
Colombia Country Report 2015

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National Administrative Department of Statistics (DANE)

Institute of Hydrology, Meteorology and Environmental Studies (IDEAM)

Comptroller General of the Republic (CGR)

Ministry of the Environment and Sustainable Development (MADS)

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

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

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1| The WAVES Partnership

The Wealth Accounting and Valuation of Ecosystem Services initiative, 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 environmental-economic 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 2015, there has been a great deal of progress in the implementation of WAVES, and country-led WAVES initiative are being implemented in Costa Rica, Colombia, Botswana, Madagascar and Philippines. The level of confidence in the success of WAVES has increased and a community of practice is being developed between core implementation countries in order to share lessons learnt.

2| Colombia WAVES Initiative

2.1| 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. 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, 2006).

Multiple grammar/spelling errors. Suggested revisions: Colombia's "2014-2018 Development Plan: All for a New Country," reports that the Colombian economy had solid growth in 2014, building on an average annual growth of 4.3% between 2000 and 2013. The growth has helped to alleviate poverty and inequality, and increase per capita income. However, from an environmental standpoint, this economic growth is unsustainable because it is based on the depletion of wealth. While economic gains have generated benefits to Colombia, challenges have also arisen in terms of sustainable conservation, and management of the country's natural capital. The last decade's economic activities, in addition to increasing population pressures, have led to land use changes that have heavily affected biodiversity and environmental assets; integrated land-use planning is required to sustainably manage these resources.

The close relationship between natural capital and wellbeing makes up an important chapter in Colombia's National Development Plan, highlighting the overall focus on green growth. In order to achieve this goal, Colombia has established three primary mid-term objectives: i) Advancing towards sustainable, low-carbon growth; ii) Protecting and ensuring the sustainable use of natural capital, including by strengthening the governance of environmental assets; and iii) Achieving resilient growth and reducing vulnerability to natural disasters and climate change.

Natural capital accounting has a proven track record in Colombia, starting with many years of Environmental Satellite Account (*Cuenta Satélite Ambiental*, or CSA). 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 in line with the National Accounts System, the CSA measures efforts made by different economic sectors to conserve, mitigate harmful effects to, 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 is now developing Phase 2: Implementing natural capital accounting at national and regional level after a promising Phase 1, which was centered on the institutional arrangements necessary to ensure that its advances would be institutionally internalized.

2.2| 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 Administrative 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.

A Memorandum of Understanding has been agreed and is in the process of signature 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 revolve 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

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 Integrated Water Resource Management 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

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 to specific technical matters.

2.3| Phase I – Preparation: 2011–June 2014

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

The following are two key lessons learned during Phase 1 that were essential to the initiative's implementation phase 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 effort to 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, thereby speeding up implementation.

2.4| Phase II-Implementation: July 2014–June 2016

The implementation phase officially began on July 2014 after the Steering Committee gathered on June of the same year and approved the main components of WAVES Work Plan:

a. NCA implementation

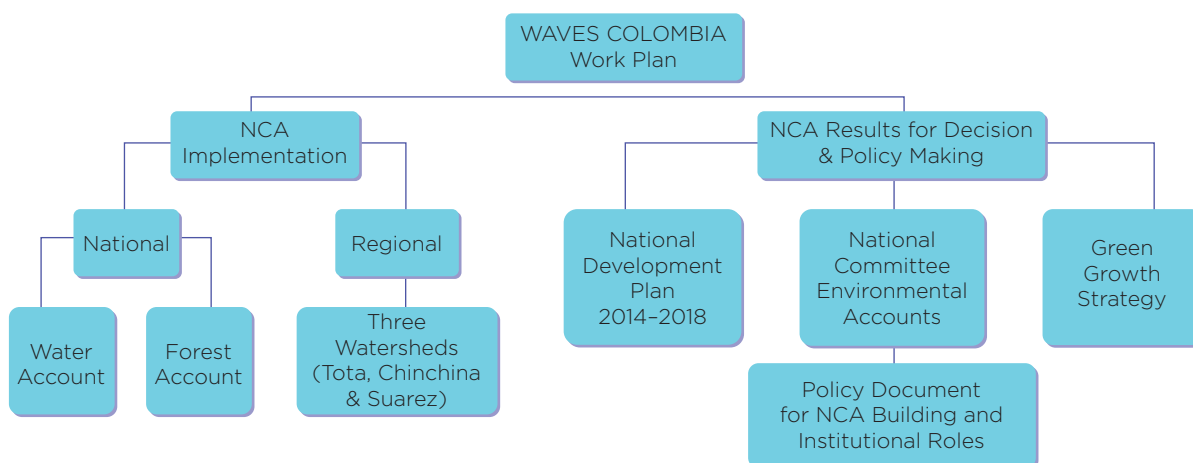
The technical component of the WAVES initiative in Colombia is based upon the elaboration of national and regional natural capital accounts. At the national level, water accounts will link the environmental and economic elements of water resource management in order to inform Colombia's Integrated Water Resource Management policy. Having used the accounts to identify main water uses and users, the goal is to provide efficient, regulated and adequate water concessions. At the same time, national forest accounts will help to determine the causes of change in vegetation cover, and to identify and maintain the beneficial services that forests provide to communities.

At the regional level, water, forest and ecosystem accounts are being developed in three of the country's strategic watersheds: Tota Lake, Chinchiná River and Alto Suárez River. These accounts will give essential information for environmental management tools such as Watershed Plans and Regional Water Assessments

b. Policy document for NCA and institutional roles

Guaranteeing the use of environmental-economic accounting in the monitoring, management and use of natural capital is the main aim of the policy component of the WAVES Colombia Work

 **Figure 1.** WAVES Colombia Work Plan



Plan. In sum, WAVES Colombia seeks to design and apply inter-sectoral agendas that promote green growth; develop relevant macroeconomic indicators; and the strengthen institutional capacity of the WAVES team and the National Committee of Environmental Accounts (as stated in the National Development Plan).

During the implementation phase, various meetings were held, as listed in Annex 3.

3| Priority Policy Areas and Units of Analysis

During the preparation phase, both the SC and TC agreed on the main priority areas, which are fundamental to all environmental services in Colombia: Water and Forests. In discussing how best to pilot the initiative, three micro-watersheds were selected based on their relevance to national-level policies as well as local-level management issues. In a highly decentralized environmental institutional framework, producing information relevant to both is of great importance. As a result Tota Lake, Chinchiná and Alto Suárez watershed were chosen as strategic pilots.

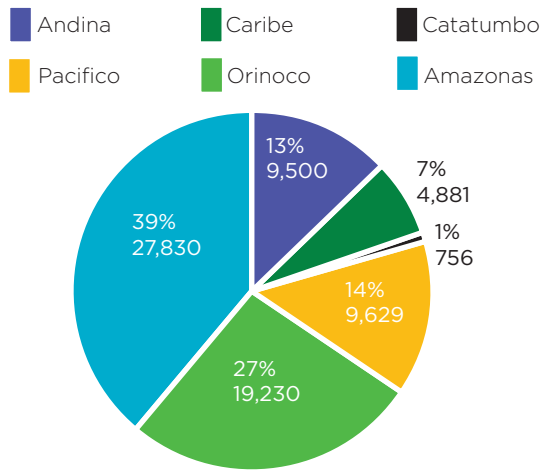
Nevertheless, as the initiative was advancing into the implementation phase, opportunities to produce national natural capital accounts were highlighted due to the robust information produced by WAVES' institutions such as IDEAM and DANE. This led to an agreement to develop water and forest accounts at a country scale, which to-date has yielded preliminary results for timber assets and changes in area of forest cover. Water accounts at the national level will provide preliminary results on asset, use-supply and emissions components by June 2015.

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 km³ and a flow volume of 71,800 m³/second. While at the beginning of the 20th 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. Figure 2 is explained further down, so I would recommend deleting this sentence.

Another important indicator of water availability is the water yield or runoff, which for Colombia is 63 liters per second per kilometer square (l/sec/km²), six times higher than the global average (10 l/sec/km²) and three times higher than the Latin America region's average (21 l/sec/km²). 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. Distribution of Flow Volumes (m³/sec) by Hydrographic Areas



Source: IDEAM.

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 activity in this area in relation, for example, to the Amazon region, which has the largest water supply and the smallest concentration of municipal seats.

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.

4.1| 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.

Figure 3. Distribution of Water Supply and Municipal Seats by Hydrographic Area

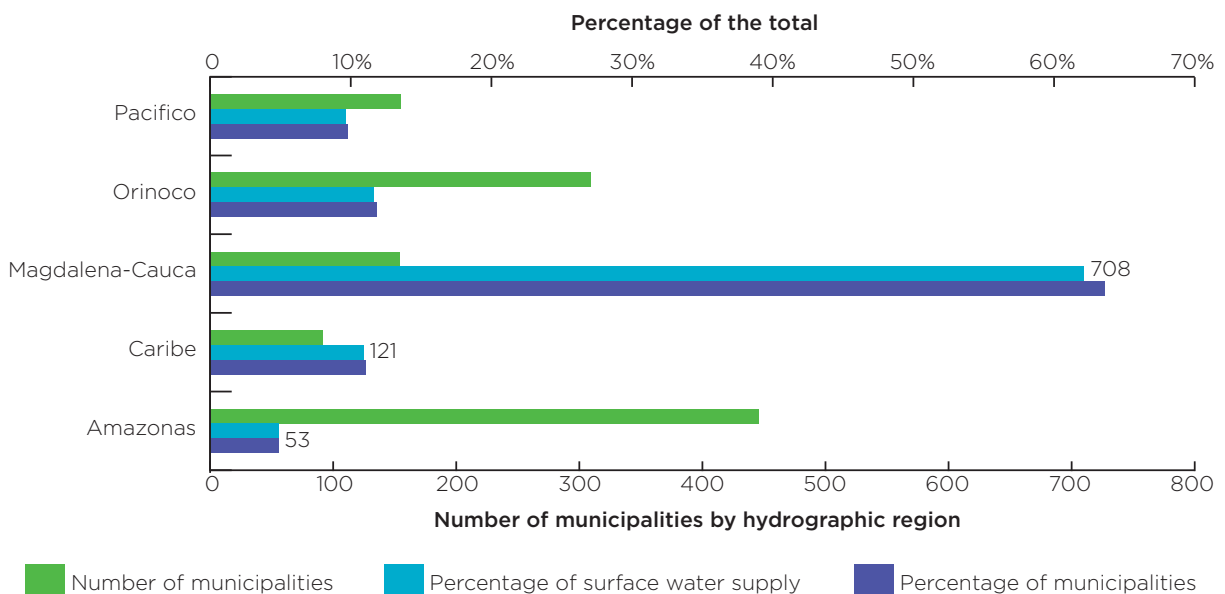
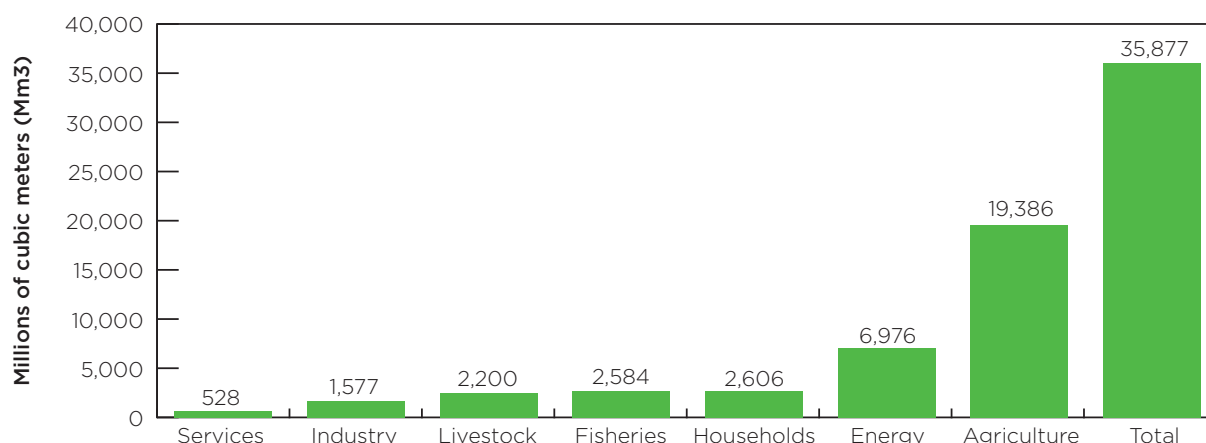


Figure 4. Distribution of Water Demand by Economic Activity



Source: IDEAM, 2010.

Colombia 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 land distribution 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 expansion of agricultural and livestock activities. According to the Agustín

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
Total Forests	69,555,974	100.00	60.92
Other Vegetation Cover	—	—	39.08
Total	114,174,800		100.00

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

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 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.

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 produced by 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 in its Development Plan for managing biodiversity and its ecosystem services. Toward this end, the Plan aims to: (i) formulate a 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 a social co-responsibility strategy to combat forest fires; and (v) define a policy for environmental management and land use planning of the Colombian Amazon.

4.2| Watersheds as Units of Analysis

Since the 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 to 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 focus on 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 adopted the watershed as the basic geographic planning unit, as per Decree #1729 in the year 2002. 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 systems. 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 shared responsibilities of authorities, organizations, territorial entities, responsible third parties and communities 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 most 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 cover. In this sense, creating environmental accounts for watersheds will undoubtedly generate key inputs for decision-making by environmental authorities in terms of managing watersheds and related forest ecosystems, to achieve more efficient and sustainable allocation.

4.3| 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 resources 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, broken down by activity type, are developed, the environmental authorities will have more information to better define concessions. Currently, there is evidence that some water concessions grant amounts greater than their 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. This will require 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 also 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:

- **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

Phase I concluded on 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 is looking 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 June 2014, 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 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.

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 Chinchiná River Watershed (to be developed in Phase 2). The results of a preliminary

Table 3. Components of the Colombia WAVES Initiative

Component	Public Policy Priority	Guiding questions	Main Product
Technical component of accounts	Promote protection and efficient management of water resources	<p>How can greater coverage and quality of departmental water plans be achieved?</p> <p>How can water concessions be assigned in a more efficient, regulated and appropriate manner?</p> <p>Who are the stakeholders and what are the uses that should be considered by the institutional framework for water management?</p>	<p>Water Accounts for three watersheds</p> <p>Water account at national level</p>
	Promote conservation and sustainable use of ecosystems and their vegetation cover	<p>What are the causes of changes in vegetation cover in Colombia?</p> <p>How can the impact of illegal deforestation be prevented and mitigated?</p> <p>How do forest ecosystems and their services affect the well-being of communities?</p> <p>How can the flow of forest ecosystem services be ensured and maintained?</p>	<p>Forest and ecosystem Accounts for three watersheds</p> <p>Forest account at national level</p>
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.

(continued on next page)

Table 3. Components of the Colombia WAVES Initiative (*continued*)

Institutional management	Strengthen institutions in regard to their competencies and roles within development of the WAVES Initiative	<p>How should the institutions within the project be organized to generate the proposed results?</p> <p>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?</p>	Communications strategy and dissemination of results, coordination and monitoring
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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 a 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 2015 are listed below:

- Water and forest groups have been established within IDEAM and DANE to develop accounts at the national level. Results of the national forest account will be presented at the WAVES Partnership Meeting in June 2015.
- The national forest account is a result of the commitment and persistence of WAVES institutions, which identified an opportunity to work together in the elaboration of the account and move forward in the monitoring of environmental assets. 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 national forest account.
- Natural capital accounting has been included in the National Development Plan 2014–2018 giving a solid base to consolidate the National Committee of Environmental Accounts.

An experienced team is working in the elaboration of the national water account and preliminary results will be provided by June 2015.

Natural capital accounting has attracted the attention of regional environmental authorities such as CORPOCALDAS and capacity building is being carried out by way of workshops delivered to local stakeholders. Additionally, the WAVES team aims to work with CORPOBOYACA in the update of water accounts developed previously in order to build capacity in the regional authority.

5.1| Next Steps of WAVES in Colombia 2015

At the national level, WAVES is supporting cross-institutional work on a national water account, and forest and land accounts. Plans are also underway to work on water and forest accounts at a basin level. At the regional level, the WAVES team, in partnership with the environmental regional authorities, is developing water, forest and ecosystem accounts for two strategic watersheds: Alto Suárez and River Watershed. WAVES will support preliminary findings of accounts in collaboration with the National Committee of Environmental Accounts. Communications and outreach efforts are being initiated to contribute in the strategic dissemination of key findings from ongoing pilot project and national accounts, in order to actively engage public institutions, research centers, academy and all relevant stakeholders.

6| Summary of Progress

WAVES work in Colombia had initially been focused on developing NCA for three pilot watersheds (Tota Lake, Chinchiná and Alto Suárez rivers). Besides these, the WAVES support includes integrated national-level accounts. Work on a forest national account began in June 2014 and on a water national account began in 2015.

6.1| Natural Capital Accounts at National Level

National forest accounts

The commitment of the institutions that work with the WAVES team in Colombia has allowed the development of the national forest account. We now have preliminary results for the physical asset account for timber resources and forest covered areas of the land asset account.

Colombia is one of the core implementing countries for the WAVES Initiative. In 2014 the SC oversaw the production of a national forest account, working closely with institutions and their available data.

The account, which gathered data relating to the country’s forest asset and flows, showed that between 2000–2009 forest and semi natural areas were the most changed land cover type, and now makes up 71 percent of Colombia’s land asset (Figure 5). Also, within this land category, nearly the 82% is made up of dense forests. (Figure 8)

Figure 5. Land Asset of Colombia

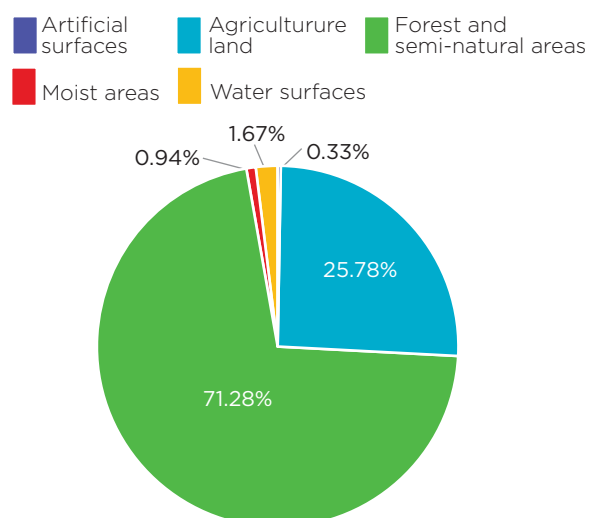
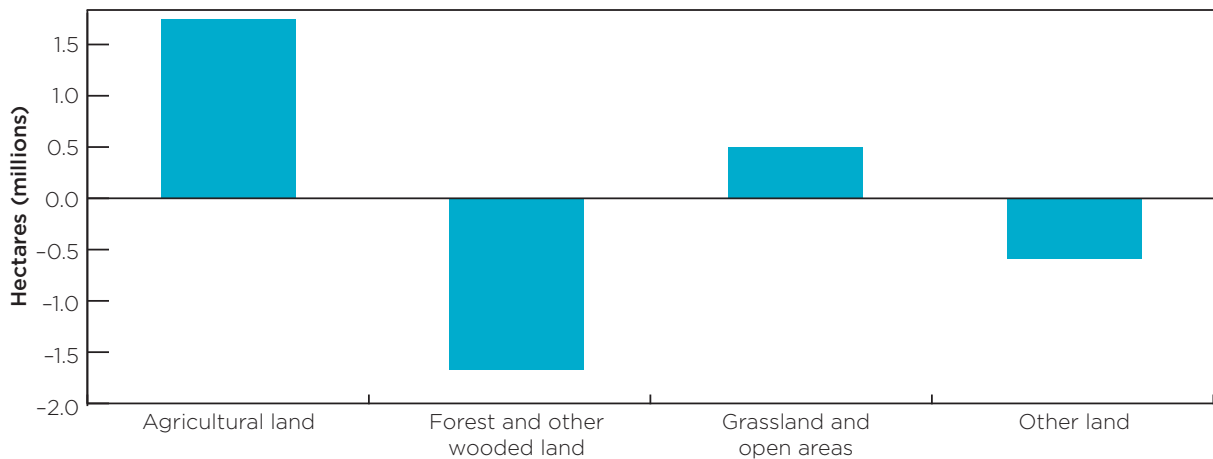


Figure 6. What the Land Accounts Show



Net changes in land use 2000-2009*

*Land satellite images analyzed between 2000-2002 and 2005-2009

The data suggests that an increase in the area of land given over to agriculture, mining and livestock contributed to deforestation and forest degradation and an overall reduction of forest and other forest land of 1,667,220 hectares. (Figure 6).

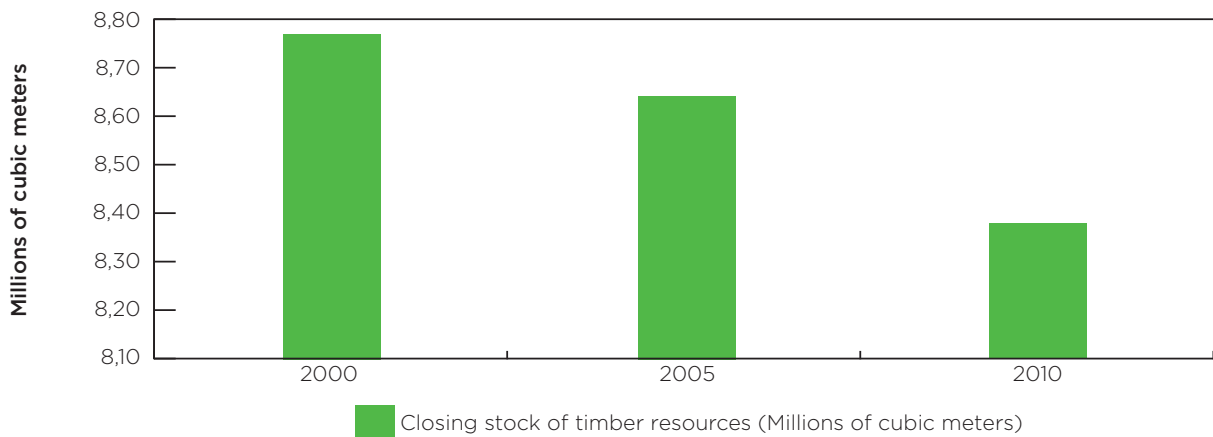
Figure 7 shows the trend of the timber resource supply. One of the causes of this decrease is the land cover change than can be caused by deforestation, for example.

The national statistics department (DANE) reported that for 2012 the total supply of forest products was 8.8 million tons, where timber products (wood corresponded to 77.7% and wood logs 22.3%) represented 99.9 % of total supply. Non-timber products included natural rubber and natural latex products.

For 2012, forestry and timber extraction 3.03% (Approximately 450.000 USD) of revenue from agriculture, livestock, forestry, hunting and fisheries. Also, forestry made up just 0.17% of national GDP.

The total supply of industrial products derived from timber manufacturing for 2012 was 557.511 tons, mainly wood compound boards (73.3%) and timber (25.8%).

Figure 7. Closing Stock of Timber Resources

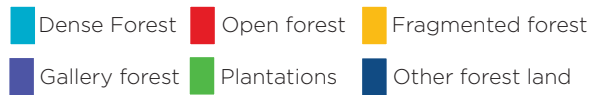


Source: SMBYC.

National water account

In March 2015 representatives from the National Statistical Department (DANE) and the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) came together with international technical experts to plan how to put together a national water account. They developed a temporal and spatial reference framework for the development of the account and a work plan until June 2015. This will give preliminary national results for the water asset account, use-supply tables and emission accounts.

Figure 8. Forest and Other Forest Land Stock



Data source: CORINE Land Cover

6.2| Natural Capital Accounts at Regional Level

Tota Lake watershed

Fieldwork, investigation, data compilation and analysis at Tota Lake Watershed provided the following preliminary results:

- Water use in Tota Lake Watershed for 2012 was 36 millionm³. The main users were the aqueduct from outside the watershed, followed by irrigation districts and fisheries.
- 83% of the water used in the basin is extracted from the lake (17% comes from rivers and streams of the basin).
- The economic sectors with highest productivity per m³ were industry and spring onions.
- Environmental expenditure was 375.000 USD; 59% of this figure was spent on wastewater management.

Figure 9. Tota Lake Watershed Water Use by Sector 2012



- Tota Lake is an important economic and social asset for the municipalities surrounding the watershed. The water supplies approximately 140,000 people with drinking water and economic activities generate more than 250.000 USD annually.
- The agriculture sector—mainly spring onion—is the highest producer within the watershed (around 15.000 USD/ year) and one of the main water users (12,48 Mm³/year).

Next steps in this pilot include presenting more water account results to the Tota Lake Watershed Council and briefing the environmental regional authority CORPOBOYACA to ensure that natural capital accounting remains relevant and that accounts are updated.

Chinchiná River watershed

CORPOCALDAS requested that the WAVES team work with stakeholders involved in the *Chinchiná River Watershed Pact* (CORPOCALDAS, private sector, academia, NGOs, government and civil society) to construct water, forest and ecosystem accounts. The 2015 work plan for this pilot project includes preliminary results of assets for the water account, forest stock and timber assets for the forest account and identifying goods, services and ecosystem units for the ecosystem accounts. Additionally, local workshops will be developed in the watershed to build knowledge of NCA with involved stakeholders.

6.3| 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 allocating resources for WAVES implementation which also includes a technical committee for field work and research purposes. The focal point agency for WAVES in Colombia is DNP (National Planning Department).

The DNP is supporting the WAVES implementation process in the country by actively bringing together all key stakeholders to construct water and forest accounts, and building on earlier efforts to develop environmental accounts by DANE, taking advantage of the technical information provided by IDEAM and in coordination with the other members of the steering and technical committees.

On September 2014, the WAVES Steering Committee ratified the use of indicators derived from natural capital accounts to be included in the set of performance indicators for the country's *Green Growth* strategy—part of Colombia's commitment to gain access to the OECD. As a result, DNP included within Colombia's National Development Plan, *2014–2018: All for a New Country*, the objective to protect and assure sustainable use of natural capital in order to achieve its sustainable development and green growth vision. Within this objective, the National Committee of Environmental Accounting has been presented as the body that will guide the consolidation of natural capital accounts in the country.

In this sense, a national policy document on “Natural Capital Accounting” will be developed and reviewed by WAVES Steering and Technical Committees in order to define the more appropriate tool to formalize NCA in Colombia. This policy document will propose institutional roles in the elaboration of natural capital accounts and will validate the framework and processes that WAVES has installed.

At the regional level, pilot watershed accounts have contributed to environmental regional authorities (CORPOBOYACÁ, CORPOCALDAS, CAR) identifying NCA as a crucial planning tool

for administering their natural resources. They have highlighted the need for capacity building within their institutions to support integrated and sustainable management.

6.4| Communication & Outreach Efforts

Ongoing efforts have been made to reach out to stakeholders, including non-governmental organizations (NGOs), mining and agriculture ministries, research institutes, universities, regional environmental authorities and local experts.

In September 2014, the Seminar “Use of environmental accounts in Colombia” was held in Bogotá, Colombia. During this event, national and international experts presented topics of common interest such as green growth, natural capital accounting, current state of Colombia’s Satellite Environmental Account and the progress of WAVES in forest and water accounts elaboration. The event highlighted the important relationship between natural capital accounts and green growth. It established the use of a common knowledge platform created by national government agencies to effectively monitor both initiatives, and emphasized the need to integrate natural capital accounts with the policy making cycle.

As a first step in formulating an integrated communications strategy, IIED and the World Bank mission conducted a stakeholder workshop in February 2015. The main aim of this workshop was to establish contact with the different local stakeholders including technical committee experts, environmental regional authorities, communication leaders within government institutions, research institutes and academia. This workshop helped to identify the main players and determine current opportunities and threats of natural capital accounting implementation in Colombia. This exercise of bringing together different stakeholders is an important step in the process of prioritizing outreach efforts and identifying the best approach to institutionalizing natural capital into decisionmaking and policymaking. On June 2015, there will be available the communication’s strategy for NCA in Colombia.

7| References

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8 | ANNEX

 **Annex 1. Roles and Competencies of Each Participating Entity in the Colombia WAVES Initiative**

Entity	Competencies	Roles in the project
Ministry of the Environment and Sustainable Development	<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>
National Administrative Department of Statistics (DANE)	<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>	

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 **Annex 1. Roles and Competencies of Each Participating Entity in the Colombia WAVES Initiative** *(continued)*

Entity	Competencies	Roles in the project
<p>National Administrative Department of Statistics (DANE) <i>(continued)</i></p>	<p>Producing strategic statistics</p> <p>Synthesizing national accounts</p> <p>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"> • <i>Guarantee the production, availability and quality of strategic statistical information.</i> • <i>Direct, plan, execute, coordinate, regulate and evaluate the production and dissemination of basic official information.</i> • <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> • <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> • <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> 	<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 the project.</p> <p>Establish the conceptual and technical guidelines for construction of ecosystem account pilots in the framework of environmental accounting.</p>
<p>National Planning Department</p>	<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> <ul style="list-style-type: none"> • Assist DANE in developing environmental accounts for the country. 	<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>

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 **Annex 1. Roles and Competencies of Each Participating Entity in the Colombia WAVES Initiative** *(continued)*

Entity	Competencies	Roles in the project
National Planning Department <i>(continued)</i>	<ul style="list-style-type: none"> • 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. • 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. • 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>The Deputy Department of Sustainable Environmental Development, with its four groups (climate change, risk management, sectors and biodiversity) also provides support for the project.</p>
IDEAM	<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 are:</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"> • Real-time data and climate information, disaster prevention alerts and climate forecasts at different regional scales with diverse applications. • Studies on climate impacts, climate variability and climate change in the territory. The status and vulnerability of watersheds, floods and landslides. • 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). • 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 and about their benefits for quality of life of the population and environmental health. 	<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>

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 **Annex 1. Roles and Competencies of Each Participating Entity in the Colombia WAVES Initiative** *(continued)*

Entity	Competencies	Roles in the project
<p>IDEAM <i>(continued)</i></p>	<ul style="list-style-type: none"> • 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). • It operates the country's network of hydrological and meteorological stations. • It is responsible for consolidation, coordination and production of protocols for the air quality oversight system (24 stations throughout the country). • It guarantees the generation of data on natural resources quality, produced by environmental labs in the country. 	
<p>Comptroller General of the Republic</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 – 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						
											X						
												X					
													X				
													X				
													X				
														X			
															X		
																X	
																	X

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Annex 2. Work Plan and Budget – Version Approved in March 2014 (continued)

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
Promote conservation and sustainable use of ecosystems and their vegetation cover	What are the causes of changes in vegetation cover in Colombia? How can the impact of illegal deforestation be prevented and mitigated?	Pilot implementation exercise for the forest account	Water national account	Preparation of outputs	Final report						X	
				Collection and assessment of basic data	Assessment document					X		
				Valuation of assets and flows	Database					X		
				Validation process	Workshop reports					X		
				Preparation of outputs	Reports					X		
				Conceptualization and pilot exercise for the national forest account (land and ecosystems)								

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Annex 2. Work Plan and Budget – Version Approved in March 2014 (continued)

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				
		How do forest ecosystems and their services affect the well-being of communities? How can the flow of forest ecosystem services be ensured and maintained?														
				Review of existing frameworks and development of a methodological proposal	Methodological document		x	x	x	x						
				Pilot exercise		DANE/IDEAM, MADS, DNP, CGR										
				Collection and assessment of basic data	Database and assessment document					x	x					

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Annex 2. Work Plan and Budget – Version Approved in March 2014 (continued)

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	
				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			
	<p>National Development Plan 2010-2014:</p> <p>In sector planning and environmental land use planning, and in order to protect and restore biodiversity and its ecosystem services, it is imperative to</p>	<p>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</p>	<p>Proposed structure of the patrimony account in the framework of National Accounting</p>	<p>Review of theoretical frameworks for structuring patrimony accounts</p>	<p>Document</p>	<p>DANE/IDEAM, MADS, DNP, CGR</p>	X						

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Annex 2. Work Plan and Budget – Version Approved in March 2014 (continued)

Objective	Public policy priorities	Guiding questions	Main product	Activities	Indicators	Leader/Other stakeholders	Semesters						
							1 st 2013	2 nd 2013	1 st 2014	2 nd 2014	1 st 2015	2 nd 2015	
	“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					

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Annex 2. Work Plan and Budget – Version Approved in March 2014 (continued)

Objective	Public policy priorities	Guiding questions	Main product	Activities	Indicators	Leader/Other stakeholders	Semesters					
							1 st 2013	2 nd 2013	1 st 2014	2 nd 2014	1 st 2015	2 nd 2015
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	DANE/IDEAM, MADS, DNP, CGR			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				

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Annex 2. Work Plan and Budget – Version Approved in March 2014 (continued)

Objective	Public policy priorities	Guiding questions	Main product	Activities	Indicators	Leader/Other stakeholders	Semesters					
							1 st 2013	2 nd 2013	1 st 2014	2 nd 2014	1 st 2015	2 nd 2015
				Present the doc. CONIPES				X				
				Review and organize results of the WAVES initiative, both partial and general, including pilots	Review document			X				
				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				

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Annex 2. Work Plan and Budget – Version Approved in March 2014 (continued)

Objective	Public policy priorities	Guiding questions	Main product	Activities	Indicators	Leader/Other stakeholders	Semesters									
							1 st 2013	2 nd 2013	1 st 2014	2 nd 2014	1 st 2015	2 nd 2015				
				Prepare the final proposal	CONPES document					X						
			Communication of results	Communication strategy	Strategy document	DANE/IDEAM, MADS, DNP, CGR		X								
				Implementation	Reports				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.	Decree 3570 of 2011, Creation of the MADS: Develop agreements between the entities of the administrative sector to share information and improve the efficiency of production, collection, use and availability of information.	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	Institutional organization of the initiative. Communication of initiative results	Proposal for the initiative's institutional organization (functions, roles, activities and products)	Documents, institutional agreements	DNP/IDEAM, MADS, DNP, CGR, DANE		X								

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Annex 2. Work Plan and Budget – Version Approved in March 2014 (continued)

Objective	Public policy priorities	Guiding questions	Main product	Activities	Indicators	Leader/Other stakeholders	Semesters					
							1 st 2013	2 nd 2013	1 st 2014	2 nd 2014	1 st 2015	2 nd 2015
		are the products that should be generated within the initiative and disseminated among decision-makers, the scientific community and the general population?	General coordination	Training	Reports		X	X	X	X	X	X
	Decree 262 of 2004, Restructuring of DANE: Design, plan, lead and execute statistical operations needed by the country within the framework of the National Statistical System											

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Annex 2. Work Plan and Budget – Version Approved in March 2014 (continued)

Objective	Public policy priorities	Guiding questions	Main product	Activities	Indicators	Leader/Other stakeholders	Semesters					
							1 st 2013	2 nd 2013	1 st 2014	2 nd 2014	1 st 2015	2 nd 2015
	<p>Law 99 of 1993 The Colombian Environmental Information System (SIAC)</p> <p>“This is the integrated group of 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>		Ongoing initiative tracking	<p>Tracking of Technical Committee</p> <p>Tracking of Steering Committee</p>	<p>Reports</p> <p>Reports</p>		X	X	X	X	X	X

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 **Annex 2.** Work Plan and Budget – Version Approved in March 2014

Objective	Public policy priorities	Guiding questions	Main product	Activities	Indicators	Leader/Other stakeholders	Semesters					
							1 st 2013	2 nd 2013	1 st 2014	2 nd 2014	1 st 2015	2 nd 2015
				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 April 2014-end-March 2015

Meeting/date	Objective	Participants
WAVES Technical Committee April 29 nd , 2014	<ul style="list-style-type: none"> i. Socialize account's progress until 1st Semester 2014 ii. Present workplan proposal for Phase II of WAVES in Colombia iii. Review main points that will be presented in Steering Committee 	DNP, CGR,MADS,IDEAM, DANE and WAVES Team
WAVES Steering Committee May 2 nd , 2014	<ul style="list-style-type: none"> i. Socialize the accounts' progress of the first semester. ii. Present Phase II Work plan 	DNP, IDEAM,DANE,MADS; WAVES Team
4 th WAVES Partnership Meeting May 14 th -15 th , 2014	Represent Colombia in the event and expose country's progress on NCA, specifically preliminary results of water accounts in Tota and timber asset of the forest account	DNP, DANE, MADS, IDEAM Steering Committee delegates and WAVES National Coordinator
Forest Accounting Global Workshop-4 th WAVES Partnership May 11 th -13 th , 2014	Represent Colombia in the event and expose progress on country's forest account (timber asset and forest flows)	DNP, DANE, MADS, IDEAM Steering Committe Delegates and WAVES National Coordinator
WAVES Meeting May 27 th , 2014	Review the covergent points between Colombia's green growth strategy and natural capital accounting	DNP and WAVES Team
WAVES Technical Committee June 3 rd , 2014	<ul style="list-style-type: none"> i. Socialize main conclusions of 4th WAVES Partnership Meeting ii. Discuss MoU issue iii. Phase II Work Plan Review 	DNP, CGR,MADS,IDEAM, DANE and WAVES Team
World Bank Mission June 24 th -June 27 th	<ul style="list-style-type: none"> i. Approve main elements of WAVES Colombia Work Plan: Technical and Policy ii. Review progress of water and forest accounts iii. Provide technical advise on natural capital accounts elaboration 	Steering and Technical Committee, World Bank and WAVES Team
WAVES Technical Committee August 1 st , 2014	<ul style="list-style-type: none"> i. Socialize main conclusions of World Bank Mission ii. Review of Phase II Work Plan and implementation of activities 	DNP, CGR,MADS,IDEAM, DANE and WAVES Team
Water Account Group Meeting August 14 th , 2014	Review of water account work plan in Colombia	Technical Committee delegates and WAVES Team
Forest Account Group Meeting August 15 th , 2014	Review of forest account work plan in Colombia	Technical Committee delegates and WAVES Team

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 **Annex 3. Meetings Held from April 2014–end-March 2015** *(continued)*

Meeting/date	Objective	Participants
Follow up meeting – VC September 2 nd , 2014	Review of the updated Work Plan	WAVES Team and World Bank
CORPOCALDAS meeting September 3 rd , 2014	Discuss natural capital accounts elaboration in Chinchiná River Watershed	CORPOCALDAS Director and WAVES Team
Forest Account Group Meeting September 11 th , 2014	Presentation of the preliminary forest account and forest account's work plan	Technical Committee delegates and WAVES Team
Seminar “Uses of environmental accounts in Colombia” September 15 th , 2014	<ul style="list-style-type: none"> i. Give training on NCA to diverse stakeholders ii. Involve new stakeholders in the initiative iii. Identify convergence between NCA and Green Growth Strategy 	Steering and Technical Committee delegates, World Bank, Academia, Research Institutes and WAVES Team
World Bank Mission September 16 th –19 th , 2014	<ul style="list-style-type: none"> i. Provide technical advise on the accounts progress ii. Orient the path in order to include NCA within the New National Development Plan 	Steering and Technical Committee, World Bank and WAVES Team
WAVES Steering and Technical Committee September 18 th , 2014	<ul style="list-style-type: none"> i. Review Phase II work plan ii. Identify next steps within the New National Development Plan 	Steering and Technical Committee, World Bank and WAVES Team
SECO and IFC Meeting September 19 th , 2014	<ul style="list-style-type: none"> i. Review the current WAVES Work in Colombia with IFC in order to identify possible NCA opportunities with Private Sector ii. Follow up with SECO regarding next steps of WAVES 	World Bank, WAVES Team, SECO, IFC
CAR Meeting September 22 nd , 2014	Integration of Suarez Watershed into WAVES Work Plan	CAR Director and WAVES Team
Forest Account Group Meeting September 23 rd , 2014	Forest account workshop and scope definition	Technical committee delegates and WAVES Team
Forest Account Group Meeting October 2 nd , 2014	Data harmonization between CORINE Land Cover and Forest Carbon Monitoring Systems methodology	Technical Committee delegates and WAVES Team
Forest Account Group Meeting October 10 th , 2014	Land cover change matrix expert dissertation	Technical Committee delegates and WAVES Team

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Annex 3. Meetings Held from April 2014-end-March 2015 *(continued)*

Meeting/date	Objective	Participants
Water account Meeting October 15 th , 2014	Contextualization of WAVES' work in water accounts	Technical Committee delegates and WAVES Team
Work plan Follow up Meeting - VC October 17 th , 2014	i) Review progress of forest and water accounts in the country	World Bank and WAVES Team
WAVES Technical Committee November 5 th , 2014	Identify structure of Forest Account: Conceptual Component and National Forest Account	DNP, CGR, MADS, IDEAM, DANE and WAVES Team
Water Technical World Bank Mission November 11 th -14 th	i. Review of Water National Study ii. Identify synergies between Water National Study and Water Account elaboration iii. Definition of National Water Account next steps	DNP, CGR, MADS, IDEAM, DANE, World Bank and WAVES Team
Forest Account progress meeting - VC November 21 th , 2014	i. Progress on forest account was reviewed ii. Discuss comments regarding the structure of the national forest account	World Bank and WAVES Team
Forest Technical World Bank Mission December 10 th -11 th , 2014	i. Review of current state of the national forest account ii. Define the final structure of the conceptual report iii. Date definition of deliverables regarding national forest account (Land asset and timber asset)	DNP, CGR, MADS, IDEAM, DANE, World Bank and WAVES Team
Tota Civil Society Meeting January 14 th , 2015	i. Socialize Tota Lake water accounts to interested civil society	NGO, World Bank and WAVES Team
CAR Meeting January 20 nd , 2015	i. Review natural capital accounts information request ii. Identify next steps in order to officialize work with the environmental regional authority	CAR delegates and WAVES Team
Communication's Mission Kick off meeting February 2 nd , 2015	i. Review mission's Agenda ii. Share preliminary results of the Natural capital accounts in Colombia	IIED, World Bank and WAVES Team
Stakeholder Workshop February 3 rd , 2015	i. Socialize WAVES Initiative in Colombia ii. Identify levels of awareness between diverse stakeholders regarding NCA iii. Gather perceptions related with threats and opportunities of natural capital accounting in Colombia	CGR, MADS, IDEAM, DANE delegates, academia, research institutes, environmental regional authorities, IIED, World Bank and WAVES Team

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 **Annex 3. Meetings Held from April 2014-end-March 2015** *(continued)*

Meeting/date	Objective	Participants
One-on-one Senior Officials Meetings February 4 th , 2015	Share the communications strategy that will be developed by WAVES initiative	DNP, MADS, DANE and IDEAM Steering Committee delegates; IIED, World Bank and WAVES National Coordinator
SECO Meeting February 4 th , 2015	Follow up of the WAVES Colombia Work Plan with SECO	SECO, IIED, World Bank and WAVES Team
PR Meeting with institutions February 4 th , 2015	Identify communication's strategy from WAVES' Institutions	PR WAVES Institutions, IIED, World Bank; WAVES Team
CORPOCALDAS Meeting February 5 th , 2015	Meet with diverse stakeholders from Chinchiná River watershed	DNP, MADS, DANE and IDEAM Steering Committee delegates; IIED, World Bank and WAVES Team
NGO Meeting February 6 th , 2015	Share WAVES initiative main objectives with NGOs	WWF, CI, IIED, World Bank, WAVES team
Follow up meeting - VC February 19 th , 2015	<ul style="list-style-type: none"> i. Review of progress and next activities forest and water accounts at national level ii. Review of progress and next activities on pilot projects 	World Bank and WAVES Team
WAVES Ecosystem Workshop February 23 th to 27 th , 2015	<ul style="list-style-type: none"> i. Receive training on ecosystem accounts ii. Learn experiences from other countries 	DANE and IDEAM delegates, WAVES Team delegates
Chinchiná River Watershed Visit February 25 th -27 th , 2015	<ul style="list-style-type: none"> i. Conduct a capacity building activity on environmental-economic accounts and their relationship with Natural Capital Accounting; ii. Discuss the proposed workplan for the CHinchina pilot basin; iii. Review existing databases managed by CORPOCALDAS iv. Identify key technical actors for the production of the water, forests and ecosystems accounts. 	CORPOCALDAS, Pactos por la Cuenca, WAVES Team
CAR Meeting March 2 nd , 2015	<ul style="list-style-type: none"> i. Definition of the tool to be used in order to share information 	CAR delegates and WAVES Team
Water account concept Workshop March 16 th and 17 th , 2015	<ul style="list-style-type: none"> i. Elaborate the conceptual support and methodological scope of national water account by IDEAM and DANE 	DANE, IDEAM delegates and WAVES Team

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 **Annex 3. Meetings Held from April 2014-end-March 2015** (continued)

Meeting/date	Objective	Participants
Water Technical World Bank Visit March 18 th -20 th , 2015	<ul style="list-style-type: none"> i. Provide technical advise on the elaboration of water accounts for the asset, use-supply and emissions component ii. Review the technical workshops methodology that will be developed on Chinchiná River Watershed 	DANE, IDEAM delegates and WAVES Team
WAVES Technical Committee March 19 th , 2015	<ul style="list-style-type: none"> i. Review progress of the initiative's work plan ii. Identify next steps to follow 	DNP, CGR, MADS, IDEAM, DANE and WAVES Team
Chinchiná River Watershed Visit March 24 th -27 th , 2015	Develop technical workshops with diverse stakeholders in order to elaborate natural capital accounts	CORPOCALDAS, Pactos por la Cuenca, WAVES Team
Water Account Group Meeting March 27 th , 2015	<ul style="list-style-type: none"> i. Review work plan by component: Asset, use-supply and emissions 	DANE, IDEAM Delegates and WAVES Team
First Workshop on policy document April 10 th , 2015	<ul style="list-style-type: none"> i. Policy document scope ii. Discussion on the adequate policy tool in order to institutionalize NCA in Colombia iii. Training on international background of NCA regulation 	Technical Committee and WAVES Team

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)
PDO 1. To implement natural capital accounting in partner developing and developed countries							
Outcome Indicators:							
a. Country with a commitment to institutionalize natural capital accounting based on lessons learned from the WAVES program	6 staff in Stats Office			Achieved: 6 staff in State Office			
Intermediate Outcomes Indicators							
1.1 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			<ul style="list-style-type: none"> Preliminary national forest accounts (Timber and land) Water asset accounts for 1st pilot site 	<ul style="list-style-type: none"> National and regional forest account Water preliminary accounts for 2nd and 3rd pilot sites Preliminary national water asset account 	<ul style="list-style-type: none"> Updated national water asset accounts; monetary units of national forest account 	<ul style="list-style-type: none"> Updated accounts and others to TBD

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 **Annex 4. Monitoring and Evaluation Framework (continued)**

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)	
1.3 Country with flow accounts for selected natural resources	National water, energy accounts		Updated accounts	<ul style="list-style-type: none"> Water flow accounts at national level Water flow accounts for 1 pilot watershed Country up-dated forest products flow 	<p>Achieved:</p> <ul style="list-style-type: none"> National forest account (forest stock of land asset; timber asset) Water and forests preliminary accounts for 2nd and 3rd pilot sites Preliminary national water asset account 	<p>Target:</p> <ul style="list-style-type: none"> Updated water and forest flow accounts 	<p>Target:</p> <ul style="list-style-type: none"> Updated water and forest flow accounts 	<p>Target:</p> <ul style="list-style-type: none"> Updated existing flow accounts

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 Annex 4. Monitoring and Evaluation Framework (continued)

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	Yr 4 Jun-16	Yr 5 Jun-17 (proposed)
1.4 Country with experimental ecosystem accounts				Preliminary results for 1 of 3 pilot watershed sites	<p>Target:</p> <ul style="list-style-type: none"> Preliminary results of ecosystem account at 2nd and 3rd pilot watershed pilot sites <p>Achieved:</p> <ul style="list-style-type: none"> Preliminary results of ecosystem accounts at 1st pilot 	<p>Target:</p> <ul style="list-style-type: none"> Final report on 3 pilot watershed sites 	<p>Target:</p> <ul style="list-style-type: none"> Scale up pilot watershed accts to regional/national level TBD
1.5 Country with macroeconomic indicators based on NCA	None					<p>Target:</p> <ul style="list-style-type: none"> Develop preliminary macroeconomic indicators 	<p>Target:</p> <ul style="list-style-type: none"> Update macroeconomic indicators

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 **Annex 4. Monitoring and Evaluation Framework** (continued)

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)
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	<p>Target:</p> <ul style="list-style-type: none"> • Training continues through in-country, regional and other training workshops, and by working with int'l experts on the accts <p>Achieved:</p> <ul style="list-style-type: none"> • Technical visits in-country with water and forest account international experts • Training continues through in-country and regional workshops 	<p>Target:</p> <ul style="list-style-type: none"> • Training continues through in-country, regional and other training workshops, and by working with int'l experts on the accts 	<p>Target:</p> <ul style="list-style-type: none"> • Training continues in all countries through in-country, regional and other training workshops, and by working with int'l experts on the accts

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Annex 4. Monitoring and Evaluation Framework (continued)

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	Yr 4 Jun-16	Yr 5 Jun-17 (proposed)	
PDO 2. To incorporate natural capital accounting in policy analysis and development planning in core implementing countries								
Outcome Indicators:								
a. NCA informs policy dialogue on growth, environment and poverty reduction, evidenced by citing NCA or using NCA indicators and data in, development plans, sector strategies and plans, executive orders, legislative documents, and the broader policy analysis literature (may include World Bank ESW, AAA and project formulation documents)	None			CONPES (Environmental Management Plan for 1 st pilot watershed) calls for NCA as management tool	<p>Target:</p> <ul style="list-style-type: none"> Policy document call for NCA as management tool (National or regional) Other TBD with new government <p>Achieved:</p> <ul style="list-style-type: none"> National Committee of Environmental Accounts as a goal for achieving Green Growth within the Bases of the National Development Plan 2014–2018 	<p>Target:</p> <ul style="list-style-type: none"> NCA informs Forest Strategic Plan, and policy instruments for River Basin mgmt. 		

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 **Annex 4. Monitoring and Evaluation Framework (continued)**

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	Yr 4 Jun-16	Yr 5 jun-17 (proposed)	
Intermediate Outcomes Indicators								
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 st pilot	<p>Target:</p> <ul style="list-style-type: none"> • Policy note and tech report on 2nd and 3rd watershed pilots <p>Achieved:</p> <ul style="list-style-type: none"> • Forest National Account Tech Report • Forest National Account Policy Brief • 1st pilot Policy Brief • NCA informing PES Note 	<p>Target:</p> <ul style="list-style-type: none"> • Policy note and technical report on watershed accts and method for scaling up to regional/national level; 2nd phase policy notes on forest accounts 	<p>Target:</p> <ul style="list-style-type: none"> • Technical report, policy notes on watershed accounts for the country 	
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;	<p>Target:</p> <ul style="list-style-type: none"> • Forest accounting workshop for 30+ people; 			

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Annex 4. Monitoring and Evaluation Framework (continued)

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	Yr 4 Jun-16	Yr 5 jun-17 (proposed)	
					<ul style="list-style-type: none"> Water accounting workshop for 30+ people; 1-week ecosystem accounting workshop for 30+ people <p>Achieved:</p> <ul style="list-style-type: none"> “Use of environmental accounts in Colombia” Seminar gathered 40+ people from different sectors Attendance of Technical Committee representatives to Water accounting workshop Attendance of Technical and Steering Committee representatives to ecosystem accounting workshop 		<p>Target:</p> <ul style="list-style-type: none"> Regional and national training workshops, TBD 	<p>Target:</p> <ul style="list-style-type: none"> Regional and national training workshops, support from international experts

Wealth Accounting and the Valuation of Ecosystem Services

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

www.wavespartnership.org