

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

**COLOMBIA**

**ADAPTATION TO CLIMATE IMPACTS IN WATER REGULATION AND SUPPLY  
FOR THE AREA OF CHINGAZA–SUMAPAZ–GUERRERO  
(CO-G1002)**

**PROPOSAL FOR NON-REIMBURSABLE INVESTMENT FINANCING**

This document was prepared by: Alfred Grünwaldt (INE/CCS), co-team leader; Fernando Miralles-Willhem (INE/WSA), co-team-leader; team members: Maricarmen Esquivel (INE/CCS), Alejandro Deeb (INE/CCS), Ana Rios (INE/CCS), Roberto Esmeral (CCS/CCO), Miguel Orellana (FMP/CCO), Bernardita Saez (LEG/SGO) and Juan Gomez (INE/CCS).

In accordance with the Access to Information Policy, this document is being released to the public and distributed to the Bank's Board of Executive Directors simultaneously. This document has not been approved by the Board. Should the Board approve the document with amendments, a revised version will be made available to the public, thus superseding and replacing the original version.

## CONTENT

### PROJECT SUMMARY

|      |  |    |
|------|--|----|
| I.   | DESCRIPTION AND RESULTS MONITORING.....              | 2  |
| A.   | Background, Problem Addressed, Justification.....    | 2  |
| B.   | Objectives, Components and Costs .....               | 7  |
| C.   | Key Results Indicators .....                         | 8  |
| II.  | FINANCING STRUCTURE AND MAIN RISKS .....             | 8  |
| A.   | Financing Instruments .....                          | 8  |
| B.   | Environmental and Social Safeguard Risks.....        | 9  |
| C.   | Fiduciary Risk.....                                  | 10 |
| D.   | Other Key Issues and Risks .....                     | 10 |
| III. | IMPLEMENTATION AND MANAGEMENT PLAN .....             | 11 |
| A.   | Summary of Implementation Arrangements .....         | 11 |
| B.   | Summary of Arrangements for Monitoring Results ..... | 15 |

| ANNEXES   |  |
|-----------|--|
| ANNEX I   | Development Effectiveness Matrix (Summary) |
| ANNEX II  | Results Framework                          |
| ANNEX III | Fiduciary Arrangements                     |

| ELECTRONIC LINKS   |   |
|--|---|
| <b>REQUIRED</b>  |   |
| 1. POA   | <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024755">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024755</a> |
| 2. Monitoring & Evaluation Arrangements                  | <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024786">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024786</a> |
| 3. Procurement Plan                                      | <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024762">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024762</a> |
| 4. Environmental and Social Management Report            | <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024767">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024767</a> |
| <b>OPTIONAL</b>  |   |
| 1. Detailed project products and activities by component | <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024746">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024746</a> |
| 2. Economic analysis of indicative adaptation options    | <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024775">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024775</a> |
| 3. Selection of project priority areas                   | <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024781">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38024781</a> |
| 4. Household Survey                                      | <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38644098">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38644098</a> |
| 5. Public Consultation Process Report                    | <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37443525">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37443525</a> |
| 6. Safeguard Policy Filter and Screening Forms           | <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38700864">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=38700864</a> |

## ACRONYMS

|             |  |
|-------------|--|
| AWP         | Annual Work Plan   |
| CAR         | Regional Autonomous Corporation of Cundinamarca (Corporación Autónoma Regional de Cundinamarca)                              |
| CARS        | Colombian Regional Autonomous Corporations (Corporaciones Autónomas Regionales de Colombia)                                  |
| CI          | Conservation International Foundation  |
| CI-C        | Conservation International Foundation Colombia   |
| CONPES      | National Council on Economic and Social Policy (Consejo Nacional de Política Económica y Social).                            |
| CORPOGUAVIO | Regional Autonomous Corporation of Guavio (Corporación Autónoma Regional del Guavio)   |
| DANE        | National Administrative Department of Statistics (Departamento Administrativo Nacional de Estadística)                       |
| EAAB        | Bogota Water and Sewerage Utility (Empresa de Acueducto y Alcantarillado de Bogotá)  |
| GEF         | Global Environment Facility  |
| IDB         | Inter-American Development Bank  |
| GCI-9       | Report on the Ninth General Increase in the Resources of the IDB   |
| IDEAM       | Institute of Hydrology, Meteorology and Environmental Studies (Instituto de Hidrología, Meteorología y Estudios Ambientales) |
| INAP        | Integrated National Adaptation Project   |
| MADS        | Ministry of Environment and Sustainable Development (Ministerio de Ambiente y Desarrollo Sostenible)                         |
| masl        | meters above sea level   |
| MEP         | Multi-year Execution Plan  |
| MVCT        | Ministry of Housing, Cities and Land (Ministerio de Vivienda Ciudad y Territorio de Colombia)                                |
| NPC         | National Project Coordinator   |
| PCU         | Project Coordination Unit  |
| PND         | National Development Plan (Plan Nacional de Desarrollo)  |
| POM         | Project Operational Manual   |
| POMCA       | Management and Watershed Ordinance Plans (Plan de Manejo y Ordenamiento de una Cuenca)                                       |
| POT         | Territorial Ordinance Plans (Plan de Ordenamiento Territorial)   |
| PRICC       | Regional Comprehensive Plan on Climate Change (Plan Regional Integral de Cambio Climático Región Capital – Bogotá)           |
| PSC         | Project Steering Committee   |
| SCCF        | Special Climate Change Fund  |
| SDA         | District-level Secretariat of Environment of Bogota (Secretaría Distrital de Ambiente de Bogotá)                             |
| SNC         | Second National Communication  |
| UNFCCC      | United Nations Framework Convention on Climate Change  |

**PROJECT SUMMARY**  
**COLOMBIA**  
**ADAPTATION TO CLIMATE IMPACTS IN WATER REGULATION AND SUPPLY FOR THE AREA OF**  
**CHINGAZA–SUMAPAZ–GUERRERO**  
**CO-G1002**

| Financial Terms and Conditions  |                              |                              |                                 |                                     |                                    |  |
|---|------------------------------|------------------------------|---------------------------------|-------------------------------------|------------------------------------|--|
| Beneficiary: Republic of Colombia   |                              |                              |                                 |                                     |                                    |  |
| Executing Agency: Ministry of Environment and Sustainable Development   |                              |                              |                                 |                                     |                                    |  |
| Disbursement Period   |                              |                              |                                 | 64 months                           |                                    |  |
| Execution Period  |                              |                              |                                 | 60 months                           |                                    |  |
| Currency  |                              |                              |                                 | US Dollar                           |                                    |  |
| Source of Financing   |                              |                              |                                 | Amount                              |                                    |  |
| IDB Special Climate Change Fund*  |                              |                              |                                 | US\$4,215,750                       |                                    |  |
| Local Counterpart   |                              |                              |                                 | US\$11,409,000                      |                                    |  |
| Associated Funds  |                              |                              |                                 | US\$12,300,000                      |                                    |  |
| TOTAL   |                              |                              |                                 | US\$27,924,750                      |                                    |  |
| Project at a Glance   |                              |                              |                                 |                                     |                                    |  |
| <b>Project Objective/Description:</b> Strengthen the hydrological buffering and regulation capacity of the upper watershed of Chingaza–Sumapaz–Guerrero, which supplies drinking water to the Bogotá metropolitan area and its adjoining rural municipalities. The proposed Special Climate Change Fund (SCCF) intervention will demonstrate how to incorporate climate change considerations into watershed planning and management programs associated with high mountain ecosystems. More specifically, it will support adaptation measures for the establishment of sustainable water supply systems for Bogotá and the surrounding municipalities in the long term.  |                              |                              |                                 |                                     |                                    |  |
| <b>Special Conditions prior to the first disbursement:</b> Executing Agency must provide, to the Bank’s satisfaction, evidence of the fulfilment of the following conditions: (i) approval of the Project Operational Manual (POM), based on the terms agreed upon with the Bank (¶3.11); (ii) execution of an implementation agreement between the Executing Agency and Conservation International Foundation Colombia (CI-C), based on the terms previously agreed upon with the Bank (¶3.2); (iii) creation of the Project Coordination Unit (PCU) within CI-C, and the designation of its Program Coordinator (¶3.11); (iv) execution of cooperation agreements between the Executing Agency and the following participating entities of the project: Bogotá Water and Sewerage Utility (EAAB), National Institute of Hydrology and Meteorology (IDEAM), Regional Autonomous Corporation of Guavio (CORPOGUAVIO) and the Regional Autonomous Corporation of Cundinamarca (CAR) (¶3.8); (v) designation of the members of the Project Steering Committee (PSC) at the Ministry of Environment and Sustainable Development (MADS), EAAB, IDEAM, CORPOGUAVIO and CAR (¶3.3); and (vi) completion of an environmental and social analysis (¶2.2). |                              |                              |                                 |                                     |                                    |  |
| Exceptions to Bank policies: None   |                              |                              |                                 |                                     |                                    |  |
| Project qualifies for:  | SEQ <input type="checkbox"/> | PTI <input type="checkbox"/> | Sector <input type="checkbox"/> | Geographic <input type="checkbox"/> | Headcount <input type="checkbox"/> |  |

\* These resources will be available subject to the approval of this operation by the Board of Executive Directors, and the signature of the “Financial Procedures Agreement” to be entered into between the International Bank for Reconstruction and Development (the “World Bank”), as Trustee of the SCCF, and the Bank as administrator of the IDB/SCCF. The SCCF is one of the three funds operated/administered by the Global Environment Facility (GEF). It follows the GEF’s operational policies and procedures.

## I. DESCRIPTION AND RESULTS MONITORING

### A. Background, Problem Addressed, Justification

- 1.1 **Background.** The Second National Communication (SNC) submitted by Colombia to the United Nations Framework Convention on Climate Change (UNFCCC) indicates that between 2011 and 2040, 70% of the high mountain zone in the country's territory will be affected by the potentially strong or very strong impacts of climate change, especially increases in temperature and consequently the retreat of existing glaciers and a net loss in water storage, in both mountain wetlands and glaciers. The SNC classifies high mountain ecosystems and wetlands as extremely vulnerable and recommends taking urgent actions dealing with: (i) further research; (ii) improvements in land use planning; (iii) water resources vulnerability reduction; (iv) increasing the adaptation capacity of vulnerable communities; and (v) inter-institutional coordination of policies and programs.
- 1.2 The Chingaza–Sumapaz–Guerrero Conservation Corridor (the Corridor), designed and proposed by the Bogota Water and Sewerage Utility (EAAB –*Empresa de Acueducto y Alcantarillado de Bogotá*,) and Conservation International (CI) in 2011, is located in the high Andean zone of the Eastern Cordillera in Colombia's central-eastern region, where approximately 20% of the country's population lives (see Table 1).

**Table 1. Paramo Complex characteristics in the Corridor**

|                                   | Area (ha) | Altitude (masl) | Provision of water    | Population served              |
|-----------------------------------|-----------|-----------------|-----------------------|--------------------------------|
| Guerrero Paramo Complex           | 39,240    | 3,200 - 3780    | 2.3 m <sup>3</sup> /s | 1,500,000 approx. <sup>2</sup> |
| Chingaza Paramo Complex           | 64,500    | 3,150 – 3,980   | 14 m <sup>3</sup> /s  | 5,600,000 approx.              |
| Cruz Verde-Sumapaz Paramo Complex | 266,750   | 3,250 – 4,230   | N/A                   | N/A                            |

- 1.3 The Corridor, with an area of 557,000 hectares, contains extensive paramos that feed 14 strategic watersheds in terms of water supply for the city of Bogota and its adjacent municipalities (about 69% of water supplied to the capital comes from the Corridor, EAAB, 2010). This area has been selected for the implementation of a large program to protect, preserve and restore high water yielding areas for the benefit of water supply systems.<sup>3</sup> With MASD's leadership and UNEP's technical support, regional and local organizations have created a platform to share information among key stakeholders, elicit good practices and develop programs to address the changes brought by global warming, under the Regional Comprehensive Plan on Climate Change (PRICC) initiative. Moreover, the proposed activities directly contribute, under CAR's current strategic action plan (2012-2023)<sup>4</sup>, to achieve stated targets in deforestation, revegetation and implementation of adaptation measures, providing continuity and sustainability to GEF funded initiatives.

<sup>2</sup> Residents in northern and northwestern areas of Bogota, D.C. (Morales et al. 2007).

<sup>3</sup> The Program for the Conservation and Restoration of Mountain Wetlands in the Area of Chingaza and Sumapaz, EAAB US\$60 million.

<sup>4</sup> <http://www.car.gov.co/pgar/pgar%202012%202023.html>

- 1.4 There are nearly 8 million residents<sup>5</sup> in the Corridor, the large majority of whom (96%) live in the Bogota, D.C. metropolitan area. In 2008, household water demand in the 20 municipalities associated with the Corridor totaled 545 million cubic meters (Mm<sup>3</sup>), 98% of which is consumed by the urban population and only 2% by the rural population. In general, the bulk of urban water demand is concentrated in the city of Bogota, while urban household demand in the remaining municipalities only equals 2% of the total. (Unicef–Ecoversa, 2010).
- 1.5 Cattle raising and agriculture are the main sources of income of the Corridor’s rural population; 37% of the land is used for the development of low-efficiency, large-scale cattle ranching, and 6% of the land is used for corn (maize) beans and several fruits. The large-scale potato production in the higher reaches of the mountains often removes natural paramo vegetation. A large portion of the Corridor’s land is used for protection (46%) throughout secured areas with different management categories. 11% of the remaining land is used for activities such as mining, urban planning, vacation homes and greenhouses, the latter mainly for flower production (Sguerra et al. 2011). Peasant subsistence economy systems are prevalent in over 80% of the Corridor’s municipalities and are characterized by small-scale parcels (less than 10 ha) used for subsistence.
- 1.6 In the Corridor area, different entities are active, chiefly those in charge of land-use planning, development, environmental and natural resources management, including the Departments of Cundinamarca and Meta, the Bogota Capital District and 19 municipalities.
- 1.7 **Problem addressed and Justification.** Tropical high mountain regions, such as the ones found in the Corridor, and particularly paramos, are known for their excellent water regulation capacity that transforms the erratic precipitation regime into a constant base flow in rivers (Buytaert et al., 2006). The high mountain ranges exhibit an exceptionally high runoff ratio (fraction of the precipitation that is converted into runoff), ranging from 0.54 in the Simien Mountains (Liu et al., 2008), up to 0.73 in Ecuador and Colombia (Buytaert et al., 2007), as compared with “normal values” in the range of 0.40 to 0.50. The most remarkable feature or ecosystem service of many tropical moorland regions, however, is their high water regulation capacity. Peak flow over base flow ratios can be as low as 5 for natural paramo catchments (Buytaert et al., 2004). These hydrological processes are, however, vulnerable to perturbation. Being headwater catchments, they lack the buffering role of groundwater and rely entirely on meteorological water.
- 1.8 Climate change is an important factor that affects the balance of high mountain regions and their hydrological regime as well as the services provided by these ecosystems (CI, INAP, 2011). In Chingaza, for instance, increases in temperature have been registered<sup>6</sup> and consequently the precipitation regime has shown an intensification of rain events, as well as longer dry periods (number of consecutive

---

<sup>5</sup> 2005 population census National Administrative Department of Statistics (*Departamento Administrativo Nacional de Estadística*, DANE).

<sup>6</sup> National University of Colombia, Geography Department. “*La variabilidad climática y el cambio climático y su efecto en los recursos hídricos del sistema Chingaza*”, EAAB, December 2006.

dry days).<sup>7</sup> Moreover, the western side of the Corridor has been affected by a decrease in precipitation, which is forecasted to reach up to 30% by the end of the century (IDEAM 2010). Land use and land cover (vegetation) also influence the hydrologic regime through water interception, infiltration, surface and subsurface runoff and soil erosion.<sup>8</sup> These two factors have changed dramatically in the area. In the period between 1986 and 2001, 24.4% of humid forest was lost, as well as 2.3% of paramo (26,680 ha and 2,538 ha respectively), while reforestation resulted in 119 ha of forest plantation and 125 ha of forest restored (Humboldt Institute 2000, IDEAM 2004). According to CI-EAAB (2011) 37% of the Corridor is used for extensive and low productivity cattle ranching and 6% is dedicated to agriculture. Agriculture production is described as small scale subsistence in more than 80% of the municipalities, although pockets of industrial agro-production are localized in the “*Sabana*” and in the Teusaca River Valley.

- 1.9 The magnitude of the interventions needed in the Corridor to attempt to address this situation have been estimated (CI-EAAB 2011)<sup>9</sup> as follows: (i) preservation of 70,743 ha in existing forested areas; (ii) restoration of 400 ha in forested areas; (iii) change in land use from areas under mixed use to preservation (48,000 ha) and to restoration (66,550 ha); and (iv) improvement of land use practices in 109,150 ha. This operation is a pilot project that will focus on 0.4% restoration (250 ha), improved production practices (300 ha –0.3% of potential area) and reforestation (300 ha), activities that help maintain current water retention and regulation services provided by high mountain ecosystems.
- 1.10 Despite this information, a remarkable knowledge gap exists on how climate change will specifically impact the forest and the hydrological processes. Moreover, substantial uncertainty also remains in climate projections, due in part to the steep nature of high mountains and the corresponding high local variability, as well as constraints in atmospheric circulation models and data limitations. Responding to this information challenge, improved Geographical Information System data will be collected and complemented with high-resolution climate scenarios. This will facilitate the development of vulnerability and impact assessments at the watershed-level (Component 1) that will serve as input for land use and watershed planning tools (e.g. Management and Watershed Ordinance Plans (POMCA) and Territorial Ordinance Plans (POT)) and management studies, which in turn will feed land use guides to be enacted according to national and regional regulations. The project activities will provide the basis for these guidelines and will abide by them once they become effective.
- 1.11 The project logic is that land use change can be guided to increase the climate resilience of the hydrologic response of high mountain watersheds. The proposed activities follow the positive experiences of the Integrated National Adaptation

---

<sup>7</sup> IDEAM, 2010 “Colombia Second National Communication to the UNFCCC”, IDEAM, June, 2010.

<sup>8</sup> Bruijnzeed, L.A. 2004; “Hydrological functions of tropical forests: not seeing the soil for the trees?” Agriculture, Ecosystems and Environment, Vol. 104; 185-228.

<sup>9</sup> Conservation International, with the support of EAAB; “Corredor de Conservación Chingaza-Sumapaz-Guerrero; Resultados del Diseño y Lineamientos de Acción” CI, 2011.



Project (INAP) –a Global Environment Facility (GEF) funded and World Bank implemented initiative, and the well-known expected consequence of the increase in forest cover in the regulation of the water cycle.<sup>10</sup> This project will provide guidance and lessons learned to the upcoming investment Program for the Conservation of Mountain Wetlands in the Area of Chingaza and Sumapaz (EAAB 2013).

- 1.12 To implement adaptation measures with the community, lessons learned from previous interventions will be applied. For instance, Valdivia et al. (2010) indicates that participatory research and activities where knowledge is shared with local population, promote enhancements in adaptive capacity and resilience to climate change among Andean communities. The implementation of the Integrated National Adaptation Project (INAP), which included interventions in the area of interest, reports that: (i) communities that are aware of climate change potential consequences are receptive to adaptation programs; and (ii) adaptation measures, including management of protected areas, land cover restoration, watershed management and improved farming systems have positive impacts that have been associated with benefit-cost ratios of up to 1.93.<sup>11</sup>
- 1.13 This investment operation, financed by the Special Climate Change Fund (SCCF) –one of the three GEF trust funds that finance adaptation actions, aims at reducing the mentioned knowledge gap and implementing pilot activities that would provide the basis for a broader intervention in the area.<sup>12</sup> To achieve this purpose, the project focuses on: (i) improving the knowledge and understanding of the impacts of climate variability and change on the water regulation supply and capacity of high mountain ecosystems, through the generation and dissemination of strategic climate-related information to be used by the Corridor’s interest groups and its incorporation in land use and natural resources planning; and, (ii) implementing adaptation measures to mitigate the impacts of climate change on water supply and regulating the hydrological functions of the High-Andean Orobiome focusing on the Corridor’s wetlands and high mountain ecosystems.<sup>13</sup>
- 1.14 These ecosystems are the main source of drinking water for the Bogota metropolitan area and its neighboring rural communities. Likewise, the capacities of local communities in the area will be strengthened in order to address the current and anticipated effects of climate variability with actions aimed at ecological restoration and improvement of their productive activities. Such actions will include the implementation of adaptation measures that will help improve family income, while

---

<sup>10</sup> Comprehensive reviews specific to tropical and cloud forest are found in Bruijnzeed, 2004 already cited and in Mulligan and Burke, 2005, “Global cloud forest and environmental change in a hydrological context” DFID FRP Project ZF0216.

<sup>11</sup> Information from the INAP “Implementation Completion and Results Report” (World Bank, 2012).

<sup>12</sup> See footnote 1.

<sup>13</sup> This approach builds on the INAP, which takes an ecosystem-based approach (EbA) to climate change adaptation. INAP’s components include dissemination of climate change information and the adoption of adaptation measures in high mountain ecosystems. Lessons learned from INAP’s implementation will be considered in the project, for instance: (i) communities aware of climate change impacts are receptive to adaptation measures; and (ii) dissemination of information is crucial for successful adaptation programs.

correcting or optimizing the ecosystems response capacity of natural systems that regulate regional and local water supply. In addition, the project will help incorporate adaptation measures in plans, programs and projects related to the planning and management of watersheds, as well as strengthen the agricultural and livestock sectors' adaptation capacity to address the effects of climate change.

- 1.15 Specifically, the project will focus its efforts on micro-watersheds in priority areas (hydrological units) within the Corridor's three most important paramo complexes. The methodology used to select priority areas is described in the Optional Electronic Link ([OEL](#)) 3. The priority hydrological units of analysis are located in the rural areas of Bogota, and in five neighboring municipalities: Tausa, Cogua, Sesquilé, Guatavita and Guasca in the Department of Cundinamarca.

**Table 2. Selected Hydrological Units<sup>14</sup>**

| Paramo Complex | Municipalities         | Hydrological unit    | Micro-watershed              |
|----------------|------------------------|----------------------|------------------------------|
| Guerrero       | Tausa, Cogua           | Río Cuevas Unit      | Río Guandoque                |
| Chingaza       | Sesquilé and Guatavita | Sisga Reservoir Unit | Río San Francisco/ Chuscales |
|                | Guasca                 | Río Siecha Unit      | Río Chipatá                  |
| Sumapaz        | Bogota, D.C.           | Río Chisacá Unit     | Río Chisacá                  |

- 1.16 **Alignment with the Government's strategy for the region.** The 2010–2014 National Development Plan (PND –*Plan Nacional de Desarrollo*) refers to the importance of conserving water resources, adequate land use planning, as well as adaptation to climate variability. It underscores paramos and upper watersheds as territorial regions that deserve special attention. In general, the PND highlights the importance of developing the necessary institutional capacity to negotiate integrated regional and sectoral land planning as means to preserve ecosystems that provide essential services for the well-being of society, such as water supply.
- 1.17 The project is also in line with policies dealing with biodiversity conservation being formulated for Bogota and the Corridor area. Strategy 5 of the city's 2012–2015 District Development Plan, specifically refers to activities that should be implemented to mitigate and adapt to climate change in the context of biodiversity conservation, in order to ensure long-term productivity. In general, the experiences gained under the proposed project will contribute to the development of the National Adaptation Plan identified in the corresponding Document of the National Council on Economic and Social Policy –CONPES 3700-2011,<sup>15</sup> which will guide the formulation of current and future programs and projects to address extreme climate phenomena, and improve the resilience to climate of biophysical and socioeconomic systems in the long term.
- 1.18 **Alignment with the Bank's Country Strategy.** This operation is aligned with two areas of support included in the IDB Country Strategy with Colombia (2012-2014) (GN-2648-1): water and basic sanitation, and risk management. Specifically, it

<sup>14</sup> The total area of selected paramo complexes equals 174,438 ha 49% is publicly-owned and 51% is private land (Universidad Distrital 2010, CAR 2012, Parques Nacionales Naturales de Colombia 2005).

<sup>15</sup> CONPES Document 3700 –*Consejo de Política Económica and Social*. Institutional Strategy for the Coordination of Climate Change Policies and Actions in Colombia. National Planning Department.

contributes to the achievement of two goals: (i) increase the effective access to water by focusing on the adaptation of supply sources to the consequences of climate change; and (ii) improve the country's resilience towards disasters by providing information and elements to tackle the climate change challenge.

- 1.19 **Alignment with Bank's priorities in the region.** This operation is aligned with the lending target of providing support to climate change, renewable energy and environmental sustainability initiatives established in the Report on the Ninth General Increase in the Resources of the Bank (GCI-9) (AB-2764). The operation contributes to the regional development goal of protecting the environment, responding to climate change, promoting renewable energy and enhancing food security by delivering products set in Annex I of the GCI-9 Results Framework.

## **B. Objectives, Components and Costs**

- 1.20 The project's objective is to strengthen the buffering and water regulation capacity of the upper portions of watersheds located in the Corridor, which supply drinking water to the Bogota metropolitan area and its adjacent municipalities. A total of 22,088 households in the three prioritized zones would benefit from the operation's activities. In addition, over 7 million inhabitants of 11 rural municipalities, as well as the peri-urban and urban areas of Bogota D.C. will indirectly benefit from the provision of a stable water supply. The project will promote adaptation to climate variability and change in the Corridor through two components:
- 1.21 **Component 1. Knowledge Management** (SCCF: US\$0.45 million; local counterpart: US\$1.1 million; associated funds: US\$0.3 million). This component aims at contributing to an increased consideration of climate change vulnerability in land-use and watershed planning, measured through the number of land use plans, Territorial Ordinance Plans (POT) and Management and Watershed Ordinance Plans (POMCA) that incorporate climate change considerations (environmental determinants). It includes the transfer of information and knowledge about climate impacts on water regulation in the Corridor to local communities and other stakeholders as a basis for more effective hydrological management. The main activities that will be carried out are: (i) the development of high-resolution climate change scenarios, which will serve as input for watershed planning; (ii) the development of vulnerability assessments of the high Andean ecosystems (higher than 2,600 masl) to climate variability and change, analyzed on a scale of 1:25,000 with respect to their capacity to supply and regulate water, focused on priority areas defined by the evaluation of hydrological risk; (iii) the creation of a monitoring system to track the impact of the adaptation measures, aimed at reducing the region's vulnerability to climate variability and to changes in the water cycle; and (iv) the development of workshops and training sessions to respond to the needs of different users and enhance their existent knowledge of climate change issues, covering topics such as successful management experiences on adaptation.
- 1.22 **Component 2. Adoption of adaptation measures to address the impacts of climate variability and change on the water balance of priority areas** (SCCF: US\$3.3 million; local counterpart: US\$9.1 million; associated funds: US\$10.6 million). This component aims at increasing the adoption of climate adaptation measures in land-use and watershed planning and execution. Strategic adaptation

measures will be financed to directly address the net effect of climate variability and change on water regulation and storage in three priority areas. Concrete activities to be initially deployed in three prioritized hydrological units, will include: (i) restoration activities and establishment of the connectivity of natural ecosystems; (ii) design and implementation of re-vegetation activities and/or improved engineering to increase the water regulation capacity; (iii) adoption by farmers of climate-resilient land-use management practices –agro-silvopastoral systems, improved micro-irrigation and enhanced drought resistant grasses in local production systems– aimed at reducing the vulnerability posed by climate change on local hydrological conditions; and (iv) redesign and modification of hydraulic works in critical water supply areas to increase water storage capacity. The SCCF investment will be used to directly promote changes in the habits of 60 families, which are expected to transition towards climate-resilient management practices (20 families per each selected hydrological unit).<sup>16</sup>

### **C. Key Results Indicators**

- 1.23 The project's Results Framework (Annex II) was prepared under a consultative and participatory process through national, regional and local workshops. The overall outcomes of this project are: (i) the hydrological buffering and regulation capacity of high mountain ecosystems (paramos and high Andean forests) is maintained or increased under conditions of climate variability and change; and (ii) increased awareness of adaptation options and lessons learned from field experience in high mountain ecosystems. These outcomes will be measured by the increase of water yield calculated as a percentage during the dry season (Indicator O1); and the number of downloads of knowledge documents produced (Indicator O2).

## **II. FINANCING STRUCTURE AND MAIN RISKS**

### **A. Financing Instruments**

- 2.1 The total cost of the program is US\$27,924,750. The present investment grant is for an amount of up to US\$4,215,750 and is financed by the SCCF<sup>17</sup>. Local contributions<sup>18</sup> will be provided in kind by the following entities: (i) the Ministry of Environment and Sustainable Development (MADS), US\$65,000; (ii) EAAB, US\$10,000,000; (iii) IDEAM, US\$544,000; (iv) CORPOGUAVIO, US\$250,000; and (v) CAR, US\$550,000. In addition, as the program is part of a broader Bank approach on adaptation to climate change, additional resources in the amount of

---

<sup>16</sup> Based on the results from the work on the three pilot hydrological units, the program will be expanded to 4,000 hectares covering the water hotspots identified in the vulnerability studies described in Component 1. The scaling up activities will be led by partner organizations, per the capacity building sub-activity.

<sup>17</sup> The Investment Grant is financed with resources of the Special Climate Change Fund (SCCF). In addition to compliance with special conditions prior to first disbursement, SCCF resources will be available for disbursement once the Financial Procedures Agreement is entered into by the Bank and the World Bank as Trustee of the SCCF.

<sup>18</sup> GEF policies request confirmation of Government's additional contribution to the project through a signed co-financing letter.

US\$12,300,000 are recognized as Associated Funding<sup>19</sup>, namely: (i) loan operation “Rural Water Supply and Wastewater Management Program” (2732/OC-CO for US\$11,400,000); and (ii) technical cooperation “Support to the Adaptation Agenda of Colombia” (ATN/OC-12487-CO for US\$900,000).

**Table 3. Program and Financing Costs (amounts in US\$)**

| Expense Category  | IDB/SCCF         | Local Counterpart | Associated Funds  | Total             |
|---|------------------|-------------------|-------------------|-------------------|
| <b>Component 1.</b> Knowledge Management                | 450,000          | 1,109,000         | 300,000           | 1,859,000         |
| <b>Component 2.</b> Adaptation Measures, M&E and Audit: | 3,344,175        | 9,100,000         | 10,650,000        | 23,094,175        |
| • Adaptation measures                                   | 2,807,175        | -                 | -                 | -                 |
| • Monitoring & Evaluation                               | 472,000          | -                 | -                 | -                 |
| • Project Auditing                                      | 65,000           | -                 | -                 | -                 |
| Project Coordination and Management                     | 421,575          | 1,200,000         | 1,350,000         | 2,971,575         |
| <b>Total</b>  | <b>4,215,750</b> | <b>11,409,000</b> | <b>12,300,000</b> | <b>27,924,750</b> |

## **B. Environmental and Social Safeguard Risks**

- 2.2 The proposed project has been classified, per the Environment and Safeguards Compliance Policy (OP-703), as Category B –low risk, based on the Bank’s environmental and social safeguard policy filters. Consequently, an Environmental and Social Management Report has been developed (see the Required Electronic Link [\(REL\) 4](#)). Also, **the completion of an environmental and social analysis is a special condition prior to the first disbursement**. The activities to be financed under this program are not expected to have negative social or environmental effects. Instead, the project is expected to generate social and environmental benefits for local communities, regional biodiversity and the population of Bogota D.C. and its adjacent municipalities, which are dependent on the services provided by high mountain ecosystems. The project will provide concrete experiences in the implementation of specific climate change adaptation measures that will contribute towards: (i) the enhancement of well-being for local populations; (ii) an increment in the resilience of high mountain ecosystems that regulate water supply for Bogota, D.C. and its neighboring municipalities; and (iii) the ecological restoration of intervened and degraded ecosystems in priority watersheds, in order to improve their conservation status and promote connectivity efforts in the Corridor.
- 2.3 The proposed interventions could generate unwanted environmental damages and go against the interests of local communities the project intends to benefit if they are not implemented properly. However, the proposed interventions are classified as small-scale works that will benefit close to 9,000 families or 36,000 individuals, and will contribute to the conservation of areas that have been identified as critical from the standpoint of hydrological risk.

<sup>19</sup> Associated financing or co-financing, is recognized by the GEF as resources from the execution of other operations, contributing to the objective of the project during its timeframe of execution.

- 2.4 Moreover, the project design included the following principles: (i) a participatory and gender focus to ensure the effective participation of both local communities and women's groups in the project, and the equitable distribution of benefits; (ii) the Adaptive Territorial Ecological Structure (*Estructura Ecológica Territorial Adaptativa*) as a tool for land use planning, which encompasses a network of geographic spaces that supports essential ecological processes targeted at taking adaptation beyond biodiversity conservation; and (iii) the use of a control group (micro-watersheds) to evaluate the impact of the project's results.
- 2.5 During the preparation of the project, a consultation process was conducted with public entities, community organizations and other stakeholders. Five workshops were scheduled: two in Bogota with national, regional and municipal governments, and one in each of the municipalities housing the areas of interest (Tagua, Guasca and Usme –a rural area which surrounds Bogota). The project preparation team presented the objectives, scope, components, activities, expected results and project funding sources. Participants were consulted and data was collected through surveys. The main concern expressed by the participants was the allocation process of the limited available resources. Funds from the GEF will serve to execute the proposed actions in priority watersheds, and the results and lessons learned will guide the scaling up and replication initiatives along the conservation Corridor with co-funding and other additional resources to be defined by the main stakeholders. Contributions and suggestions made by the participants in each of the workshops, and the information collected in the surveys were compiled, analyzed and incorporated in the supporting documentation (a report on the consultation process is available in [OEL 5](#))

### **C. Fiduciary Risk**

- 2.6 The evaluation of the Executing Agency's institutional capacity indicates that the risks for the procurement of goods and services, and for administrative, financial and accounting management, are low (see [Annex III](#)).

### **D. Other Key Issues and Risks**

- 2.7 The list of identified risks can be found in the [risk assessment](#) prepared for the operation, which will be revised by the Executing Agency during the project start-up workshop. Two main medium risks have been identified for the project:
- a. Lack of commitment on the part of EAAB, CAR, CORPOGUAVIO, the Mayor's Office of Bogotá D.C. and the municipalities of Tagua, Sesquilé, Guatavita and Guasca, the MADS, IDEAM and local communities to contribute to the program. This risk will be mitigated by ensuring that these institutions as well as other local organizations are consulted and participate in all phases of the project design and implementation. The existing capacities of strategic local actors were evaluated during project design. To ensure their active participation, activities will be structured in accordance with their capacity levels. This will ensure the project's sustainability in the medium and long terms.
  - b. Local communities will not adopt measures for adaptation to climate variability and change or will not support them. To mitigate this risk, from the design phase of the Corridor (EAAB and CI 2010), using the INAP as a dissemination tool,

efforts have been aimed at strengthening the capacity of local actors, which included consultation workshops and training sessions, the creation of greater awareness to facilitate knowledge transfer and the improvement of local adaptation processes. Taking into account lessons learned from such processes, the project, in continuation of these activities, will bring together environmental authorities, communities, institutions and relevant sectors to establish agreements, which will promote adaptation measures.

### **III. IMPLEMENTATION AND MANAGEMENT PLAN**

#### **A. Summary of Implementation Arrangements**

- 3.1 **Executing Agency:** The project will be executed by the MADS, through CI's subsidiary in Colombia. CI was founded in 1987 as a nonprofit organization, with an innovative focus on preserving the planet's biodiversity. Since then, CI has worked with hundreds of partners in over 40 countries, in 5 continents, where the world's areas of greatest biological wealth are located. The objective of Conservation International Foundation Colombia (CI-C) is to strengthen the institutional development of non-governmental environmental organizations, support their initiatives and activities and serve as an international focal point that channels efforts that contribute to the achievement of the country's conservation objectives. CI-C has considerable experience in promoting, planning and supporting activities that deal with climate change issues. It has successfully executed several internationally funded ecosystem-based adaptation projects, characterizing and assessing ecosystem-services including those related to water yield enhancement and natural regulation. It also executed the GEF-funded and World Bank-implemented INAP, a predecessor of the proposed project, and is currently in charge of a GEF-funded IDB-implemented geo-thermal project with satisfactory results so far (ATN/FM-12805-CO and ATN/FM-12825-CO).
- 3.2 **The execution of an implementation agreement between the Executing Agency and CI-C, based on the terms previously agreed upon with the Bank is a special condition prior to the first disbursement.** The agreement must include at least the following aspects: (i) application of Bank's fiduciary and procurement policies; (ii) preparation of management tools such as the Multi-year Execution Plan (MEP), the Annual Work Plan (AWP) and a budget; (iii) financial and accounting management (including financial statements); and (iv) preparation of project progress reports, among others. Specific responsibilities include: (i) preparation of an operational manual in accordance with IDB policies and standards, to be submitted to the Project Steering Committee (PSC) for approval; (ii) update the AWP with the assistance of and in agreement with the project's Technical Committee (TC), for the consideration of the PSC and the non-objection of the implementing agency; (iii) carry out the actions outlined in the approved AWP in accordance with its terms; (iv) open separate accounts to manage project funds; (v) prepare and submit disbursement requests to the IDB, with relevant supporting documentation for eligible expenses; (vi) ensure the quality of procurement and hiring processes, in compliance with applicable IDB policies; (vii) verify the quality of goods and services provided by contractors and making the corresponding payments; (viii) prepare progress reports; and (ix) ensure compliance with the terms

of the grant agreement to be signed with the IDB, in order to achieve the expected results of the project. Finally, the ultimate responsibility for project execution rests with CI-C.

- 3.3 **Project Steering Committee (PSC):** To ensure the effective coordination and a strategic alignment with the project's partner institutions, a steering committee will be created. It will comprise high level representatives from the MADS, EAAB, IDEAM, CORPOGUAVIO and CAR. The roles and responsibilities of the PSC will be formalized with interagency agreements established between its members and the MADS, and reflected in the Project Operational Manual (POM). The PSC's responsibilities include: (i) approval of the POM; (ii) approval of planning tools such as the MEP and the AWP; (iii) review of progress reports; and (iv) provision of strategic and operational recommendations to achieve the project results. The PSC will meet every six months or more frequently if convened by the MADS. The PSC could invite practitioners and scientists to participate in meetings to provide technical support for decision-making. Other institutions involved in the project's area of interest may be invited to the PSC, including among others, the Government of Cundinamarca, and the municipal governments. **The designation of the members of the PSC at MADS, EAAB, IDEAM, CORPOGUAVIO and CAR is a special condition prior to the first disbursement.**
- 3.4 **Project Technical Committee (TC):** The project will have a Technical Committee for overall technical oversight. The PSC must provide evidence of the designation of the members of the TC. The TC will meet at least once every three months and will be comprised by the same institutions that form the PSC and additionally the Special Administrative Unit of the National Natural Parks System. IDEAM, on behalf of the MADS, will chair the TC. The committee's responsibilities include the provision of technical guidance, the endorsement of the terms of reference for the implementation of technical aspects of the project, the review of final project deliverables to assure the technical quality and the recommendation of complementary analyses, among others. It is important to highlight that even though the TC and the PSC are comprised by the same institutions, the individuals that participate in each committee are different. The members of the PSC are high level officials (first or second echelon in their organization), while the TC is technical in nature. Both committees play distinct roles within the project's executing structure; they complement each other and operate at different levels of the project.
- 3.5 **Project Coordination Unit (PCU):** CI-C will set up a Project Coordination Unit, which will include a National Project Coordinator (NPC), and an administrative and financial assistant. The unit will be financed with project funds. The NPC will report to CI's-Colombia Executive Director and the Executing Agency which will supervise the project's technical development. The consultants hired to work on the present project will report to the NPC. The technical units of CI-C and partner institutions will supervise consulting services.
- 3.6 The NPC will be responsible for the following tasks: (i) lead the project's operational management and the preparation of the MEP, the AWP and the progress reports; (ii) ensure that the procurement of all goods and services required for the project is carried out in accordance with IDB policies, and in coordination with CI's



technical and support units; (iii) supervise both the administrative and financial assistants; (iv) make sure that the audited annual financial statements are prepared in a timely fashion in coordination with CI's support units; (v) act as focal point and promote active collaboration between CI and all the partner institutions, contractors and key stakeholders involved, including the IDB and SCCF/GEF; and (vi) in coordination with the TC, assure the technical quality of project's products.

- 3.7 The fiduciary and procurement specialists will support the NPC in the execution of various tasks, from financial and accounting issues, to procurement and hiring processes. They will assist in the preparation of documentation to support all sorts of transactions, as well as accounting and financial records, administrative information and disbursement requests, in coordination with CI's respective units. Also, these specialists will design and implement the project procurement plan and support CI and other partner institutions in all aspects of the project related to personnel, financial and accounting management, treasury, procurement, internal control, etc. They will report to the NPC.
- 3.8 **Project main stakeholders:** The main institutional stakeholders are the environmental authorities (MADS, Administrative Unit of the Protected Areas System of Colombia, CAR, CORPOGUAVIO and SDA), research institutes (IDEAM, Instituto Alexander von Humboldt), the Government of Cundinamarca, and EAAB. **The execution of cooperation agreements between the Executing Agency and EAAB, IDEAM, CORPOGUAVIO and CAR is a special condition prior to the first disbursement.** The MADS will coordinate the actions of the baseline project with the proposed SCCF-funded intervention. Other key stakeholders at the local level are grassroots communities, community action boards and other teams responsible for land-use planning instruments. In addition, municipalities and their planning agencies (mayors, municipal councils, etc.) and joint committees for the management of watersheds and shared ecosystems are considered relevant. All have actively participated and collaborated in the preparation and design of the project, and will participate in the validation and implementation of the specific interventions through workshops and public consultations, as required. Additionally, local governments will receive training on how to include climate change considerations into land use plans.
- 3.9 **Project Operational Manual (POM):** Rules and procedures for the management and implementation of the project, and for the operation of the PSC and the PCU, will be laid out in an operational manual prepared in accordance with applicable procedures of the SCCF/GEF and the Bank. The manual shall be approved by the MADS prior to project startup and it should include at least the following topics: (i) hiring and procurement; (ii) procedures for accounting, finances, audits and internal controls; (iii) management and coordination; (iv) monitoring, follow-up and evaluation systems; and (v) environmental and social safeguards. The Executing Agency must approve the POM prior to the first disbursement.
- 3.10 **Disbursements and cash flow:** The disbursement period will be 64 months from the date on which the cooperation agreement between the Bank and the Executing Agency is signed; the implementation period will be 60 months. To appropriately manage the project funds, a special bank account on behalf of the project

(designated account) must be opened. Such account should be exclusively for the operation's resources. CI, through the MADS, will prepare and submit disbursement requests and the Bank will disburse under the modality of Advance Payments against project resources, based on real liquidity needs for a maximum period of six months, as stated in the document "Financial Management Policy for IDB-Financed Projects" (OP-273-2). The equivalence of costs incurred as part of the local contribution will be calculated using the same exchange rate for converting funds to the currency of the beneficiary's country.

- 3.11 **In addition to the prerequisites already mentioned, the Executing Agency must provide to the Bank's satisfaction, evidence of the fulfillment of the following special conditions: (i) approval of the POM, based on the terms agreed upon with the Bank; and (ii) creation of the PCU within CI-C, and the designation of its Program Coordinator.**
- 3.12 **Procurement and Hiring:** The procurement of goods and the hiring of consultants paid with project funds will be carried out in accordance with the applicable IDB policies (GN-2349-9 and GN-2350-9). These indicate that the Executing Agency –MADS, will agree with the Bank on a procurement plan which will be executed through CI. The Executing Agency should update such plan on an annual basis or when substantial changes are made. Any proposed revision to this document should be agreed with the Bank. The Bank's supervision of the procurement and hiring processes will be conducted ex post, unless it is otherwise stipulated in the Procurement Plan.
- 3.13 **Supervision:** Disbursements will be supervised on an ex-post basis. To this end, the Executing Agency must have: (i) a financial information system acceptable to the Bank that allows the record keeping of accounting, budget and financial information as well as the preparation of financial statements and other reports related to IDB/SCCF/GEF funds and other sources of financing, if applicable; and (ii) an internal control structure that enables the effective management of the project, provides reliable financial information, allows the generation of magnetic and electronic files and physical records, and contributes to the compliance with the provisions contained therein.
- 3.14 **External Audit:** The financial statements and eligibility of project expenditures will be audited by an independent auditing firm acceptable to the Bank, to be hired by CI. The auditing services will be financed with operational resources. The project's financial statements will be audited on an annual basis, and should be submitted to the Bank for review no later than four months after the close of each fiscal year, according to what was previously agreed in applicable procedures and terms of reference about procurement review, in addition to the Bank's actions and reviews. A private, independent firm will be hired to audit the operation, in order to ensure the quality and timeliness of relevant legal opinions, as stated in the document "Financial Management Policy for IDB-Financed Projects" (OP-273-2).
- 3.15 There is no national policy on public disclosure of audit reports. However, according to the current policy regarding access to and dissemination of information, the audited project reports should be published in the Bank's systems.

## **B. Summary of Arrangements for Monitoring Results**

- 3.16 The project's Monitoring and Evaluation Plan will measure progress towards the achievement of products, results and overall objectives of the project, in accordance with the Results Framework (Annex II). The monitoring activities will analyze the progress of the processes and the achievement of milestones related to such products, while the impact evaluation will focus on the achievement of the project's results and overall objectives. The monitoring and evaluation will be conducted in accordance with IDB and SCCF/GEF guidelines. Annual reports and midterm and final evaluations will be submitted to the Bank, the PSC, the Beneficiary and other stakeholders.
- 3.17 **Performance Evaluation:** An external midterm evaluation will be performed once 40% of IDB/SCCF funds are disbursed, which is crucial to re-assess implementation risks and adjust mitigation actions, so that project's proposed objectives are achieved. Specifically, this evaluation will determine progress toward the achievement of project objectives, the level of participation of key stakeholders, positive changes as a result of the intervention and changes needed to improve the implementation strategy. In addition, a final evaluation will be performed once 80% of the funds are disbursed. This evaluation will focus on the same issues mentioned above. The costs of the evaluation will be covered by the Bank with funds from the SCCF management commission.
- 3.18 **Economic Analysis:** An ex-ante cost-benefit analysis of the proposed adaptation measures –financed under Component 2, was performed to evaluate the economic feasibility of the project. The analysis focused on activities related to restoration, revegetation, improved engineering and climate resilient management practices and measures in local production. Results show that benefits of the adaptation measures proposed by the project almost double their associated cost using a discount rate of 12% and a cost-benefit ratio greater than one, even under a sensitivity analysis involving changes on a single key variable –i.e. willingness to pay for water provision, hydrological response or costs (for more details see [OEL 2](#)).
- 3.19 **Impact Assessment:** To evaluate the project's impact, a monitoring system will be developed as one of its products. Such system will incorporate hydroclimatological variables that get input information from existing stations and local stations to be set up with IDB/SCCF funds, and will use information on the status of adaptation measures implemented, including: (i) the status of restoration activities; (ii) the implementation status of pilot re-vegetation and improved engineering projects; and (iii) the status of actions aimed at the adoption of climate-resilient management practices, as well as adaptation measures in local production systems. To evaluate the effectiveness of adaptation measures in water regulation capacity, the monitoring system will be used to collect and analyze time series of information on soil use and cover, meteorology and hydrology both for priority micro-watersheds and for reference micro-watersheds. The lessons learned as a result of the evaluation of changes in water regulation and supply capacity in priority areas, as well as of the project's socioeconomic benefits, will be registered and disseminated beyond the project's areas of intervention, when applicable. More details on the impact assessment are provided in the [REL 2](#).

| Development Effectiveness Matrix  |   |  |   |               |
|---|---|--|---|---------------|
| Summary   |   |  |   |               |
| I. Strategic Alignment  |   |  |   |               |
| 1. IDB Strategic Development Objectives   |   | Aligned  |   |               |
| Lending Program   | i) Lending to support climate change initiatives, renewable energy and environmental sustainability   |  |   |               |
| Regional Development Goals  | i) Countries with planning capacity in mitigation and adaptation of climate change, and ii) Proportion of terrestrial and marine areas protected to total territorial area (%).   |  |   |               |
| Bank Output Contribution (as defined in Results Framework of IDB-9)   | i) National frameworks for climate change mitigation supported, ii) Climate change pilot project in agriculture, energy, health, water and sanitation, transport, and housing, iii) Number of projects with components contributing to improved management of terrestrial and marine protected areas, and iv) Farmers given access to improved agricultural services and investments (women, indigenous). |  |   |               |
| 2. Country Strategy Development Objectives  |   | Aligned  |   |               |
| Country Strategy Results Matrix   | GN-2648-1   | i) Increase effective access to water and sanitation services, helping to deliver the Millennium Goals, and ii) Make the country more disaster resilient by improving the regulatory, policy, and institutional framework for risk management. |   |               |
| Country Program Results Matrix  | GN-2756   | The intervention is not included in the 2014 Country Program Document.   |   |               |
| Relevance of this project to country development challenges (If not aligned to country strategy or country program)   |   |  |   |               |
| II. Development Outcomes - Evaluability   |   | Evaluable  | Weight  | Maximum Score |
|   |   | 7.3  |   | 10            |
| 3. Evidence-based Assessment & Solution   |   | 7.6  | 33.33%  | 10            |
| 3.1 Program Diagnosis   |   | 3.0  |   |               |
| 3.2 Proposed Interventions or Solutions   |   | 2.4  |   |               |
| 3.3 Results Matrix Quality  |   | 2.2  |   |               |
| 4. Ex ante Economic Analysis  |   | 7.0  | 33.33%  | 10            |
| 4.1 The program has an ERR/NPV, a Cost-Effectiveness Analysis or a General Economic Analysis  |   | 4.0  |   |               |
| 4.2 Identified and Quantified Benefits  |   | 1.5  |   |               |
| 4.3 Identified and Quantified Costs   |   | 1.5  |   |               |
| 4.4 Reasonable Assumptions  |   | 0.0  |   |               |
| 4.5 Sensitivity Analysis  |   | 0.0  |   |               |
| 5. Monitoring and Evaluation  |   | 7.5  | 33.33%  | 10            |
| 5.1 Monitoring Mechanisms   |   | 2.5  |   |               |
| 5.2 Evaluation Plan   |   | 5.0  |   |               |
| III. Risks & Mitigation Monitoring Matrix   |   |  |   |               |
| Overall risks rate = magnitude of risks*likelihood  |   | Medium   |   |               |
| Identified risks have been rated for magnitude and likelihood   |   | Yes  |   |               |
| Mitigation measures have been identified for major risks  |   |  |   |               |
| Mitigation measures have indicators for tracking their implementation   |   |  |   |               |
| Environmental & social risk classification  |   | B  |   |               |
| IV. IDB's Role - Additionality  |   |  |   |               |
| The project relies on the use of country systems  |   |  |   |               |
| Fiduciary (VPC/PDP Criteria)  |   |  |   |               |
| Non-Fiduciary   |   |  |   |               |
| The IDB's involvement promotes improvements of the intended beneficiaries and/or public sector entity in the following dimensions:  |   |  |   |               |
| Gender Equality   |   |  |   |               |
| Labor   |   |  |   |               |
| Environment   |   |  |   |               |
| Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project            |   | Yes  | RG-T2059 to support for the preparation of the project, selection of pilot sites, surveys and complementary analysis. |               |
| The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan |   |  |   |               |

This investment grant aims to strengthen the hydrological buffering and regulation capacity of the upper watershed of Chingaza-Sumapaz-Guerrero, which supplies drinking water to the Bogota metropolitan area and its adjoining rural municipalities. The proposed Special Climate Change Fund (SCCF) intervention intends to demonstrate how to incorporate climate change considerations into watershed planning and management programs associated with high mountain ecosystems. More specifically, it aims to support adaptation measures for the sustainability of water supply systems for Bogota and the surrounding municipalities in the long term.

The document specifies the main problem to be addressed as increasing threats to water production and regulation and some evidence is provided on its contributing factors. The link between the contributing factors and the interventions proposed is acceptable, but the sustainability of the restoration activities is questionable. The effectiveness of the interventions proposed lacks the required evidence.

The Results Matrix evidences vertical logic, however some key outcome indicators appear to be missing, and not all indicators are SMART.

The economic analysis looks at the potential yield increase of two staples (potato and milk), achieved through adoption of climate smart technologies, and the restoration and re-vegetation intervention. For the later, the estimation of potential benefits is based on using existing contingent valuation estimates and transferring those to the current evaluation. However the benefit transfer from the study to the policy case lacks foundation. Overall key assumptions are not clearly stated or justified, and the sensitivity analysis is not conducted around key parameters likely to affect the viability of the project.

The monitoring and evaluation plan proposes conducting a before and after assessment without attribution and an ex-post cost benefit analysis.

The risk matrix identifies relevant risks, however not all have mitigating activities identified or metrics to track their implementation.

## RESULTS FRAMEWORK

|  |  |                                       |  |
|--|--|---------------------------------------|--|
| <b>Project Objective</b>   | To strengthen the hydrological buffering and regulation capacity of the upper watershed of Chingaza–Sumapaz–Guerrero that supplies drinking water to the Bogota metropolitan area and the adjoining rural municipalities |                                       |  |
| <b>Project Overall Impact</b>  | <b>Base Level (2012)</b>   | <b>Target Level</b>                   | <b>Comments</b>  |
| <b>Hydrological buffering and regulation capacity of high mountain ecosystems (<i>paramos</i> and high Andean forests) is maintained or increases under conditions of climate change and variability.</b><br><br><b><u>Indicator O.1</u></b><br><i>Percent increase in water yield during dry season, as per calibrated model, due to the adoption of climate change adaptation measures in the prioritized areas.</i> | 0%   | At least 10% in each prioritized area | <u>Comments:</u> <ul style="list-style-type: none"> <li>• 3 prioritized areas: Guerrero, Chingaza and Sumapaz; three municipalities, 4 micro-watersheds</li> <li>• Dry season refers to the months of DJFM</li> <li>• Climate change adaptation measures include re-vegetation, restoration, hydraulic works and climate resilient land-use management practices</li> <li>• Baseline for water yield level will be established during the first 6 months of project implementation.</li> </ul> <u>Means of Verification:</u> <ul style="list-style-type: none"> <li>• Field reports about water yield.</li> <li>• Analytical results from models relating vegetation cover and dry flow conditions.</li> <li>• Monitoring reports assessing the effects of adaptation measures on vegetation land cover.</li> </ul> <u>Assumptions:</u> <ul style="list-style-type: none"> <li>• The variation in water yield due to the project's interventions may not be significant during project execution period, and its benefits may be manifested in the long term.</li> </ul> |
| <b>Increased awareness of adaptation options and lessons learned from field experience in high mountain ecosystems</b><br><br><b><u>Indicator O.2</u></b><br><i>Number of times knowledge produced has been downloaded.</i>  | 0  | ≥500                                  | <u>Comments:</u> <ul style="list-style-type: none"> <li>• Knowledge produced includes models, maps, technical/scientific report and booklets.</li> <li>• Technical documents include studies, reports, policy briefs, notes, working papers, abstracts and/or journal articles focused on climate change adaptation.</li> <li>• Visitors are to be classified by main activity, country and type of organization.</li> </ul> <u>Means of verification:</u> <ul style="list-style-type: none"> <li>• Website counters; including counting downloads for each knowledge product.</li> <li>• Websites reports and archives.</li> </ul>  |

| Component  | Base<br>(2012) | Year<br>1 | Year<br>2 | Year<br>3 | Year<br>4     | Year<br>5  | Target        | Comments   |
|--|----------------|-----------|-----------|-----------|---------------|------------|---------------|--|
| <b>Outcomes / Outputs</b>  |                |           |           |           |               |            |               |  |
| <b>Component 1 Knowledge Management</b>  |                |           |           |           |               |            |               |  |
| <b><u>Outcome Component 1 (O.C.1.1)</u></b><br>Climate change vulnerability assessments used as input to land use and watershed management plans.<br><b><u>Outcome Indicator 1, Component 1 (I.O.C.1.1)</u></b><br>Number of land plans, POTs, POMCA or Watershed Management Plans that include cc vulnerability assessments (environmental determinants). | 0              | 0         | 0         | 1<br>(1)* | 1<br>(1)      | 0<br>(2)   | 2<br>(4)      | <b>Comments:</b> <ul style="list-style-type: none"> <li>The land-use plans include: (i) Land Use Schemes for the municipalities of Tausa, Cogua and Guasca; and (ii) Management and Watershed Plans (POMCA): Bogotá and Siecha Rivers.</li> <li>POT preparation follows “Environmental Determinants” defined by CARS. Based on the availability of vulnerability maps, CARS will direct their use in the definition of POTs and provide technical assistance to those responsible for POT preparation.</li> </ul> <b>Means of Verification:</b> (i) approved land-use plans; (ii) POMCAS adopted by Regional Autonomous Corporations (CARS).<br>* Numbers in parenthesis to be funded and executed by partner organizations (co-finance).<br>M&E activities are planned for the monitoring progress by partner organizations.  |
| <b><u>Output indicator 1.1.1</u></b><br>Area of the Corridor (in km <sup>2</sup> ) covered by maps indicating the distribution of climate variables under climate change scenarios   | 0              | 0         | 5,500     | 0         | 0             | 0          | 5,500         | <b>Comments:</b> <ul style="list-style-type: none"> <li>Maps include the analysis of at least two emission paths (medium and high) for: temperatures; precipitation; evapotranspiration; and, relative humidity.</li> <li>Total corridor area is 5,500 Km<sup>2</sup></li> </ul> <b>Means of Verification:</b> (i) reports (2) on the assimilation and update of baseline climate change scenarios, supported by the technical and distribution processes; (ii) final report with adopted climate change scenarios (peer reviewed).  |
| <b><u>Output Indicator 1.1.2</u></b><br>Area of the corridor (in km <sup>2</sup> ) covered by maps assessing changes in expected hydrological response of high Andean ecosystems   | 0              | 0         | 5,500     | 0         | 0             | 0          | 5,500         | <b>Comments:</b> <ul style="list-style-type: none"> <li>Hydrological response measured in terms of annual and dry month probability distribution functions</li> <li>High Andean ecosystems are those above 2,600 masl</li> <li>Total corridor area is 5,500 Km<sup>2</sup></li> <li>Maps on scales of 1:25,000 or finer</li> </ul> <b>Means of Verification:</b> (i) project GEODATABASE and publications; (ii) project technical reports; (iii) climate change scenarios available through Internet.  |
| <b><u>Output Indicator 1.1.3</u></b><br>Technical/scientific vulnerability report assessing the hydrological response of high Andean ecosystem to climate change   | 0              | 0         | 1         | 0         | 0             | 0          | 1             | <b>Comments:</b> <ul style="list-style-type: none"> <li>Hydrological response measured in terms of annual and dry month probability distribution functions.</li> <li>The assessment of vulnerability of water resources consists of four steps: a) Analysis of the climate sensitivity of the high mountain ecosystems in the prioritized areas; b) Development of an empirical water regulation model associated with land cover and range of uncertainty; c) Analysis of the exposure of the high mountain ecosystems to actual and predicted impacts from climate change; and d) Analysis of result.</li> <li>Report subject to peer review, which should include comments from at least 2 local and 2 international experts associated with research centers and/or universities.</li> </ul> <b>Means of Verification:</b> (i) technical /scientific report and comments received from peer experts; (ii) vulnerability and risk maps and databases. |
| <b><u>Output Indicator 1.1.4</u></b><br>Number of officials from MVCT, MADS, EAAB's, rural and municipal supply systems and CARs trained in the use of climate change scenarios and vulnerability assessments.   | 0              | 0         | 0         | ≥50       | ≥50<br>(100)* | 0<br>(300) | ≥100<br>(400) | <b>Means of Verification:</b> (i) certificates of participation and reports about training events; (ii) knowledge scores before and after in selected training courses / workshops.<br>* Numbers in parenthesis to be funded and executed by partner organizations with co-financed resources.   |

| Component  | Base<br>(2012) | Year<br>1 | Year<br>2 | Year<br>3 | Year<br>4 | Year<br>5 | Target | Comments  |
|--|----------------|-----------|-----------|-----------|-----------|-----------|--------|---|
| <b>Outcomes / Outputs</b>  |                |           |           |           |           |           |        |   |
| <b>Component 2: Adoption of adaptation measures to address the impacts of climate variability and change</b>   |                |           |           |           |           |           |        |   |
| <b>Outcome Component 2 (O.C.2)</b><br><i>Increased adoption of adaptation measures to reduce water vulnerability to climate change</i>   |                |           |           |           |           |           |        | <b>Comments:</b>  |
| <b>Outcome Indicator 1, Component 2 (I.O.C.2.1-1)</b><br>Number of new funding proposals received by MADS to develop/ implement adaptation measures from municipal governments and CBOs  | 0              | 0         | 0         | 2         | 10        | 20        | 32     | <ul style="list-style-type: none"> <li>Adaptation measures or climate-resilient management alternatives include re-vegetation, restoration, and the use of climate resilient and water efficient productive practices.</li> <li>By year 3 MADS will open the possibility of receiving formal proposals for funding the implementation of adaptation measures. Municipal governments and CBOs with the no-objection of the CARS will be encouraged to submit proposals that include technical and economic assessments</li> </ul>  |
| <b>Outcome Indicator 2, Component 2 (I.O.C.2.1-2)</b><br>Number of families that agree to allocate land for conservation and re-vegetation practices in critical areas for water supply. | 0              | 0         | 20        | 20        | 20        | 0         | 60     | <p><b>Means of Verification (outcome 1):</b> (i) documentation requesting the no-objection received by the participating CARS; (ii) documentation received by MADS; (iii) reports on proposals received</p> <p><b>Means of Verification (outcome 2):</b> (i) maps of restored/consolidated areas and field reports; (ii) Reports detailing change in the coverage and quality of the restored system; (iii) Signed restoration agreements; (iv) reports of field visits (Years 3 and 5) to farms registered in the project; (v) field notes and measurements (Years 3 and 5) in demonstration plots; (vi) reports and notes of field visits (Years 3 and 5) regarding the adoption of technologies for water regulation in productive systems.</p>  |
| <b>Intermediate Outcome Indicator, Component 2</b><br>Number of families that incorporate adaptation measures or climate-resilient management practices in their production systems.     | 0              | 0         | 20        | (100)*    | (100)     | (100)     | (300)  | <p>* Numbers in parenthesis to be executed by partner organizations with co-financed resources.</p>   |
| <b>Output Indicator 2.1.1</b><br>Protocols for restoration of strategic areas agreed with landowners/authorities   | 0              | ≥2        | ≥1        | 0         | 0         | 0         | ≥3     | <b>Comments:</b> <ul style="list-style-type: none"> <li>Protocols will contain: types of species and their ecological characteristics, planting density (number of individuals and/or species by arrangement), planting methods (spatial distribution), maintenance activities, and measures to verify the effectiveness of the restoration activities.</li> <li>Strategic areas will be selected based on their contribution to water regulation process. These could include secondary vegetation located on the borders of the water bodies (riparian vegetation), areas adjacent to springs or recharge zones, and surrounding areas of woody vegetation that are in a good state of conservation.</li> <li>Restoration areas will be selected through the application of predefined criteria (e.g., slope, presence of springs, woody vegetation in surrounding areas, and willingness of landowners to participate) in coordination with regional and local environmental authorities and landowners.</li> <li>At least one protocol will be developed per hydrological unit</li> </ul> <p><b>Means of Verification:</b> (i) protocols; (ii) written agreements with landowners and local/regional environmental authorities.</p> |
| <b>Output Indicator 2.1.2</b><br>Strategic areas in high mountain ecosystems under restoration process (ha. of publicly-owned land).   | 0              |           | 50        | 100       | 100       |           | 250    | <b>Comments:</b> <ul style="list-style-type: none"> <li>Restoration activities include fencing and planting pioneer species to foster natural regeneration.</li> <li>49% of land in the Corridor is publicly-owned (81,952 ha) and 51% is privately owned (92,486 ha). Agreements with local governments (municipalities), ministries and other government institutions will enable the restoration of the hectares proposed as a target for this indicator. For this purpose, activities under Component 2 include dialogue and workshops</li> </ul>   |

| Component   | Base<br>(2012) | Year<br>1 | Year<br>2 | Year<br>3 | Year<br>4 | Year<br>5 | Target | Comments  |
|---|----------------|-----------|-----------|-----------|-----------|-----------|--------|---|
| <b>Outcomes / Outputs</b>   |                |           |           |           |           |           |        |   |
|   |                |           |           |           |           |           |        | <p>with these authorities.</p> <ul style="list-style-type: none"> <li>Strategic areas will be selected based on their contribution to water regulation process. These could include secondary vegetation located on the borders of the water bodies (riparian vegetation), areas adjacent to springs or recharge zones, and surrounding areas of woody vegetation that are in a good state of conservation.</li> <li>Restoration areas will be selected through the application of predefined criteria (e.g., slope, presence of springs, woody vegetation in surrounding areas, and willingness of landowners to participate) in coordination with the project team, regional and/or local environmental authorities, and landowners.</li> </ul> <p>Means of Verification: (i) maps of restored/consolidated areas and field reports; (ii) reports detailing change in the coverage and quality of the restored system; (iii) signed restoration agreements.</p> <p>* Numbers in parenthesis to be executed by partner organizations with co-financed resources.</p> |
| <p><b>Output Indicator 2.1.3.</b></p> <p>Re-vegetation gender-focused pilot projects designed and implemented in three areas that are critical for water supply.</p>                                | 0              | ≥3        | ≥3        | ≥3        | 0         | 0         | ≥9     | <p><u>Comments:</u></p> <ul style="list-style-type: none"> <li>Re-vegetation is understood as the rehabilitation of nonproducing lands with highly altered ecosystem functions.</li> <li>In the Chingaza-Sumapaz-Guerrero corridor re-vegetation is recommended in nearly 47,000 ha. Water hotspots or areas critical for water supply will be identified through the vulnerability analysis in Component I.</li> <li>Gender focused pilot projects, those in which women make the decisions as to the activities to be executed, will get technical assistance and targeted resources. Planning activities will be gender sensitive.</li> </ul> <p><u>Means of Verification:</u> (i) Technical reports that have been approved by relevant community organizations.</p>  |
| <p><b>Output Indicator 2.1.4.</b></p> <p>Municipal and community organizations, with emphasis in potatoes and milk producers, trained in climate change risk management and adaptation measures</p> | 0              | ≥10       | ≥10       | ≥15       | ≥15       | ≥15       | ≥65    | <p><u>Comments:</u></p> <ul style="list-style-type: none"> <li>Workshops and pilot projects field visits to: (i) increase awareness of the importance of climate risk management, (ii) provide technical assistance on the implementation of adaptation measures, and (iii) provide information on climate change impacts.</li> <li>Adaptation measures or climate-resilient management alternatives include revegetation, restoration, and the use of climate resilient and water efficient productive practices.</li> </ul> <p><u>Means of Verification:</u> (i) Agendas of training events; (ii) assistance reports; and (iii) material used at events.</p>  |
| <p><b>Output Indicator 2.1.5</b></p> <p>Monitoring and evaluation system (M&amp;E) to track the impacts of adaptation measures in the water cycle deployed.</p>                                     | 0              | 0         | 0         | 1         | 0         | 0         | 1      | <p><u>Comments:</u></p> <ul style="list-style-type: none"> <li>Design of the M&amp;E system includes the selection of control areas, where no adaptation measures are implemented;</li> <li>Climate information network will follow WMO/IDEAM standards and procedures;</li> <li>Due to the inherent variability of the hydrologic process the impacts of adaptation measures might not be measurable during the project span.</li> </ul> <p><u>Means of Verification:</u> (i) Technical report on the design of the M&amp;E system agreed by the PSC; (ii) report from the PNC to the PSC detailing the plan of action for the deployment of the M&amp;E system; (iii) progress reports on the execution of the plan of action for the M&amp;E system; (iv) M&amp;E reports for years 3, 4 and 5.</p>  |



## **FIDUCIARY ARRANGEMENTS**

|                          |  |
|--------------------------|--|
| <b>COUNTRY:</b>          | Colombia   |
| <b>PROJECT N°</b>        | CO-G1002   |
| <b>NAME:</b>             | Adaptation to Climate Impacts in Water Regulation and Supply for the Area of Chingaza–Sumapaz–Guerrero                                   |
| <b>EXECUTING AGENCY:</b> | Ministry of Environment and Sustainable Development through Conservation International – Colombia (CI)                                   |
| <b>PREPARED BY:</b>      | Miguel A. Orellana, Lead Fiduciary and Financial Management Specialist; and Rodolfo Gastaldi, Lead Fiduciary and Procurement Specialist. |

### **I. Executive Summary**

- 1.1 Conservation International’s fiduciary management capacity assessment is based on an institutional capacity study completed on April 12<sup>th</sup>, 2013. The study took the following tools into consideration: (i) “Detailed Evaluation of the Executing Agency’s Capacity to Manage Acquisitions”; (ii) “Institutional Capacity Evaluation System” (SECI); and (iii) analysis of the agency’s key procedures related to planning, budgeting, payments and procurement. Currently, CI has executed successfully *GEF’s Trust Fund 56350-CO* jointly with the Integrated National Adaptation Project (INAP), financed by the World Bank. The evaluation concludes that CI has enough capacity to carry out financial management activities, as well as the administration of resources and acquisitions for the present project. CI is considered to have a low fiduciary risk in terms of financial management. In regards to procurement management, the risk has also been determined as low.
- 1.2 CI-Colombia is an NGO with policies and guidelines of its own. Its operations rely in an Integrated System of Financial Information that oversees and controls budgets and accounting. Such system, however, lacks a treasury module, which operates on-line. Additionally, CI uses GEMS, a software that allows the institution to keep track of its operations with fair level of detail. Nonetheless, none of these systems are able to produce the reports required by the Bank during the execution of a project.
- 1.3 The project includes US\$23.7 million of counterpart resources, which will come from other local institutions that have pledged such funds (via commitment letters). The project does not include co-financing from other multilateral agencies.

### **II. Fiduciary Context of the Executing Agency**

- 2.1 CI will take care of the project’s accounting with its integrated system. However, CI will have to upgrade such system or acquire a new one in order to be able to produce the information and reports required by the Bank. The entity, making use of its own organization, will be in charge of the implementation of the project. It will also be responsible for the coordination of financial and managerial procedures of the project, such as budgeting, treasury, accounting, procurement, monitoring and the preparation of reports as needed. Also, CI will open and manage a bank account for the project’s resources, which will be used exclusively for the operation’s funds.
- 2.2 The following are some of CI’s financial management strengths: (i) the entity maintains all of its activities documented, approved and formalized through an information system; (ii) the internal control system is adequate; and (iii) it works with external auditors. CI’s

final report of the previous GEF project managed by CI was audited by BDO, who gave a favorable opinion and made no internal control recommendations. CI has one financial specialist and one procurement and recruiting specialist (working part-time), who have experience in multilateral banking projects. These professionals are in charge of an ongoing geothermal project being developed with the IDB, which has a satisfactory performance.

- 2.3 CI has properly assigned the roles and responsibilities to manage procurement processes financed with multilateral funds, in the pre-contractual, contractual and post-contractual stages (for the latter, the monitoring and supervision of contracts should be strengthened). CI-Colombia must prepare an Operating Manual which should include instructions applicable to procurement processes for financed by multilateral banks.
- 2.4 CI's associates and consultants have significant expertise managing financial and procurement processes related to projects financed by multilateral organizations. The institution is known for having stability in the positions that are involved in the procurement processes. There are no indications that such processes could deteriorate.
- 2.5 To guarantee that CI follows the procurement policies applicable to operations financed by the Bank –specified in documents GN-2349-9 and GN-2350-9, it is recommended to consider, as a condition for the first disbursement, the establishment of a set of operational rules that define all the aspects related to procurement.

### **III. Fiduciary Risk Evaluation and Mitigation Actions**

- 3.1 Given that the executive unit of the project has not been established, a risk evaluation has not been performed. It has been determined that once the unit is created, the evaluation will be carried out, prior to the operation's execution.

### **IV. Considerations for the Special Provisions of the Contracts**

- 4.1 The Financial Management section considers the following conditions for the first disbursement: (i) CI should appoint officials with the necessary experience and competence –as agreed with the Bank, who will comprise the coordinating unit of the project, and will work exclusively on the project's execution; and (ii) the Project Operating rules and regulations should be in place and should include the necessary institutional arrangements: a financial chapter, a procurement chapter and a monitoring and evaluation chapter, with the terms conditions approved by the Bank.
- 4.2 **Special Provisions:** The executing agency should provide the necessary documents to support project related expenses, using the exchange rate for the conversion of disbursements made in dollars of the United States of America to Colombian pesos. CI must submit annual audited financial statements to the Steering Committee and the Bank.
- 4.3 **In Procurement:** Not required.

### **V. Agreements and Requirements for Procurement**

- 5.1 Procurement processes financed with project's resources will follow the procedures established in the Bank's procurement policies (documents GN-2349-9 and GN-2350-9).

#### **A. Procurement**

- 1. **Procurement of Works, Goods and Services other than Consulting:** Document GN-2349-9 will be applicable. The procurement of works, goods and services (other

than consulting) processed under the modalities of International Competitive Bidding (ICB) and National Competitive Bidding (NCB) will be harmonized with Colombia's local rules and agreed upon with the Bank. The sector specialist of the project will be responsible for the review of the technical specifications for each procurement process.

2. **Selection and Hiring of Consultants:** Document GN-2350-9 will be applicable. Consultancy contracts will use the Standard Request for Proposals document, harmonized with Colombia's local rules and agreed upon with the Bank. The project's sector specialist will be responsible for the review of the terms of reference to hire consultancy services.
3. **Selection of Individual Consultants:** Will follow the guidelines in document GN-2350-9.

**Table 1. Threshold Amounts (US\$)**

| WORKS  |   | GOODS                             |  | CONSULTANCIES                     |   |
|--|---|-----------------------------------|--|-----------------------------------|---|
| International Competitive Bidding <sup>a</sup> | National Competitive Bid (complex works) <sup>b</sup> | International Competitive Bidding | National Competitive Bidding <sup>b</sup> (uncommon goods) | International Competitive Bidding | Short list with no nationality restrictions |
| Greater than or equal to 500,000               | Between 200,000 and 500,000                           | Greater than or equal to 500,000  | Between 200,000 and 500,000                                | Greater than or equal to 200,000  | Less than or equal to 200,000               |

<sup>a</sup> Regarding simple works and common goods with costs below the amount set for an international competitive bidding, the price comparison method will be acceptable.

<sup>b</sup> Regarding complex works and uncommon goods with costs below the range established for the national competitive bidding, the price comparison method will be acceptable.

## B. Main Acquisitions to be Defined

**Table 2. Main Acquisitions<sup>a</sup> (US\$)**

| Activity   | Process Type | Estimated Date | Amount  |
|--|--------------|----------------|---------|
| <b>Goods</b>   |              |                |         |
| 1. Procurement of software and data.   | PC           | Feb- 2014      | 40,000  |
| <b>Works</b>   |              |                |         |
| 2. Small civil works to improve the capacity to produce and regulate water during the dry season.                              | NCB          | Nov- 2015      | 00,000  |
| 3. Implementation of re-vegetation activities.   | ICB          | Nov- 2015      | 579,000 |
| 4. Implementation of re-forestation activities.  | ICB          | Nov-2015       | 750,000 |
| <b>Consulting Services</b>   |              |                |         |
| 5. Workshops for municipal organizations to design adaptation measures to respond to climate change in a hydrological context. | QBS          | Nov-2015       | 50,000  |
| <b>Firms <sup>b</sup></b>  |              |                |         |
| 6. Consultancy to prepare high resolution climate change scenarios.  | QCBS         | Feb-2014       | 140,000 |
| 7. Consultancy to establish demonstrative plots.   | ICB          | Jul- 2015      | 600,000 |
| 8. Consultancy to model the hydrological demand and productivity   | QCBS         | Jun- 2014      | 150,000 |
| 9. Consultancy to design home surveys and set a sample size.   | QCBS         | Aug- 2014      | 100,000 |
| <b>Individuals</b>   |              |                |         |
| 10. Consultancy for the project coordination.  | QBS          | Feb- 2014      | 185,000 |

<sup>a</sup> To access the project's acquisitions plan, click [here](#).

<sup>b</sup> In case of the consultancy services, the short list will consist of firms with different nationalities. Please, refer to the Policies for the Selection and Contracting of Consultants Financed by the IDB ([GN-2350-9](#)) paragraph 2.6.

### C. Procurement Supervision

- 5.2 It is recommended that all procurements financed with the project's resources should be subject to ex-post reviews. For ICB and single source processes in particular, an ex-ante review should also be performed (regardless of the amount).

| Ex-post Review Limits <sup>a</sup> |                       |                       |
|------------------------------------|-----------------------|-----------------------|
| Works                              | Goods                 | Consultancy Services  |
| Less than US\$500,000              | Less than US\$250,000 | Less than US\$200,000 |

<sup>a</sup> As an exception, single source procurement processes will be reviewed ex-ante.

### D. Special Provisions

- 5.3 Measures to reduce corruption incidents in a procurement process: N/A.

### E. Records and Files

- 5.4 Acquisitions. CI possesses archiving systems that facilitate tasks related to keeping records and archiving the documents that arise throughout the life of a contract. Archiving guidelines indicate that a hard (physical) copy of all relevant documents should always be available. Documents that are over two years old (passive archive) can be kept by a third party that specializes in archiving and record keeping.

## VI. Financial Management

### A. Planning and Budget

- 6.1 CI will receive the project's resources which will be deposited in a special account opened exclusively for the purpose of managing the program's funds. The operations manual of the project must establish guidelines for the transfers and deposits, based on the financial procedures approved by the Bank. Currently, planning is based on the Bank's planning policies.

### B. Accounting and Information Systems

- 6.2 CI has established specific accounting rules. Also, it maintains an integral information system –known as GEMS, which constitutes the repository that stores the information about the institution's operations. However, it will be necessary to add a module in the integrated system that enables the generation of specific reports required by the Bank. Also, GEMS does not generate reports with the level of detail required by the Bank, nor utilizes a convenient classification for investment categories. Record keeping will be based on the accrual method, although the audited financial records of the project will follow cash basis accounting principles, and must be submitted to the Bank annually. To solve these issues, CI will either make the necessary adjustments in GEMS, or obtain a system that offers the required functional capabilities. These audits will be external and will be performed on an annual basis.

### C. Disbursements and cash flow

- 6.3 The GEF resources will be transferred directly to CI. For treasury purposes, CI will select a commercial bank to open an account (the designated account), either in Colombia or abroad, under the name of the project and for the exclusive management of the resources of the project. The method for disbursements will be the anticipation of funds, which is based on cash needs for periods no longer than six months. Reporting activities related to

resources management will follow the guidelines outlined in the “Financial Management Policy for IDB-financed Projects” (OP-273-2).

- 6.4 Along with the with the cash flow projections, a disbursement request must be submitted with the reconciled transactions log for the designated account, as well as a report on the implementation status of the technical and fiduciary performance commitments. Statements of expenses will be processed using the exchange rate to convert United States dollars to Colombian pesos. The following are the special conditions that must be met prior to the first disbursement: (i) CI must appoint officials with specific skills that fit the profiles defined in advance, as well as create the Project Coordinating Unit; and (ii) the manual of operations of the project must be implemented and in effect, and it should include the financial chapter that takes into account the relevant provisions required by the Bank.

#### **D. Internal Control and Internal Audit**

- 6.5 CI has internal control policies that aim at the achievement of results through efficiency, effectiveness and operational transparency. These policies put forth an institutional code of values and performance measurements, the description of CI’s vision and mission, an annual operational plan and relevant indicators and standards. Although CI does not have a specific unit for internal control, control regulations fall under the leadership of different areas and departments according to its policies.

#### **E. External Control and Reports**

- 6.6 CI’s external control is performed by a private auditing firm that carries out ex-post reviews on a selective basis (using the tax inspector figure) in order to verify the rules compliance, good use of resources, enforcement of processes and procedures, achievement of goals and objectives, etc. BDO issued a favorable opinion for the 2011 year term.
- 6.7 For external control purposes of the project, the financial statements and the eligibility of expenditures shall be audited by an independent auditing firm acceptable to the Bank, which will be hired by CI. These audit services will be performed annually and financed with resources from the operation. The audited financial statements of the project must be submitted to the Bank no later than three (3) months after the close of each financial year, in accordance with the procedures stated in the terms of reference previously agreed. The required reports will be those mentioned in the standard terms of reference, which include the review of procurement processes, in addition to the reviews and performances of the Bank. An independent private auditing firm is required to audit this operation to ensure the timeliness and integrity of the audit opinion, according to the provisions stated in document OP-273-2 “Financial Management Policy for IDB-financed projects.”

#### **F. Financial Supervision Plan**

- 6.8 Based on the results of the assessment of the capacities evaluation, the financial specialist will perform at least one “in situ” review a year, as well as “desktop” reviews of the annual and final audited financial statements. The project auditor will verify that the resources are executed following the Bank’s rules and policies about fiduciary management, and the conditions stipulated in the manual of operations. The auditor will visit the entity to carry out inspections. Fiduciary oversight visits regarding financial management will include the verification of financial and accounting arrangements used

as tools for both the project management and the monitoring and implementation of the recommendations made by the independent auditor, among others.

#### **G. Execution Mechanisms**

- 6.9 The Republic of Colombia will be the beneficiary of the project, represented by the International Cooperation Agency (Presidential Agency for International Cooperation). On behalf of the beneficiaries and through CI, the Ministry of Environment and Sustainable Development (MADS) will be the financial executor of the project. CI will work in close collaboration with a technical committee chaired by IDEAM, as a technical-scientific body on behalf of MADS.
- 6.10 A Project Steering Committee (PSC) will be created, which shall consist of high level representatives from MADS, EAAB, IDEAM, CORPOGUAVIO, SDA, MVCT, and the director of PRICC (who will have a seat but no voting rights). The responsibilities and detailed functions of this PSC will be formalized through inter-institutional agreements between members of the PSC and the MADS.
- 6.11 CI will create a Project Implementation Unit that will be responsible for the operational, administrative and financial management of the project. A Project Coordinator will be responsible for planning and executing activities to achieve the goals and objectives stated in the planning documents. The Coordinator will also oversee the procurement processes for the acquisition of required goods and services, in compliance with applicable IDB policies. Additionally, the Coordinator will be in charge of supervising the work of the financial and managerial unit, and will ensure that the annual audited financial statements are available on a timely fashion. Further details on the implementation mechanism will be presented on the Proposal for the Operation Development and developed on the manual of operations.

#### **H. Other Agreements and Financial Management Requirements**

- 6.12 There are no additional agreements beside the ones mentioned above; however, the agreements and fiduciary requirements included under this annex may be adjusted in accordance to the dynamics of the project following risk analysis updates and institutional capacity evaluations performed during the execution of the project.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-\_\_\_\_/14

Colombia. GRT/\_\_\_-\_\_\_\_-CO. Nonreimbursable Investment Financing of the Special Climate Change Fund (SCCF) for the Adaptation to Climate Impacts in Water Regulation and Supply for the Area of Chingaza-Sumapaz-Guerrero

The Board of Executive Directors

RESOLVES:

1. That the President of the Inter-American Development Bank, or such representative as he shall designate, is authorized in the name and on behalf of the Bank, as administrator of the IDB/SCCF Fund, to enter into such agreement or agreements as may be necessary with the Republic of Colombia, and to adopt such other measures as may be pertinent for the execution of the project proposal contained in document AT-\_\_\_\_ with respect to a nonreimbursable investment financing of the Special Climate Change Fund (SCCF) for the adaptation to climate impacts in water regulation and supply for the area of Chingaza-Sumapaz-Guerrero.

2. That up to the sum of US\$4,215,750 is authorized for the purposes of this resolution chargeable to the resources of the IDB/SCCF Fund, in accordance with the Financial Procedures Agreement to be entered into between the International Bank for Reconstruction and Development (the "World Bank") as Trustee of the Special Climate Change Fund (SCCF), and the Bank.

3. That the above-mentioned sum is to be provided on a nonreimbursable basis.

4. That the authorization granted in paragraph 1 above will be effective once the Bank and the World Bank, as Trustee of the Special Climate Change Fund (SCCF), have entered into the Financial Procedures Agreement referred to in paragraph 2 of this resolution.

(Adopted on \_\_\_\_\_ 2014)