



**WEALTH ACCOUNTING AND VALUATION OF ECOSYSTEM SERVICES (WAVES)**



# **COLOMBIA COUNTRY REPORT 2014**

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National Administrative Department of Statistics (DANE)  
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## **1. The WAVES Partnership**

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

This global partnership brings together a broad coalition of UN agencies, governments, international institutes, non-governmental organizations and academics to implement economic-environmental accounting where there are internationally agreed standards, and develop standard approaches for ecosystem service accounts. The following are the initiative's specific objectives:

- a. Help countries adopt and implement accounts that are relevant for policies and compile a body of experience.
- b. Develop internationally agreed guidelines and approaches to develop ecosystem accounts.
- c. Establish a global platform for training and knowledge sharing.
- d. Build international consensus and partnerships around natural capital accounting.
- e. Assist countries in implementing environmental accounts, using international standards.
- f. Incorporate the results of natural capital accounting into decision-making (public policies and development planning).
- g. Spread natural capital accounting through partnerships among countries.

Beyond simply generating technical skills in accounting and valuation of ecosystem services, WAVES seeks to generate changes in institutional visions. As such, the initiative should be implemented through a participative process of mutual learning among donors, implementing countries and technical support agencies. It is essential that countries share their experiences and support other countries that are beginning the process.

As of 2014, there has been a great deal of progress in the implementation of WAVES, and country-led WAVES initiatives are being implemented in Costa Rica, Colombia, Botswana, Madagascar and Philippines. The level of confidence in the success of WAVES has increased.

## **2. Colombia WAVES Initiative**

### **Background**

Despite its apparent natural wealth, Colombia does not occupy a prominent position internationally in terms of overall wealth. According to the World Bank (2011), in 2005 Colombia's per capita wealth was US\$54,000, compared to the worldwide average of US\$115,000, and the Latin American average of US\$79,000. However, when comparing natural capital as a proportion of overall wealth, Colombia has a higher-than-average indicator, with 13 percent compared to 6 percent globally, and 15 percent in Latin America. As a consequence, Colombia's natural capital represents a significant proportion of overall per capita wealth, and therefore its valuation and proper management have become priorities for the country.

Colombia's "2010-2014 Development Plan, Prosperity For All" established the importance of conservation, protection and sustainable use of natural resources for economic growth, development and poverty reduction. According to the Plan, "...there is broad recognition of the direct relationship

between environmental deterioration, increased poverty and its disproportionate burden for the most vulnerable groups in society." It is estimated that environmental degradation in Colombia represents losses equivalent to 3.7 percent of gross domestic product (GDP), a figure that includes the costs associated with urban and indoor air pollution, insufficient supply of water, sanitation and hygiene services and soil disasters and degradation, all of which are associated with higher rates of morbidity and mortality, especially among the poorest persons (World Bank, 2007).

Colombia has an Environmental Satellite Account (*Cuenta Satélite Ambiental*, or CSA) for many years. Its main objective is to systematically measure for each accounting period, in physical and monetary units, the variation in the stock of environmental assets as well as the interactions between the environment and the economy and within the economy. At the same time, and consistently with the National Accounts System, the CSA measures efforts made by different economic sectors to conserve, mitigate or protect the environment.

In Colombia's conventional economic analysis, national accounting has been widely used as a tool for decision-making. However, national accounting does not reflect the fact that economic activity—the level of production of goods and services—does not depend solely on what occurs in the economic sphere, but also depends on the resources provided by the biosphere. If the natural capital consumed is not replaced or substituted (or its services are substituted), product growth rates reflected in national accounting are barely noticeable; in other words, they cannot be maintained indefinitely. This generates an unchecked process of natural capital depreciation that jeopardizes the sustainability of consumption.

In effect, the information provided by national accounts becomes unreliable in at least two aspects. First, national accounts do not provide any information about the actual well-being that society derives from the production of goods and services it obtains from its natural resources. Second, they don't indicate whether the consumption level reached can be maintained in the future.

Therefore, it is important to build environmental accounts that shed light on the status and evolution of natural resources. In other words, information is needed on the initial stock of natural resources, the input flows and the uses made of them such that society and decision-makers can predict how they will evolve and assign their importance in the economic sphere. The focus is on understanding natural resources as part of a country's natural capital that can depreciate, contributing to the weakening of the future growth potential for the economy. In this sense, the purpose of environmental accounts is to reduce the asymmetry between the treatment given to physical capital and natural capital in national accounts systems, incorporating not only the value of natural capital depreciation but also correctly assigning the income to production factors that generates it and estimating the flow of income associated with natural resources not traded on markets.

Colombia was one of the first five countries that showed interest in joining the WAVES Partnership. Implementation in Colombia began in 2011 and has been aimed at strengthening the valuation of the country's natural capital and contributing to the design of policies aimed at achieving a harmonious relationship between the environment and the economy. Findings during the diagnostic phase confirmed that rather than focusing on the technical development of environmental accounts, in which the country was relatively strong, WAVES support was more useful in closing the gaps between the production of environmental accounts and their use for priority decision-making processes. The Colombia WAVES initiative's Phase 1, therefore, has centered on the institutional arrangements necessary to ensure that its advances would be institutionally internalized.

## Institutional Arrangements

The implementation process for the Colombia WAVES initiative has been led by the Steering Committee (SC) and the Technical Committee (TC) set up in 2012. Both committees are composed by public officials of different levels from all the institutions involved in the environmental accounts process as producers and/or as users: the National Planning Department (*Departamento Nacional de Planeación*, DNP), the National Department of Statistics (*Departamento Administrativo Nacional de Estadística*, DANE), the Ministry of the Environment and Sustainable Development (*Ministerio de Ambiente y Desarrollo Sostenible*, MADS), the Institute of Hydrology, Meteorology and Environmental Studies (*Instituto de Hidrología, Meteorología y Estudios Ambientales*, IDEAM), and the Office of the Comptroller General of the Republic (*Contraloría General de la República*, CGR). See Table 1 for the member of the SC and TC. More information on the roles of all the institutions is provided in Annex 1.

**Table 1. Members of the Steering and Technical Committees**

Institution	Steering Committee	Technical Committee
DNP	Department of Sustainable Environmental Development	Delegate of biodiversity and ecosystem services valuation of the Department of Sustainable Environmental Development
MADS	Viceminister or his delegate	Delegate of Forests, Biodiversity and Ecosystem Services Office Delegate of Water Resources Office Delegate of Sustainable Green Business Office
DANE	Technical Director of Synthesis and National Accounts Office or his delegate	Delegate of Methodology and Statistical Production Office Delegate of Synthesis and National Accounts Office
IDEAM	Ecosystems and Environmental Information Director or his delegate	Delegate of Environmental Studies Office Delegate of Hydrology Office Delegate of Ecosystems and Environmental Information
CGR	Environmental Sector Comptroller or his delegate	Delegate of Environmental Sector Comptroller Office

A Memorandum of Understanding has been agreed between the participant institutions as a formal instrument for Colombia WAVES implementation. Among other responsibilities, the SC is the body that approves, recommends and defines guidelines and approaches to the initiative's work; it defines and guides policy priorities, and reviews and approves the policy note, work plan and their updates.

The TC's roles in turn are revolved around the development and monitoring of the work plan and policy note, in order to implement decisions defined by the SC. This committee also proposes strategic changes

and decisions to the SC, approves terms of reference for the implementation of the agreed work plan, and monitors and reports on initiative progress. The TC must always reflect on the successful completion of the initiative's goal: the use of environmental accounting as a tool for decision-making processes. As such, it must ensure the internalization of the tools developed under Colombia WAVES initiative support, and it must identify institutional and financial sources to scale-up the initiative in the future. The TC maintains active communication and coordination, and suggests the formation of advisory groups in order to attend specific technical matters.

### **Preparatory Phase 1: 2011-June 2014**

This preparation phase, called Phase 1, started in 2011 and will end in June 2014. Essentially, this phase has consisted of the configuring of the WAVES Initiative, including the articulation scheme of the entities involved (Figure 1).

Key results of Phase 1 can be summarized as follows: (i) the establishment of the SC and TC, as shown in Table 1; (ii) the definition of the competencies and roles of the stakeholders, as shown in Annex 1; and (iii) the definition of main goals for the implementation stage (policy questions and work plan, as detailed in Annex 2). During this phase, various meetings were held, as listed in Annex 3.

The following are two key lessons learned during Phase 1 that will be of great use to the initiative's next steps and are also likely to be useful to other countries:

- a. During the initial phase, a dedicated Coordinator is needed to meet the initiative goals and institutional coordination requirements. Recent developments under the Colombia WAVES Initiative have largely been the result of having established a position of National WAVES Coordinator.
- b. Rather than devoting a lot of efforts in formalizing institutional arrangements during the initial phase of the Initiative, which in the case of Colombia took more than one year, efforts should be directed to show preliminary results and the initiative's value-added. This will provide incentives to the relevant institutions to participate, contribute and collaborate, speeding implementation.

### **3. Priority Policy Areas and Units of Analysis**

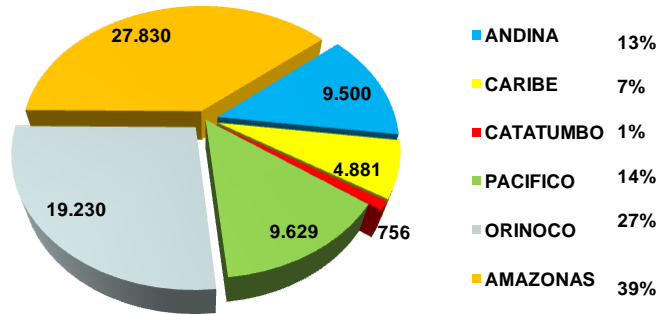
From the beginning of the initiative's implementation, both the SC and TC agreed on the main priority areas as the backbones for all environmental services in Colombia: Water and Forests. In addition, discussions regarding the most appropriate sectorial or geographical unit of analysis for the pilot programs resulted in the choice of key micro-watersheds given their relevance to both national-level policies and to local level management issues. In a highly decentralized environmental institutional framework, producing information relevant to both is of great importance. Discussions leading to these key decisions are detailed below.

### **4. Efficient management of water resources**

Colombia is an exceptional country in terms of its availability of water. According to the 2011 National Water Study prepared by IDEAM, Colombia has annual water resources of approximately 2,265 km<sup>3</sup> and a flow volume of 71,800 m<sup>3</sup>/second. While at the beginning of the 20<sup>th</sup> century Colombia ranked 24th among 203 countries in the world in terms of per capita water availability, at the end of the century

Colombia was ranked 4th, which according to IDEAM suggests that there have been significant changes in and pressures on the resource, reducing the quality and quantity of water. Thus, there is recognition that population increase, related to the use of water resource in household, industrial and agricultural activities, particularly in the Andean region that is home to close to 60 percent of the country's population and 70 percent of its economic activity, explains the deterioration in water supply and quality indicators. According to IDEAM, the Andean water system has been altered by the transport of sediments and toxic substances. In effect, the agricultural, household and industrial sectors in the Andean zone generate more than 9,000 tons of organic material that contaminate surface waters. The following figure shows water distribution by region.

**Figure 1. Distribution of Flow Volumes (m<sup>3</sup>/sec) by Hydrographic Areas**

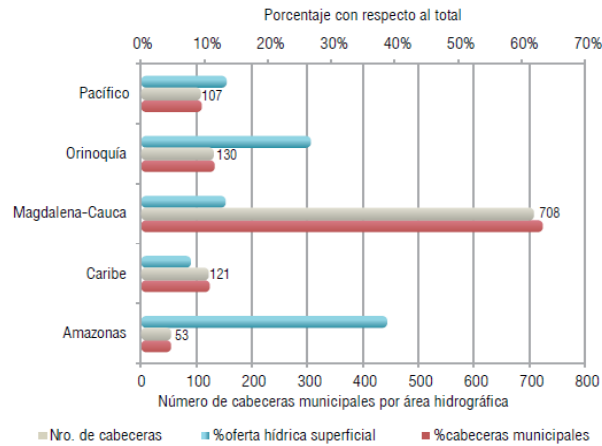


Source: IDEAM

Another important indicator of the water availability is the water yield or runoff, which for Colombia is 63 liters per second per kilometer square (l/sec/km<sup>2</sup>), six times higher than the global average (10 l/sec/km<sup>2</sup>) and three times higher than the Latin America region's average (21 l/sec/km<sup>2</sup>). It is worth mentioning that the Andean region of Colombia, where there is greater pressure from population and economic activities, is not exactly the region with the highest water yield, which leads to the need for significant water management to guarantee supply over time.

Figure 2 shows the distribution of the water supply in relation to the number and percent of municipal government seats by hydrographic area, corresponding to the Magdalena-Cauca hydrographic area in the Andean region. There is no doubt that there is a high concentration of population and therefore household and economic activities in this area in relation, for example, to the Amazon region, which has the largest water supply and the smallest concentration of municipal seats.

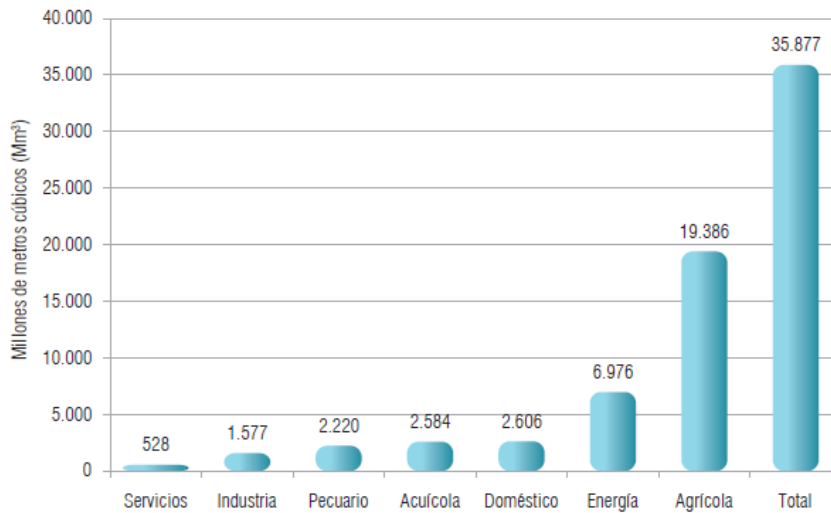
**Figure 2. Distribution of Water Supply and Municipal Seats by Hydrographic area**



Source: IDEAM

Likewise, Figure 3 shows how demand for water resources is distributed among the different economic activities. The agricultural sector and energy generation represent 54 percent and 20 percent, respectively, followed by household consumption, which represents just 7 percent.

**Figure 3. Distribution of Water Demand by Economic Activity**



Source: IDEAM

Conservation of forests and vegetation cover

Colombia's land area covers 114 million hectares, of which 61.2 million are covered by natural forests (IDEAM, 2010), and these are home to a large proportion of the country's megadiversity, which represents 10 percent of the world's biodiversity. As a result, Colombia has been recognized as one of the countries with the greatest biodiversity on the planet. In addition, the country ranks 7th in the world in terms of area covered by tropical forests (FAO, 2008), with 6.42 percent of the total supply for tropical South America and 1.5 percent of all forests on the planet. It ranks 2nd after Brazil in terms of



the number of plant species (World Resources Institute, 1997) and ranks 7th in the world in terms of the amount of "frontier forests" (FAO, 2005).

Table 2 shows the distribution of the territory by type of forest. It shows that 88 percent of the total forest area is natural forest, while planted forest represents just 0.23 percent. In addition, when considering only the continental land area, 53 percent is covered by natural forests. This is an indication of the importance of this resource for the country in terms both of timber products and non-timber services, in particular the regulation of flow volumes, habitat for biodiversity and carbon fixation.

Despite Colombia's forest wealth, the country has not avoided intense deforestation processes associated with the culture of colonization for agricultural and livestock-raising expansion. According to the Agustín Codazzi Geographic Institute (Instituto Geográfico Agustín Codazzi, or IGAC), from 1987 to 2002, 3.3 million hectares of natural forest were lost. Today, these lands are largely used for agriculture and livestock, and in many cases consist of fragmented forest. IDEAM (2010) also evaluated the situation in a similar time period, and found that the amount of forest loss between 1986 and 2001 was 1,289,649 hectares, 33 percent of the percent of forest loss found by the IGAC. It then adds that from 2002 to 2007, more than 2 million hectares were lost, primarily in the Amazon region.

**Table 2. Forest Area and Proportion, by Type of Forest, 2007**

Type of Forest	Area (hectares)	Proportion of Total Forest Area ( percent)	Proportion of Land Area ( percent)
Natural Forests	61,246,659	88.05	53.64
Secondary Vegetation	8,148,154	11.71	7.14
Planted Forests	161,161	0.23	0.14
<b>Total Forests</b>	<b>69,555,974</b>	<b>100.00</b>	<b>60.92</b>
Other Vegetation Cover	-----	-----	39.08
<b>Total</b>	<b>114,174,800</b>		<b>100.00</b>

Source: IDEAM, 2010. Report on the status of the environment and renewable natural resources.

Indiscriminate deforestation has been a key reason why Colombia now faces a situation of conflicting land uses. In 2005, according to figures from the Statistical Yearbook of the Ministry of Agriculture, while the potential for agricultural use was 12.6 percent of the territory, the actual use was 3.9 percent. In the case of forests, while 68.6 percent of the country's area should have vegetation cover, actual forest use is 57 percent, including natural forests. The portion of national territory with potential for grazing and livestock is 19.2 percent, but in 2005 more than 40 percent of the territory was used for this purpose (Ministry of Agriculture, 2005).

Water resources are directly affected by the management of vegetation cover, even more so in a country with heavy rainfall such as Colombia, where average rainfall is 2,500 mm per year, and with mountainous, rugged land that represents approximately 45 percent of its continental territory. According to the Ministry of Agriculture, the agro-ecological maps of the Agustín Codazzi Geographic Institute (IGAC) show that Colombia has a reforestation potential of 18 million hectares with significant comparative advantages in terms of rotation of several species used for timber, without taking into consideration the advantages of non-timber products that account for all of the environmental services

produced by forests. As indicated above, vegetation cover contributes to one of the most important environmental services, which is the regulation of flow volumes that in turn improve the water supply, particularly in mountainous areas such as the Andean zone.

Given the current state of the forests and the evolution of vegetation cover, it is necessary to develop strategies to conserve them. According to data from the Colombia ecosystems map for 2002, 33.7 percent of the natural cover in the country's biomass had already been transformed (IDEAM, 2010). For this reason, the Government has committed to the REDD mechanism and has adopted it as one of the strategies of the Development Plan to manage the loss of biodiversity and its ecosystem services. Toward this end, the Plan aims to: (i) formulate the national REDD strategy with co-benefits, enabling the economic development of communities and ethnic groups through access to the global carbon market; (ii) stimulate the implementation of the inter-sector agreement on legal timber; (iii) make progress toward land use planning of 1 million hectares of natural forest; (iv) formulate and develop the social co-responsibility strategy to combat forest fires; and (v) define a policy for environmental management and land use planning of the Colombian Amazon.

### Watersheds as units of analysis

Since enactment of Colombia's 1991 Constitution, there has been an effort to implement land use planning to ensure that economic activities are compatible with the base of renewable natural resources, particularly water resources, and improve the quality of life of the country's inhabitants. The general framework for land use planning has been the decentralization process that grants autonomy to territorial entities for their development and transformation with a perspective of sustainability. However, more than 20 years after the 1991 Constitution went into effect, the country has not yet achieved true land use planning that improves utilization and leads to sustainable use of natural resources.

The WAVES Initiative in Colombia can contribute substantially to land use planning by developing water and forest accounts in watersheds, given that the country through Decree 1729 of 2002 has adopted the watershed as the basic geographic planning unit. The enactment of this decree is aimed at linking the Watershed Use and Management Plans (*Planes de Ordenamiento y Manejo de las Cuencas de Abastecimiento*, or POMCA) with the new land use planning and development model so it becomes the main instrument for aligning the planning and environmental management system. These plans combine competencies and resources for watershed conservation. In addition, the POMCAs should include the design, agreement and execution of the monitoring, evaluation and oversight phases and the co-responsibility of authorities, organisms, territorial entities, responsible third parties and the community for watershed land use programs. In addition, one of the most important challenges of the POMCAs is achieving financial viability and institutional sustainability.

One of the critical aspects for development of the POMCAs has been the precariousness of environmental information systems and the scarce availability of scientific and technical knowledge about the environmental situation of the watersheds, particularly regarding water supply and demand and the evolution of vegetation covers. In this sense, creating environmental accounts for watersheds will undoubtedly generate key inputs for decision-making process by environmental authorities in terms of managing watersheds and related forest ecosystems, to achieve more efficient and sustainable allocation of them.

### Specific policy questions

Given the above outlook, the SC and the TC have decided on the following policy questions:

***How can water resources be managed for different human activities that require them, such that the supply and quality can be guaranteed over time?*** Key issues for water resource management in watersheds arise from this question, and the response will be used as an input to address problems such as:

- **How can we achieve greater coverage and quality of departmental water plans?** Colombia has been developing a water resources management strategy through departmental or regional water plans, as regulated by National Planning Department (CONPES) Document 3463 of 2007. WAVES will provide elements for both regional governments and communities to obtain information and knowledge about the quantity of water resources to supply their aqueducts and ensure more efficient use of those resources.
- **How can we assign water concessions in a more efficient, regulated and appropriate way?** As the accounts for water resource assets and flows volumes by human activity are developed, the environmental authorities will have more elements to better define concessions. Currently, there is evidence that some water concessions grant amounts greater than the usage levels, which means that the state is transferring property rights to users who do not need the quantities being granted through concessions and this could be creating deficits for others.
- **Who are the stakeholders and what are the uses that should be taken into account by the institutional framework for water management?** Overcoming the challenge represented by the five growth drivers defined in the Development Plan requires an institutional framework that is agile, modern, transparent and decentralized, based on the best technical and scientific information for decision-making, linkages between the environmental information system and systems belonging to other public and private institutions, high technical capacity and appropriate exercise of environmental authority. Greater use of information and communication technology is needed.

***How has Colombia's vegetation cover been transformed and what is its current situation?*** Answering this question will provide instruments to environmental and economic authorities to regulate agriculture and livestock expansion processes, generate incentives for reforestation, control illegal cutting of the forest, assign a value to natural capital and strengthen the national biodiversity policy, among other benefits. Concretely, WAVES, by constructing the forest account for each watershed, contributes to answering the following questions such as the following:

- **What are the causes of the transformation of vegetation cover in Colombia?** Construction of the forest account and identification of services provided by this ecosystem can help us understand why the country's vegetation cover has constantly changed (in many cases toward deforestation processes) and design mechanisms and incentives to prevent these transformations and protect the biodiversity of the forest habitat, preserving the flow of services that they provide.
- **How can the impact of illegal deforestation be prevented and mitigated?** There is no doubt that quantifying, in physical and monetary units, the assets and flows of timber and non-timber goods from forests can help reduce uncertainty about data on supply and demand of these goods and identify illegal cutting. The construction of a supply-utilization matrix for each watershed is a key input.

- **How do forest ecosystems and their services affect the well-being of communities?** Because a significant part of the national territory (approximately 50 percent) is covered by natural forest, including protected areas and natural parks, there are many communities living in those areas that derive their sustenance from the forest or use it for fuel (firewood). Valuing forests contributes to more rational and sustainable use by the communities who benefit from its services
- **How can we ensure and maintain the flow of ecosystem services from forests?**

The TC led a rigorous analytical exercise to choose the pilot watersheds that would be covered under the WAVES Initiative. The selection was done crossing several key variables, including the possibilities of working with regional authorities, the quality and availability of information as well as the examples of key conflicts of use. As a result, the watersheds of Tota Lake, Chinchiná River and Suárez River were chosen.

## 5. Ongoing Efforts and Next Steps

According to the SC decision of October 2013, Phase I will conclude in June 2014, having succeeded in the completion of its main goals, including the construction of preliminary accounts looking for demonstrative results to encourage actors to improve their decision making processes based on environmental accounting. Phase II will look for more detailed results and consolidation of environmental accounts as key instruments of policy making at national level, and probably also at regional and local level.

In March 2013, a general work plan was updated based on the lessons learned from the arduous process of establishing a stable institutional arrangement that is likely to continue with or without WAVES initiative support. The three key components in that work plan are: (i) continued advances on the technical aspects of environmental accounting; (ii) influence on public policy; and (iii) institutional management. As shown in Table 3, each component has an objective, a public policy priority, guiding questions, main products and budget.

**Table 3: Components of the Colombia WAVES Initiative**

Component	Public Policy Priorities	Guiding Questions	Main Product
Technical component of accounts	Promote protection and efficient management of water resources	How can greater coverage and quality of departmental water plans be achieved? How can water concessions be assigned in a more efficient, regulated and appropriate manner? Who are the stakeholders and what are the uses that should be considered by the institutional framework for water management?	Water Accounts for three watersheds
	Promote Conservation and sustainable use of ecosystems and their vegetation	What are the causes of changes in vegetation cover in Colombia? How can the impact of illegal deforestation be prevented and mitigated? How do forest ecosystems and their services	Pilot implementation exercise for the forest account

Component	Public Policy Priorities	Guiding Questions	Main Product
	cover	affect the well-being of communities? How can the flow of forest ecosystem services be ensured and maintained?	
Public policy influence	Guaranteed use of environmental accounts for government tracking, management and sustainable use of natural capital.	How to integrate the results of the accounts system into planning and definition of public policies?	Preparation of National Planning Department (CONPES) document for the environmental account system.
Institutional management	Strengthen institutions in regard to their competencies and roles within development of the WAVES Initiative	How should the institutions within the project be organized to generate the proposed results? What are the institutional needs in terms of training to develop the proposed activities? What are the products that should be generated within the project and disseminated among decision-makers, the scientific community and the general population?	Communication and dissemination of results, coordination and monitoring

Generally, the technical component looks to support decision-makers with solid and consistent environmental accounts and data, in order to promote the protection and efficient management of water resources, encouraging the sustainable use of ecosystems and their vegetation cover. The main products of this component are related to water accounts in three watersheds: the Tota Lake (preliminary results will finish in Phase 1), the Suarez River watershed and the Chicamocha River (to be developed in Phase 2). The results of a preliminary forest account including timber stock at the national levels will help define the needs for work on this issue for Phase 2.

The second component refers to the development of elements that influence public policies and sustain processes to track the status of natural capital in the country. Based on that, the Colombia WAVES Initiative seeks to ensure that public policy decisions take into account environmental variables and macroeconomic indicators in a joint manner, tracking the status and dynamic of natural capital through environmental accounts. One of the main products under the second component is the preparation of a policy document that supports the ongoing construction of environmental accounts, besides the dissemination of results.

Finally, the institutional management component of the initiative aims at putting in place an operational tracking system of the WAVES Initiative, in order to guarantee the achievement of the expected results. Construction of monitoring and tracking system is part of this component.

For additional details on the Monitoring and Evaluation structure of the initiative, readers can consult Annex 4. Key results achieved between the second semester of 2013 and the first semester of 2014 are listed below:

- Teams have been established within IDEAM and DANE to develop water accounts for the Tota Lake watershed. Preliminary results will be presented at the Partnership Meeting in May 2014 and the work is expected to be completed by end-June 2014. Detailed evaluation of available information has been completed and the TC has already approved the baseline year as year 2010 based on quality and availability of information. A close cooperation has been established with the regional environmental authorities and key stakeholders.
- A preliminary version of the forest account (timber stock) will be presented for comments at the Partnership meeting in May and completed by June. A detailed assessment of available information has been completed, and close collaboration has been developed with IDEAM, MADS and DANE on the development of the timber stock account.
- A preliminary document with forest account (forest products) adjustments is expected by June 2014. This product will include the design of the information flow process between institutions in order to support the development of forest accounts at a wider general for emerging policy issues and decision-making. A consultant has already been hired and is working on this product.
- A paper showcasing key aspects of the relationship between national environmental accounts and policy priorities will be presented at the Partnership Meeting in May 2004, and discussed at a national workshop with key stakeholders in June 2014.
- Based on the ongoing work by DANE and CGR, a paper describing the complexities of the institutional framework for natural capital accounting and management will be presented in May 2014.
- A workshop to present the Colombia WAVES Initiative's ongoing work is being organized to formally close Phase 1 with wider participation of different institutions and actors, including academia, the press and relevant decision-makers.

## **6. Summary of Progress**

Work has started on water and forest accounts, for three pilot watersheds in different parts of the country: Cuenca Rio Chinchina (Caldas), Cuenca Alta del Rio Suarez (Santander), and the Laguna de Tota (Boyacá). The first results for Laguna de Tota are expected by June 2014; a detailed work plan for the next six months has been drafted.

At its September meeting, the steering committee decided to extend the work beyond the initial three pilot watersheds and develop integrated national-level accounts for water and forestry (ecosystem accounts) beginning with one of the five major water basins in Colombia.

Teams are working within DANE and IDEAM to prepare the first set of accounts by May 2014. In addition, environmental experts are drafting two papers dealing with the catalyzing effect of the WAVES initiative in promoting the use of existing environmental accounts and showcasing additional possible uses. A series of events are planned for the end of June 2014 to increase awareness of the WAVES process, and to increase stakeholder participation.

### **Institutionalization**

The WAVES-Colombia National Steering Committee includes the National Planning Department (DNP); National Statistics Office (DANE); Ministry of Environment and Sustainable Development; Institute of Hydrology, Meteorology and Environmental Studies (IDEAM); and the Office of the Comptroller General. The committee is responsible for developing the work plan and budget for WAVES implementation. It is supported by a technical committee.

The lead agency for WAVES in Colombia is the DNP. Building on earlier efforts to develop environmental accounts by DANE, and in coordination with the other members of the steering and technical committees, DNP is advancing the WAVES implementation process in the country by actively bringing all key stake-holders to construct water accounts. The steering committee met in September 2013 to develop and approve the work plan moving forward. In addition, a WAVES coordinator has been hired to focus on interagency coordination and facilitate implementation. Natural capital accounting was mentioned in the 2013 State of the Nation address to parliament by the president: “Internally, we are exploring practical measures to ensure that the true value of our own natural capital is integrated into our future national development planning.”

### **Outreach Efforts**

Efforts have been made to reach out to stakeholders, including nongovernmental organizations (NGOs), universities, and local experts. GIZ and representatives from academic institutions were invited to a WAVES workshop in April 2013 organized by DNP and the World Bank. A regional training workshop was held in Bogotá, September 24–27, 2013, to examine the international experience of using environmental accounts in decision making. Participants included representatives from Belize, Costa Rica, Guatemala, Mexico, and Peru; regional autonomous corporations; the Humboldt Institute; national parks; and representatives from several Colombian ministries.

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## Annex 1 : Roles and Competencies of Each Participating Entity in the Colombia WAVES Initiative

Entity	Competencies	Roles
<b>Ministry of the Environment and Sustainable Development</b>	<p>The main function of the Ministry related to environmental accounts is stated in Article 5, Number 8 of Law 99 of 1993:</p> <p><i>“Evaluate the scope and economic effects of environmental factors, their incorporation into the market value of goods and services and their impact on development of the national economy and its external sector; their cost in medium and large infrastructure projects, as well as the economic cost of deterioration and conservation of the environment and of renewable natural resources, and undertake studies, analyses and economic and tax studies in relation to budgetary and financial resources of the environmental management sector and the taxes, fees, contributions, rights, fines and incentives related to it.” (Art. 5, Number 8, Law 99 of 1993).</i></p> <p>On the issue of valuation of environmental services, Article 5, Number 43 of Law 99 establishes that the Ministry is responsible for "Determining the methodologies for technical valuation of the economic costs of deterioration and conservation of the environment and of renewable natural resources."</p> <p>Finally, in regard to issues related to environmental information, the Ministry is responsible for administering the National Environmental Information System and coordinating implementation of that system with the IDEAM, research institutes and regional and local environmental authorities.</p>	<p>Technical determination of the methodologies for valuing the economic costs of deterioration and conservation of the environment and renewable natural resources.</p> <p>Administer the National Environmental Information System and coordinate its implementation with the IDEAM.</p>
<b>National Administrative Department of Statistics (DANE)</b>	<p>DANE is the entity responsible for planning, gathering, processing, analyzing and disseminating Colombia's official statistics. According to Decree 262 of 2004, DANE's goal is to <i>guarantee the production, availability, and quality of strategic statistical information, and direct, plan, execute, coordinate, regulate and evaluate the production and dissemination of basic official information.</i> DANE has three functions, which are:</p> <p>Producing strategic statistics            Synthesizing national accounts            Producing and disseminating basic official information</p> <p>The national accounts are prepared by the Department of Synthesis and National Accounts, whose functions are, among others, the following:</p> <ul style="list-style-type: none"> <li>• <i>Guarantee the production, availability and quality of strategic statistical information.</i></li> <li>• <i>Direct, plan, execute, coordinate, regulate and evaluate the production and dissemination of basic official information.</i></li> <li>• <i>Regulate, direct and coordinate the National Statistical System through formulation, execution, tracking, evaluation and disclosure of the National Statistics Plan and Sector Statistics Plans.</i></li> <li>• <i>Prepare the annual and quarterly national, regional and satellite accounts (among them the environmental account) to evaluate the economic growth of the country, departments and sectors.</i></li> </ul>	<p>DANE is the entity in charge of preparing the national accounts and therefore the environmental accounts as well.</p> <p>In addition, DANE is in charge of guiding the statistical information administration which includes the Agustín Codazzi Geographic Institute (IGAC).</p> <p>Contribute to the design, planning and execution of statistical operations, and statistics derived therein, that are used continuously update the environmental satellite account.</p> <p>Strengthen the strategic administrative records of the entities assigned to WAVES in the different lines of research related to development of national accounts..</p> <p>Establish the conceptual and technical guidelines for construction of ecosystem account pilots in the framework of</p>

	<ul style="list-style-type: none"> <li>• <i>Prepare and adapt the synthesis and national accounts methodologies, including environmental accounts, to suit the country's conditions and characteristics, in line with international recommendations.</i></li> </ul>	environmental accounting.
<b>National Planning Department</b>	<p>The DNP is the technical entity that promotes the implementation of a strategic vision of the country in the social, economic and environmental fields, through design, orientation and evaluation of Colombia's public policies, management and allocation of public investment and its execution in government plans, programs and projects. As an administrative department that is part of the Presidency of the Republic, it is at the same level as the ministries but does not have the ability to initiate legislation.</p> <p>The DNP has a Deputy Department for Sustainable Environmental Development, whose functions are stipulated in Article 16 of Decree 3517 of 2009. The functions related to environmental accounts and valuation of ecosystem services are as follows:</p> <p>Assist DANE in developing environmental accounts for the country.</p> <p>Support and carry out studies aimed at determining the environmental impacts caused by development policies, regulations, plans, programs and projects, as well as the economic and social costs of environmental degradation and economic valuation of the country's natural assets.</p> <p>Participate in the design and application of economic, environmental and institutional analysis for tracking the environmental sector and risk, in coordination with the Department of Economic Studies.</p> <p>Advise the environmental authorities and institutions that are part of the National Environmental System (SINA) and the System for Disaster Prevention and Assistance (SNPAD) regarding development and implementation of the Environmental Information System and the Integrated Information System for Disaster Prevention and Assistance.</p>	<p>The DNP's functions related to this issue include supporting the DANE in preparing environmental accounts, providing support to carry out studies on the economic valuation of the country's natural assets and the costs of environmental degradation, and in general using environmental accounts to guide and evaluate public policies and allocate the national government's public investment.</p> <p>Advise on the formation and implementation of the Environmental Information System for Colombia.</p> <p>The Deputy Department of Sustainable Environmental Development, with its four groups (climate change, risk management, sectors and biodiversity) also provides support for the Colombia WAVES Initiative.</p>
<b>IDEAM</b>	<p>IDEAM is a public agency attached to the Ministry of the Environment that provides technical-scientific support to the organisms that are part of the National Environmental System (SINA). Its main functions:</p> <p>Generating primary data from the hydrometeorological network and gathering environmental data from other institutions related to different biophysical aspects, pollution and degradation of natural resources, such as:</p> <ul style="list-style-type: none"> <li>• Real-time data and climate information, disaster prevention alerts and climate forecasts at different regional scales with diverse applications.</li> <li>• Studies on climate impacts, climate variability and climate change in the territory. The status and vulnerability of watersheds, floods and landslides.</li> <li>• IDEAM is the information node of the SINA. It consolidates information about the status of the environment and natural resources in the country. As such, it gathers information on biodiversity and the status of the country's ecosystems produced by the research institutes of the SINA (IAvH, SINCHI and IIAP).</li> <li>• It generates information about the use and quality of natural resources (air, water, soil, etc.). It generates information about the environmental impacts of the different economic sectors</li> </ul>	<p>IDEAM is the entity in charge of gathering information, carrying out studies and supplying information related to the ecosystems that make up the country's natural assets. In addition, it tracks the country's biophysical resources, particularly with respect to pollution and degradation, and directs and coordinates Colombia's Environmental Information System.</p>

	<p>and about their benefits for quality of life of the population and environmental health.</p> <ul style="list-style-type: none"> <li>• It provides the technical basis for decisions made by the Environment Ministry. It serves as a frame of reference in matters related to territorial environmental planning (watershed guides).</li> <li>• It operates the country's network of hydrological and meteorological stations.</li> <li>• It is responsible for consolidation, coordination and production of protocols for the air quality oversight system (24 stations throughout the country).</li> <li>• It guarantees the generation of data on natural resources quality, produced by environmental labs in the country.</li> </ul>	
<p style="text-align: center;"><b>Comptroller General of the Republic</b></p>	<p>The CGR is the entity in charge of overseeing fiscal management (management of the nation's funds or assets) and controlling the results of public administration.</p>	<p>Among the Comptroller's government oversight functions is determining the value of environmental costs in order to quantify the use and deterioration of natural resources. It carries this out through the accounting and reporting of the entities it oversees in regard to cost-benefit analyses of conservation, restoration and management of public investment projects, in accordance with the regulations issued by the Comptroller. The Comptroller General must present the results of the impact quantification due to use and deterioration of natural resources in its annual report to the Congress on the status of natural resources.</p> <p>For the purposes of this study, the Comptroller General may use as an input the results of environmental accounts, analyzing them and including them in its annual report on the status of natural resource and the environment.</p>

## Annex 2: Work Plan and Budget - Final Version Approved in March 2014

Objective	Public policy priorities	Guiding questions	Main product	Activities	Indicators	Leader / Other stakeholders	Semesters					
							1st 2013	2nd 2013	1st 2014	2nd 2014	1st 2015	2nd 2015
Develop a solid and consistent base of accounts and economic-environmental data to inform public policy and strengthen planning for development	Promote protection and efficient management of water resources	How can greater coverage and quality of departmental water plans be achieved? How can water concessions be assigned in a more efficient, regulated and appropriate manner? Who are the stakeholders and what are the uses that should be considered by the institutional framework for water management?	Water accounts for three watersheds	Determine the framework for compilation and valuation in regard to water resources	Methodological document	DANE / IDEAM, MADS, DNP, CGR	x	x	x	x	x	
				<b>Watershed 1</b>								
				Collection and assessment of basic data	Database and assessment document		x	x				
				Framework compilation	Database			x				
				Valuation of assets and flows	Database			x	x			
				Validation process	Workshop reports			x	x			
				Preparation of outputs	Final report				x			
				<b>Watersheds 2 and 3</b>								
				Collection and assessment of basic data	Database and assessment document			x	x			
				Framework compilation	Database				x	x		
				Valuation of assets and flows	Database				x	x	x	
				Validation process	Workshop reports						x	

Objective	Public policy priorities	Guiding questions	Main product	Activities	Indicators	Leader / Other stakeholders	Semesters					
							1st 2013	2nd 2013	1st 2014	2nd 2014	1st 2015	2nd 2015
				Preparation of outputs	Final report						x	
				<b>Conceptualization and pilot exercise for the national forest account (land and ecosystems)</b>								
				Review of existing frameworks and development of a methodological proposal	Methodological document		x	x	x	x	x	
				<b>Pilot exercise</b>								
				Collection and assessment of basic data	Database and assessment document			x	x			
				Framework compilation	Database				x	x		
				Valuation of assets and flows	Database				x	x	x	
				Validation process	Workshop reports						x	
				Preparation of outputs	Final report						x	
	<b>National Development Plan 2010-2014:</b> In sector planning and environmental land use planning, and in order to protect and	What are the assets that are part of the patrimony account for the water resource and forest resource? What methodologies exist to measure the physical units of these assets? What methods exist to assign a	Proposed structure of the patrimony account in the framework of National Accounting	Review of theoretical frameworks for structuring patrimony accounts	Document	DANE / IDEAM, MADS, DNP, CGR	x					

Objective	Public policy priorities	Guiding questions	Main product	Activities	Indicators	Leader / Other stakeholders	Semesters					
							1st 2013	2nd 2013	1st 2014	2nd 2014	1st 2015	2nd 2015
	restore biodiversity and its ecosystem services, it is imperative to "promote environmental account schemes to differentiate national production, adding the value of associated ecosystem services and recognizing this factor as a comparative advantage in international markets" (p. 437).	monetary value to these assets? What methodologies exist to calculate the depletion of these assets?		Identification of information and basic statistical series	Document and database		x					
Preparation of the measurement proposal				Document			x					
Validation of the proposed methodology				Workshop reports			x					
Final report				Document			x					

Adoption of environmental accounts as a priority instrument for public policy decision-making	Guaranteed use of environmental accounts for government tracking, management and sustainable use of natural capital.	How to integrate the results of the accounts system into planning and definition of public policies	Preparation of National Planning Department (CONPES) document for the environmental accounts system	Review of existing environmental accounting regulations in the country	Review document			x			
				Plan the document				x			
				Assess the problem situation				x			
				Define the plan of action				x			
				Prepare the entire draft document				x			
				Review the technical, budget and legal content of the doc.				x			
				Present the doc. CONPES						x	
				Review and organize results of the WAVES initiative, both partial and general, including pilots	Review document						x

DANE / IDEAM, MADS, DNP, CGR

				Carry out the initiative within the parameters of the Colombian Environmental Information System (SIAC) and the National Statistical Systems	Review document					x		
				Establish the implementation plan according to policy needs	Implementation plan document					x		
				Prepare the final proposal	CONPES document						x	x
			Communication of results	Communication strategy	Strategy document	DANE / IDEAM, MADS, DNP, CGR		x	x			
				Implementation	Reports				x	x	x	x



**Expected result:** Stronger institutions making decisions in alignment and coordinated information systems

Strengthen institutions in regard to their competencies and roles within development of the WAVES initiative.	<p><b>Decree 3570 of 2011, Creation of the MADS:</b> Develop agreements between the entities of the administrative sector to share information and improve the efficiency of production, collection, use and availability of information.</p> <p><b>Decree 262 of 2004, Restructuring of DANE:</b> Design, plan, lead and execute statistical operations needed by the country within the framework of the National Statistical System</p>	<p>How should the institutions within the initiative be organized to generate the proposed results? What are the institutional needs in terms of training to develop the proposed activities? What are the products that should be generated within the initiative and disseminated among decision-makers, the scientific community and the general population?</p>	<p>Institutional organization of the initiative. Communication of initiative results</p>	<p>Proposal for the initiative's institutional organization (functions, roles, activities and products)</p>	<p>Documents, institutional agreements</p>	x	x	x	x	x	x	
	<p><b>Law 99 of 1993 The Colombian Environmental Information System (SIAC)</b> "This is the integrated group of</p>		<p>General coordination</p>	<p>Training</p>	<p>Reports</p>	<p>DNP / IDEAM, MADS, DNP, CGR, DANE</p>	x	x	x	x	x	x
			<p>Ongoing initiative tracking</p>	<p>Tracking of Technical Committee</p>	<p>Reports</p>		x	x	x	x	x	x
				<p>Tracking of Steering Committee</p>	<p>Reports</p>		x	x	x	x	x	x

<p>stakeholders, policies, processes and technologies involved in managing the country's environmental information [1], to facilitate the generation of knowledge, decision-making, education and social participation for sustainable development."</p>	Tracking of steering committee	Reports	x	x	x	x	x	x
	Dissemination strategy for partial and final initiative results	Strategy document		x	x	x	x	
	Preparation of final initiative document	Document					x	x
	Coordination of information systems	Document	x	x	x	x	x	x

### Annex 3: Meetings Held from Inception end-March 2014

Meeting/date	Objective	Participants	Minutes*
WAVES Meeting Bogotá, August 31, 2012. DNP, Floor 8. Time: 2:30 pm	Introduction of Ana María Franco - Handover by Andrés Morales	DANE, CGR, DNP, MADS and CI.	✓
WAVES Meeting Bogotá, August 11, 2012. DNP, Floor 8. Time: 9:00 pm	Preparation for World Bank Mission	DANE, IDEAM, CGR, DNP, MADS y CI.	✓
1st World Bank Mission Bogotá, August 15 and 16, 2012. MADS. Floor 4	Define work, inter-institutional agreements	DANE, IDEAM, CGR, DNP, MADS y CI.	✓
WAVES Meeting Bogotá, August 22, 2012. DNP, Floor 8. Time: 9:00 pm	Define proposal for linking entities, functions, roles, technical committee, steering committee, participants, functional structure, etc.	DANE, IDEAM, DNP, MADS.	✓
WAVES Meeting Bogotá, August 22, 2012. DNP, Floor 8. Time: 9:00 pm	Present WAVES process to Presidential Agency for International Cooperation of Colombia (APC) and Deputy Department of Credit (Subdirección de Crédito)  Determine how to formalize the process in the country	Deputy Department of Credit, Office of Legal Affairs (Oficina de Asuntos Judiciales) and SDAS-DNP, APC	✓
2nd World Bank WAVES Mission Bogotá, November 1 and 2, 2012. Hotel Tequendama	Presentation of consultant Mauricio Alviar from the World Bank.  Define policy questions, update work plan.	World Bank, MADS, DANE, DNP, IDEAM, CRG. Guests: National Parks, IAvH, APC.	✓
WAVES Meeting	Workshop on national accounts and work plan	World Bank, MADS, DANE, DNP, IDEAM, CRG.	✓

Bogotá, November 22, 2012. Hotel Tequendama			
WAVES Meeting Bogotá, November 28, 2012 DNP Floor 8. Time: 3:00 pm	Determination of pilot watershed and proposal of other watersheds	World Bank, MADS, DANE, DNP, IDEAM, CRG.	✓
WAVES Meeting Bogotá, November 29, 2012 DNP Floor 8. Time: 8:00 am	Project progress and definition of work time line.	World Bank, DNP	—
WAVES Meeting Bogotá, November 30, 2012 DNP Floor 5. Time: 9:00 am	Determine the type of document to be signed by the World Bank and the various entities	DNP (General Secretariat, Deputy Department of Credit and SDAS)	—
WAVES Meeting Bogotá, December 5, 2012 World Bank-Time: 3:00 pm	Project progress and definition of work time line.	DNP-World Bank	—
WAVES Meeting Bogotá, December 5, 2012 World Bank-Time: 5:00 pm	Present the WAVES initiative to representatives of Globe International	DNP, World Bank, Globe International	—
3rd World Bank WAVES Mission Bogotá, December 6, 2012. Hotel Tequendama	Determination of watersheds and continued formulation of the work plan	World Bank, MADS, DANE, DNP, IDEAM, CRG.	✓
WAVES Meeting Bogotá, January 24th, 2013. Hotel Tequendama-Time: 8:30 am	Review, comment and discuss the proposed work plan. Define schedule of activities.	World Bank, DNP, MADS, DANE, CGR, IDEAM.	✓
WAVES Telephone Meeting Bogotá, Medellín, Washington. February 6 <sup>th</sup> , 2013- Time: 11:00 pm	Discuss these main topics: Work plan and policy note, Carolina Urrutia's Terms of Reference, Washington meeting, WAVES national workshop, WAVES socialization in pilot sites.	World Bank, DNP.	✓
WAVES Meeting Bogotá, February 26 <sup>th</sup> , 2013. Hotel Tequendama-	Training on the importance of valuing ecosystem services, environmental satellite accounts and case studies on water	World Bank, DNP, MADS,	✓

Time: 8:30 am	resources. Meeting technical committee to prepare the fourth World Bank Mission.	DANE, CGR, CORMAGDALENA, SDA, Parques Nacionales Naturales de Colombia.	
WAVES Meeting Bogotá, March 5 <sup>th</sup> , 2013. Hotel Tequendama- Time:8:30	Defining acquisition plan details and work plan. Define fields on the information that will be requested in the workshop (matrix, information demand, supply, information gaps)	World Bank, DNP, MADS, DANE, CGR, IDEAM.	✓
WAVES Meeting Bogotá, March 21 <sup>st</sup> , 2013. Hotel Tequendama- Time: 8:30 am	Defining the Mission's agenda and workshop. Revise the Memorandum of Understanding Others: Suarez River Watershed, Waves Partnership meeting (April 9 -11) and Global Steering Committee (April 12)	World Bank, DNP, MADS, DANE, CGR, IDEAM.	✓
4 <sup>th</sup> World Bank WAVES Mission & Workshop Bogotá. April 2 <sup>nd</sup> , 2013. Hotel Tequendama. April 3 <sup>rd</sup> and 4 <sup>th</sup> , Hotel Embassy Suites –Time:7:45 a	Submit WAVES project objectives, methodology, work plan and duration. Sensitize participants on the importance of measurement and economic valuation of ecosystems for environmental decision making, economic and social policy. Provide a conceptual framework for environmental accounting in the context of national accounts. Introduce international experience in environmental accounts. Measurable and verifiable reach agreements on inter-institutional participation in the WAVES project.	World Bank, DNP, DANE, MADS, IDEAM, CGR	✓
WAVES 3 <sup>rd</sup> Partners Meeting Washington. April 9 <sup>th</sup> , 10 <sup>th</sup> & 11 <sup>th</sup> , 2013.	Actively participate at workshop roundtables around private and public presentations about environmental accountants.	Government members of WAVES Partnerships; NGOs, donor entities (CI, Globe, GIZ, IFC, SEEA, NCC, TEEB <sup>1</sup> ), UN Agencies and civil society.	✓
WAVES Coordinators Meeting Washington, April 12 <sup>th</sup> , 2013. World Bank.	WAVES Project budget review Communication strategy presentation Highlight Colombia's progress	WAVES Countries' coordinators	✓
Steering Committee Meeting Bogotá, June 4 <sup>th</sup> , 2013. Hotel Tequendama-Time: 9:00am	Publicize the progress of WAVES (global and national), define commitments and the scope of partner entities	DNP, DANE, MADS, IDEAM, CGR	✓
WAVES Meeting	Agree on the steps to start the implementation phase.	World Bank, DNP, DANE	✓

<sup>1</sup> NCC: Natural Capital Committee, TEEB: The Economics of Ecosystem & Biodiversity; IFC: International Finance Corporation; SEEA: System of Environmental Economic Accounting.

Bogotá, June 12 <sup>th</sup> , 2013.	List the specific tasks and define the best mode for each.		
WAVES telephone Meeting Bogotá-Washington June 18 <sup>th</sup> , 2013. Time: 2:40 pm	Waves Coordinator Relevance. Work plan and terms of reference Agreement on next World Bank Mission	World Bank, DNP	✓
Technical Committee Meeting Bogotá, June 27 <sup>th</sup> 2013. MADS	International Conference on UNSEEA implementation Report Terms of Reference and Proposed Structure		✓
WAVES telephone Meeting Bogotá-Washington. July 24 <sup>th</sup> ,2013.	Waves Coordinator Relevance. Work plan and terms of reference Agreement on next World Bank Mission	World Bank, DNP	✓
WAVES Workshop Bogotá. September 25 <sup>th</sup> & 26 <sup>th</sup> , 2013. Hotel Estelar Suite Jones	Discuss and establish the link between the information derived from the development of the Environmental Economic Accounting (SEEA) in the components of water and forest, and the needs of public policy in these sectors at national, regional and local level	World Bank, DNP, DANE, MADS, IDEAM, CGR	✓
WAVES Steering Committee meeting Bogotá. October 23 <sup>rd</sup> , 2013. World Bank.	Review and formalize agreements on the discussions, proposals and commitments established during the World Bank mission conducted from September 24 <sup>th</sup> to 27 <sup>th</sup> , 2013.	World Bank, CGR, DNP, IDEAM, DANE, MADS	✓
WAVES Mision Tecnica March 31-April 2, 2014	Review of progress to-date	World Bank, CGR, DNP, IDEAM, DANE, MADS	✓

**Annex 4: Monitoring and Evaluation Framework**

**Global Results-Based Monitoring Matrix – PDO 1**

OBJECTIVES & OUTCOME (RESULTS) INDICATORS	Base-Line June 2011	Prep year June 2012	Yr 1 Jun-13	Yr 2 Jun-14	Yr 3 Jun-15	Yr4 Jun-16	Yr5 Jun-17 (proposed)
<b>PDO 1. To implement natural capital accounting in partner developing and developed countries</b>							
<b>Outcome Indicators:</b>							
a. Country with a commitment to institutionalize natural capital accounting based on lessons learned from the WAVES program	6 staff in Stats Office						
<b>Intermediate Outcomes Indicators</b>							
21.1 Country has completed the milestones for the WAVES Preparation Phase*	none		National Steering Committee established. Technical Committee established.				
1.2 Country with asset accounts for selected natural assets	Subsoil asset accounts			Preliminary national forest accounts, water asset accounts for 1 <sup>st</sup> pilot site	National and regional forest accounts, water asset accounts for 2 <sup>nd</sup> and 3 <sup>rd</sup> pilot sites	Updated accounts, water asset accounts for 1 major river basin and ecosystem pilots	Updated accounts and others to TBD
1.3 Country with flow accounts for selected natural resources	National water, energy accounts		Updated accounts	Water accounts at national and for 1 pilot watershed	Updated water, forest accounts	Updated water and forest accounts	Updated existing flow accounts

OBJECTIVES & OUTCOME (RESULTS) INDICATORS	Base-Line June 2011	Prep year June 2012	Yr 1 Jun-13	Yr 2 Jun-14	Yr 3 Jun-15	Yr4 Jun-16	Yr5 Jun-17 (proposed)
1.4 Country with experimental ecosystem accounts				Preliminary results for 1 of 3 pilot watershed sites	Preliminary results of 2 <sup>nd</sup> and 3 <sup>rd</sup> pilot watershed sites	Final report on 3 pilot watershed sites	Scale up pilot watershed accts to regional/national level TBD
1.5 Country with macroeconomic indicators based on NCA	None					Develop preliminary macroeconomic indicators	Update macroeconomic indicators
1.6 Country with capacity for maintaining NCA (evidenced by dedicated government staff for NCA and regular reporting mechanism for production of natural capital accounts)	Statistics Office has unit for NCA, 6 staff			Inter-agency agreement on data sharing; Staff from Stats office and technical committee for accts receiving training	Training continues through in-country, regional and other training workshops, and by working with int'l experts on the accts	Training continues through in-country, regional and other training workshops, and by working with int'l experts on the accts	Training continues in all countries through in-country, regional and other training workshops, and by working with int'l experts on the accts

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



## Global Results-Based Monitoring Matrix – PDO 2

OBJECTIVES & OUTCOME (RESULTS) INDICATORS	Base-Line June 2011	Prep year June 2012	Yr 1 Jun-13	Yr 2 Jun-14	Yr 3 Jun-15	Yr4 Jun-16	Yr5 Jun-17 (proposed)
<b>PDO 2. To incorporate natural capital accounting in policy analysis and development planning in core implementing countries</b>							
<b>Outcome Indicators:</b>							
a. NCA informs policy dialogue on growth, environment and poverty reduction, evidenced by citing NCA or using NCA indicators and data in, development plans, sector strategies and plans, executive orders, legislative documents, and the broader policy analysis literature (may include World Bank ESW, AAA and project formulation documents)	none			CONPES (Environmental Management Plan for 1 <sup>st</sup> pilot watershed) calls for NCA as management tool	CONPES (Environmental Management Plan for 2 <sup>nd</sup> and 3 <sup>rd</sup> pilot watersheds) call for NCA as management tool; other TBD with new government	NCA informs Forest Strategic Plan, and policy instruments for River Basin mgmt.	
<b>Intermediate Outcomes Indicators</b>							
2.1 No. of core implementing countries with policy notes and analytical work based on NCA.	None			Technical report and policy note on national forest accounts, and on water accounts for 1 <sup>st</sup> pilot watershed	Policy note and tech report on 2 <sup>nd</sup> and 3 <sup>rd</sup> watershed pilots	Policy note and technical report on watershed accts and method for scaling up to regional/national level; 2 <sup>nd</sup> phase policy notes on forest accounts	Technical report, policy notes on watershed accounts for the country

OBJECTIVES & OUTCOME (RESULTS) INDICATORS	Base-Line June 2011	Prep year June 2012	Yr 1 Jun-13	Yr 2 Jun-14	Yr 3 Jun-15	Yr4 Jun-16	Yr5 Jun-17 (proposed)
2.2 Number of countries with capacity for using NCA in policy dialogue (evidenced by government staff trained in using NCA)	None		NCA training workshop for 50+ people	3 staff attended UNSD-WB training in SEEA (Brazil); hosted regional ecosystem acct training 30+ people;	Forest accounting workshop for 30+ people; Water accounting workshop for 30+ people; 1-week ecosystem accounting workshop for 30+ people	Regional and national training workshops, TBD	Regional and national training workshops, support from international experts



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