application to selected countries, e.g. Philippines

(c): This activity was labeled in previous annual reports as "WAVES Global Knowledge Sharing". It includes activities carried out in the inception phase of the program (up to 2014), before the internal reporting system was set up to track separately country, regional and global activities. It therefore comprises activities belonging to each of these groups

TABLE 11b: **SUMMARY OF DISBURSEMENTS AND COMMITMENTS (IN US$, AS OF JUNE 30, 2019): WAVES Plus**

Activities	A. Allocation	B. Disbursed	C. Committed	D. Disbursed and Committed	E. Available balance
1. Country work	**4,923,737**	**1,299,349**	**777,212**	**2,076,561**	**1,052,754**
1.1 CIC	**3,050,000**	**814,488**	**163,961**	**978,449**	**477,129**
Uganda Natural Capital Accounting Support	700,000	156,438	37,684	194,122	59,022
WAVES - Egypt	700,000	0	2,434	2,434	0
WAVES Morocco	700,000	13,259	40,783	54,042	195,958
WAVES Plus Kyrgyz Republic	350,000	64,202	70,032	134,234	215,766
WAVES Plus Zambia	600,000	580,589	13,028	593,616	6,384
1.2 TTA	**1,483,737**	**304,756**	**613,251**	**918,007**	**565,730**
Enhancing Capacity for integrating ecosystem accounting in landscape planning in Cambodia	110,500	15,355	95,120	110,475	25
WAVES TTA Madagascar: Assessing Ecosystem Services at Landscape and National Levels	250,000	0	188,609	188,609	61,391
Myanmar WAVES TTA: Forest Contribution to Resilient Coastal Economies in Myanmar	170,000	16,849	0	16,849	153,151
Uzbekistan {Central Asia: Climate and Environment (CLIENT) Program)	250,000	3,243	161,994	165,237	84,763
Vietnam: Assessing the contribution of coastal assets to climate resilience	175,000	5,492	130,665	136,157	38,843
WAVES – Nepal	250,000	69,500	23,349	92,849	157,151
WAVES Plus - Lao PDR	125,000	41,079	13,514	54,593	70,407
WAVES Plus - Nepal	68,837	68,837	0	68,837	0
WAVES Plus TTA Uruguay	24,602	24,602	0	24,602	0
WAVES Plus TTA WACA	59,798	59,798	0	59,798	0
1.3 Scoping	**390,000**	**180,104**	**0**	**180,104**	**9,896**
WAVES Plus: Preliminary Country Engagement	390,000	180,104	0	180,104	9,896
2. Regional work	**470,000**	**171,280**	**47,098**	**218,378**	**51,622**
WAVES, Economics and WACA	300,000	2,106	47,098	49,204	50,796
WAVES Plus Regional Work	170,000	169,174	0	169,174	826
3. Global Work	**1,826,000**	**1,138,769**	**237,134**	**1,375,903**	**257,041**
Changing wealth of nations (CWON) 2020	666,000	26,479	56,400	82,879	242,121
Global communication	280,000	261,342	20,390	281,732	-1,732
Road to Kunming (RTK)	0	0	147,944	147,944	0
WAVES Plus Policy uses of NCA	480,000	473,162	0	473,162	6,838
WAVES Plus: Annual Partnership Forums	250,000	227,846	12,400	240,246	9,754
WAVES Plus: Methodology and Global Engagement	150,000	149,940	0	149,940	60
4. Other	**755,000**	**207,951**	**22,068**	**230,019**	**39,981**
Waves Program Management and Administration	755,000	207,951	22,068	230,019	39,981
Grand Total	**7,974,737**	**2,817,348**	**1,083,513**	**3,900,860**	**1,401,399**
Funds available in the Trustee and Sub-fund level but not yet allocated					887,089
Total funds available in the Trustee, Sub-fund and Grant level					2,288,488

TABLE 11c: **SUMMARY OF DISBURSEMENTS AND COMMITMENTS (IN US$, AS OF JUNE 30, 2019): GPS**

Activities	A. Allocation	B. Disbursed	C. Committed	D. Disbursed and Committed	E. Available balance
Pillar 1. Global work: Information					
GPS Road to Kunming	600,000	-	221,917	221,917	-
Subtotal Pillar 1. Global work: Information	**600,000**	**-**	**221,917**	**221,917**	**-**
Pillar 2. Country-level work					
See footnote (a)	-	-	-	-	-
Subtotal Pillar 2. Country-level work	**-**	**-**	**-**	**-**	**-**
Pillar 3. Sustainable Finance					
Long-term sustainable finance	100,000	-	6,613	6,613	93,387
Subtotal Pillar 3. Sustainable Finance activities	**100,000**	**-**	**6,613**	**6,613**	**93,387**
GPS Program Management and Administration	-	-	-	-	-
Total	**700,000**	**-**	**228,529**	**228,529**	**93,387**
Funds available in the Trustee and Sub-fund level but not yet allocated					1,047,256
Total funds available in the Trustee, Sub-fund and Grant level					1,140,643

Notes

(a): GPS will co-finance Morocco and Egypt programs initiated with WAVES Plus

TABLE 12: **DISBURSEMENTS BY EXPENSE CATEGORY (IN US$, AS OF JUNE 30, 2019)**

	World Bank 12-month fiscal year (July-June)							
	FY19	FY18	FY17	FY16	FY15	Cumulative to FY14	Total	%
WAVES								
Technical work (a)								
Staff Costs	369,137	846,625	1,054,576	1,638,425	1,293,613	2,509,515	7,711,890	35%
Consultant Fees	766,815	655,116	1,410,922	2,326,670	2,107,427	1,828,000	9,094,950	41%
Travel expenses	145,253	133,976	357,680	664,208	761,179	1,130,567	3,192,862	14%
Media Workshop	89,249	51,879	110,734	178,055	165,317	258,734	853,968	4%
Contractual Services	7,320	14,709	146,981	45,518	37,904	54,519	306,952	1%
Disbursements to Grantee (b)	-	(23,637)	403,581	107,439	188,952	-	676,335	3%
Other (c)	3,681	9,832	49,257	67,280	57,840	43,887	231,777	1%
Subtotal WAVES	**1,381,455**	**1,688,500**	**3,533,731**	**5,027,595**	**4,612,232**	**5,825,221**	**22,068,734**	**100%**
WAVES Plus								
Staff Costs	839,815	312,336	307,500	-	-	-	1,459,651	52%
Consultant Fees	383,729	124,746	107,369	-	-	-	615,844	22%
Travel expenses	260,757	133,994	150,255	-	-	-	545,007	19%
Media Workshop	88,805	17,827	62,407	-	-	-	169,038	6%
Contractual Services	16,077	3,600	335	-	-	-	20,012	1%
Other (c)	2,300	4,041	1,455	-	-	-	7,796	0%
Subtotal WAVES Plus	**1,591,482**	**596,545**	**629,321**	**-**	**-**	**-**	**2,817,348**	**100%**
Total WAVES, WAVES Plus	**2,972,937**	**2,285,045**	**4,163,052**	**5,027,595**	**4,612,232**	**5,825,221**	**24,886,081**	

Source: My Trust Fund database

Notes
(a): including activities of program design, analysis, quality assurance, etc; carried out by staff in both headquarter and country offices
(b): Resource used for Recipient Executed Trust fund (RETF)
(c): Translations, proofreading, transcriptions, courier/freight service, phone calls, printing, interpretation services, video conferencing, airfare rebate, and equipment costs.

Annual Report 2019

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