DEVELOPMENT BANK OF LATIN AMERICA (CAF)

PROJECT DOCUMENT

ON A

PROPOSED GLOBAL ENVIRONMENTAL FACILITY TRUST GRANT

IN THE AMOUNT OF US $9.69 MILLION

TO THE

CONSORSORCIO PARA EL DESARROLLO DE LA ECORREGION ANDINA (CONDESAN)

FOR A

ANDES ADAPTATION TO THE IMPACT OF CLIMATE CHANGE IN WATER RESOURCES PROJECT (AICCA)

REVISED DECEMBER 2TH, 2016

Green Economy Unit
Executive Office for Environment and Climate Change

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CURRENCY EQUIVALENTS
(Exchange Rate Effective May 15, 2016)

Currency Unit = US$

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AGRORURAL	Rural Program for Productive Agricultural Development (*Programa de Desarrollo Productivo Agrario Rural, Perú*)
AICCA	Andes Adaptation to the Impacts of Climate Change on Water Resources Project ("*Proyecto Andino de Adaptación a los Impactos del Cambio Climático sobre el Ag*ua*")*
ANA	National Water Authority (*Autoridad Nacional del Agua, Perú*)
APSB	Drinking Water and Basic Sanitation (*Agua Potable y Saneamiento Básico, Bolivia*)
AR5	Fifth Assessment Report of the IPCC
ASOCAM	Servicio Regional de Gestión del Conocimiento
BCRP	Central Reserve Bank of Peru (*Banco Central de Reserva del Perú*)
BOB	Bolivian *(Boliviano)*
CA	Central America *(América Central)*
CAF	Development Bank of Latin America (*Banco de Desarrollo de América Latina; Corporación Andina de Fomento*)
CAR	Regional Autonomous Corporation (*Corporación Autónoma Regional, Colombia*)
CC	Climate Change (*Cambio Climático)*
CCM	Machangara Basin Council *(Consejo de Cuenca Machangara)*
CIAT	International Center for Tropical Agriculture (*Centro Internacional de Agricultura Tropical, Cali, Colombia*)
CIPAV	Foundation "Center for Research on Sustainable Agricultural Production Systems" (*Fundación Centro para la Investigación en Sistemas Sostenibles de Producción Agropecuaria, Colombia*)
CNCC	National Commission for Climate Change (Comisión *Nacional de Cambio Climático, Perú*)
CENACE	National Centre for Energy Control (*Centro Nacional de Control de la Energía, Ecuador*)
CHECC	Emblematic Hydro Electric Plants project *(proyecto "Análisis de Vulnerabilidad de las Centrales Hidroeléctricas Emblemáticas ante los efectos del CC en siete subcuencas hidrográficas del Ecuador")*
CIRA	Certificate of Non-Existence of Archaeological Remains *(Certificado de Inexistencia*

de Ruinas Arqueológicas, Bolivia)

CONELEC National Council for Electricity (*Consejo Nacional de Electricidad, Ecuador*)

CONPES National Council for Economic and Social Policy (*Consejo Nacional de Política Económica y Social, Colombia*)

COOTAD Code for Territorial Land Use Planning, Autonomy and Decentralization (*Código Orgánico de Ordenamiento Territorial, Autonomía y Descentralización, Ecuador*)

COP Colombian Peso (*Peso Colombiano*)

CORPOBOYACA Regional Autonomous Corporation of Boyacá (*Corporación Autónoma Regional de Boyacá, Colombia*)

CORPOICA Colombian Agricultural Research Corporation (*Corporación Colombiana de Investigación Agropecuaria, Colombia*)

COSUDE Swiss agency for development and cooperation (*Agencia Suiza para el Desarrollo y la Cooperación*)

CRiSTAL Community Based Risk Screening Tool – Adaptation and Livelihoods *(Herramienta de Análisis de Riesgo a Nivel Comunitario: Adaptación y MEDIUMs de Vida)*

CV/CC Climate Variability and Climate Change *(Variabilidad Climática y Cambio Climático)*

DESCOM Community Development (*Desarrollo Comunal, Bolivia*)

DGAAA Directorate General of Agricultural Environmental Affairs (*Dirección General de Asuntos Ambientales Agrarios, Perú*)

DGCCDRH General Directorate for Climate Change, Desertification and Water Resources (*Dirección General de Cambio Climático, Desertificación y Recursos Hídricos, Perú*)

DGIAR Directorate General for Agriculture Infrastructure and Irrigation (*Dirección General de Infraestructura Agraria y Riego, Perú*)

DGIP General Office of General Public Investments *(Dirección General de Inversión Pública)*

DPMT Department for the Protection of Mother Earth (*Dirección de Protección de la Madre Tierra, Bolivia)*

DRE Program for Rural Development with Equity (*Programa Desarrollo Rural con Equidad, Colombia*)

DS Supreme Decree (*Decreto Supremo, Perú*)

ECLAC Economic Commission for Latin America and the Caribbean (Comisión Económica para Latina América y el Caribe - CEPAL)

EEAP Study of the Current Status of the Paramos (*Estudio sobre el Estado Actual de Páramos, Colombia*)

EEQ Quito Electricity Company (*Empresa Eléctrica Quito, Ecuador*)

ELECAUSTRO Electricity Company "del Austro" (*Electro Generadora del Austro, Ecuador*)

EMAGUA Environment and Water Management Unit *(Entidad Ejecutora para MEDIUM Ambiente y Agua, Bolivia)*

EMF Environmental Management Framework (*Marco de Gestión Ambiental*)

ENA National Water Study (*Estudio Nacional de Agua, Colombia*)

ENCC National Climate Change Strategy (*Estrategia Nacional de Cambio Climático, Ecuador, Perú*)

ENSO El Niño Southern Oscillation *(Patrón de Circulación del Océano Sur)*

EOT Outline for Territorial Land Use Planning in Small Municipalities (*Esquema de Ordenamiento Territorial a nivel de pequeñas Municipalidades, Colombia*)

EPSA Drinking Water and Sanitation Provider (*Empresa Prestadora de Servicios de Agua, Bolivia)*

FAO Food and Agriculture Organization (Organización para la Agricultura y la Alimentación)

FEDEGAN Colombian Federation of Livestock Holders (*Federación Colombiana de Ganaderos*)

FINAGRO Agriculture Sector Financing Fund (*Fondo para el Financiamiento del Sector Agropecuario, Colombia*)

FOCAM Capacity Building for Climate Change Mitigation project (*proyecto "Fomento de Capacidades para la Mitigación del Cambio Climático", Ecuador*)

FONAG Fund for Water Protection (*Fondo para la Protección del Agua, Ecuador*)

FPS Productive and Social Investment Fund *(Fondo de Inversión Productiva y Social, Bolivia)*

FUNDESOT Foundation for Sustainable Territorial Development (*Fundación para el Desarrollo Sostenible Territorial, Colombia*)

GAD Decentralized Autonomous Government (*Gobierno Autónomo Descentralizado, Ecuador*)

GAD Departamental Autonomous Government *(Gobierno Autónomo Departamental, Bolivia)*

GADC Autonomous Departmental Government of Cochabamba (*Gobierno Autónomo Departamental de Cochabamba, Bolivia*)

GAMC Autonomous Municipal Government of Cochabamba (*Gobierno Autónomo Municipal de Cochabamba, Bolivia*)

GDP Gross Domestic Product *(Producto Interno Bruto)*

GEF Global Environment Facility *(Fondo Mundial para el MEDIUM Ambiente)*

GEFTF Global Environment Facility Trust Fund *(Fideicomiso del Fondo Mundial para el MEDIUM Ambiente)*

GIRH-MIC Integrated Water Resources Management and Integrated Watershed Management (*Gestión Integral de Recursos Hídricos y el Manejo Integral de Cuencas*)

GTTSACC Working Group on Food Security and Climate Change *(Grupo Técnico de TraLOW en Seguridad Alimentaria y Cambio Climático)*

IAvH Institute for Investigation of Biological Resources (*Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Colombia*)

IDEAM Institute for Hidrology, Meteorology and Environmental Studies *(Instituto de Hidrología, Meteorología y Estudios Ambientales, Colombia*)

IGP	Geophysical Institute of Peru *(Instituto de Geofísica del Perú)*
INAMHI	National Meteorological and Hydrological Institute (*Instituto Nacional de Meteorología e Hidrología, Ecuador*)
INE	National Institute of Statistics (*Instituto Nacional de Estadística, Bolivia*)
INEC	National Institute of Statistics and Census of Ecuador *(Instituto Nacional de Estadística y Censos, Ecuador)*
INEI	National Institute of Statistics and Information (*Instituto Nacional de Estadística e Informática, Perú*)
INER	National Institute for Energy Efficiency and Renewable Energies (*Instituto Nacional de Eficiencia Energética y Energías Renovables, Ecuador*)
IPCC	Intergovernmental Panel on Climate Change *(Grupo Intergubernamental de Expertos sobre el Cambio Climático)*
LENIA	Construction of National Strategic Guidelines for Environmental Research Project (*Proyecto de Construcción de los Lineamientos Estratégicos Nacionales de Investigación Ambiental, Ecuador*)
MAE	Ministry of Environment of Ecuador (*Ministerio del Ambiente de Ecuador*)
MADR	Ministry of Agriculture and Rural Development (*Ministerio de Agricultura y Desarrollo Rural, Colombia*)
MADS	Ministry of Environment and Sustainable Development (*Ministerio de Ambiente y Desarrollo Sostenible, Colombia*)
MCM	Million cubic meters *(Millón de Metros Cúbicos)*
MDG	Millennium Development Goals (*Objetivos de Desarrollo del Milenio*)
MEER	Ministry for Electricity and Renewable Energy (*Ministerio de Electricidad y Energía Renovable, Ecuador*)
MEF	Ministry of Economy and Finance (*Ministerio de Economía y Finanzas, Perú*)
M&E	Monitoring and Evaluation (*Monitoreo y Evaluación)*
MIC	Integral Watershed Management *(Manejo Integral de Cuenca)*
MICSE	Ministry for Coordination of Strategic Sectors (*Ministerio Coordinador de Sectores Estratégicos, Ecuador*)
MINAGRI	Ministry of Agriculture and Irrigation *(Ministerio de Agricultura y Riego, Peru)*
MINAM	Ministry of Environment (*Ministerio del Ambiente, Perú*)
MMAyA	Ministry of Environment and Water (*Ministerio de MEDIUM Ambiente y Agua, Bolivia)*
NDP	National Development Plan
NGO	Non-Governmental Organization *(Organización no Gubernamental)*
OECD	Organization for Economic Co-operation and Development *(Organización para la Cooperación y el Desarrollo)*
OGPP	General Office of Planning and Budget (*Oficina General de Planificación y*

Presupuesto, Perú)

OPI Office of Programming and Investments *(Oficina de Programación e Inversiones, Perú)*

PACC Climate Change Adaptation Program (*Programa de Adaptación al Cambio Climático, Peru)*

PCN Project Concept Note *(Nota Conceptual del Proyecto*)

PD Project Document *(Documento de Proyecto)*

PDD Departmental Development Plan (*Plan Departamental de Desarrollo, Colombia*)

PDES Economic Development and Social Plan 2016-2020 (Plan de Desarrollo Económico y *Social 2016-2020)*

PDO Project Development Objective (*Objetivo de Desarrollo del Proyecto)*

PDO Pacific Decadal Oscillation (*Oscilación Decadal del Pacifico*)

PEN Peruvian Nuevo Sol *(Sol Peruano)*

PESEM Strategic Sector Plan (*Plan Estratégico Sectorial Multianual, Perú*)

PGAT General Plan for Direct Technical Assistance (*Plan General de Asistencia Técnica Directa Rural, Colombia*)

PGAR Regional Environmental Management Plan (*Plan de Gestión Ambiental Regional, Colombia*)

PID Project Information Document *(Documento Informativo del Proyecto)*

PIP Public Investment Project (*Proyecto de Inversión Pública, Perú*)

PIU Project Implementation Unit *(Unidad Implementadora del Proyecto)*

PLANAA National Environmental Action Plan *(Plan Nacional de Acción Ambiental, Perú)*

PLANGRACC-A National Plan for Risk Management and Climate Change Adaptation in the Agricultural Sector *(Plan Nacional de Gestión de Riesgos y Adaptación al Cambio Climático en el Sector Agrario, Perú)*

PMA Environmental Management Plan (*Plan de Manejo Ambiental, Colombia*)

PME Master Plan for Electrification (*Plan Maestro de Electrificación, Ecuador*)

PMP Paramo Management Plan (*Plan de Manejo del Páramo, Colombia*)

PNBV National Plan for Good Living (*Plan Nacional de Buen Vivir, Ecuador*)

PNCC National Climate Change Program (*Programa Nacional de Cambio Climático, Bolivia*)

PND National Development Plan (*Plan Nacional de Desarrollo, Bolivia*)

PNGIRH National Policy on Integrated Water Resources Management (*Política Nacional de Gestión Integral de los Recursos Hídricos, Colombia*)

PNGIRH Integrated National Plan for Integrated Water Resources Management (*Plan Nacional de Gestión Integrada e Integral de los Recursos Hídricos, Ecuador*)

PNUMA United Nations Environment Programme *(Programa de las Naciones Unidas para el MEDIUM Ambiente)*

POMCA Territorial Land-Use and Watershed Management Plan (*Plan de Ordenación y Manejo*

	de la Cuenca, Colombia)
PORH	Water Resources Management Plan (P*lan de Ordenamiento del Recurso Hídrico, Colombia*)
POT	Territorial Land-Use Plan (*Plan de Ordenamiento Territorial*)
PRAA	Adaptation Project on the Impact of Accelerated Glacier Retreat in the Tropical Andes (*Proyecto de Adaptación al Impacto del Retroceso Acelerado de Glaciares en los Andes Tropicales, Colombia, Ecuador, Perú, Bolivia*)
PRASDES	Regional Andean Programme for Strengthening of Meteorological Services, Hydrology, Climate and Development (*Programa Regional Andino para el Fortalecimiento de los Servicios Meteorológicos, Hidrológicos, Climáticos y para el Desarrollo, Ecuador*)
PROASRED	Program for Potable Water, Sanitation, Solid Waste and Storm Water Drainage (*Programa de Agua, Saneamiento, Residuos Sólidos y Drenaje Pluvial, Bolivia)*
PROVIA	Global Programme of Research on Climate Change Vulnerability Impacts and Adaptation *(Programa Global de Investigación sobre los Impactos de la Vulnerabilidad al Cambio Climático y la Adaptación)*
PSI	Irrigation Sub-sectoral Program (*Programa Subsectorial de Irrigaciones, Perú*)
PSD-SB	Basic Sanitation Sector Development Plan 2016-2020 (*Plan Sectorial de Desarrollo de Saneamiento Basico 2016-2020, Bolivia)*
PUEAA	Plan for Efficient Use and Conservation of Water (*Plan de Uso Eficiente y Ahorro de Agua, Colombia*)
RCU	Regional Coordination Unit *(Unidad de Coordinación Regional)*
RIOCC	Iberoamerican Network on Climate Change *(Red Iberoamericana de Cambio Climático)*
RAC	Regional Advisory Committee *(Comité de Asesoría Regional)*
SCC	Subsecretary of Climate Change (*Subsecretaría de Cambio Climático, Ecuador*)
SDC	Swiss Agency for Development and Cooperation *(Agencia Suiza para el Desarollo y la Cooperación)*
SNC	Second National Communication to the UNFCCC (*Segunda Comunicación Nacional a la CMNUCC*)
SEMAPA	Municipal Potable Water and Sewerage Service (*Servicio Municipal de Agua Potable y Alcantarillado, Cochabamba, Bolivia*)
SENAGUA	National Water Secretariat (*Secretaría Nacional de Agua, Ecuador*)
SENAMHI	National Meteorology and Hydrology Service (*Servicio Nacional de Meteorología e Hidrología; in Ecuador and Peru)*
SENASBA	National Service for Sustainable Sanitation Services (*Servicio Nacional para la Sostenibilidad de Servicios de Saneamiento Básico, Bolivia*)
SERNAP	National Service of Protected Areas (*Servicio Nacional de Áreas Protegidas, Bolivia*)
SESA	South Eastern South America *(Sureste de Sur América)*
SFCC	Special Fund for Climate Change *(Fondo Especial del Cambio Climático)*
SIER	Regional Energy Information System (*Sistema de Información Energética Regional,*

	Ecuador)
SNAP	National System of Protected Areas (*Sistema Nacional de Áreas Protegidas, Ecuador*)
SNGA	National System of Environmental Management (*Sistema Nacional de Gestión Ambiental, Perú)*
SNIP	National System of Public Investment (*Sistema Nacional de Inversión Pública, Perú, Bolivia*)
SRES	Special Report on Emission Scenarios *(Informe Especial sobre escenarios de Emisión)*
SUIA	Unique Environmental Information System (*Sistema Único de Información Ambiental, Ecuador*)
UMSS	San Simon Major University, Cochabamba (*Universidad Mayor de San Simón, Cochabamba, Bolivia*)
UMSA	San Andres Major University, La Paz (*Universidad Mayor de San Andrés, La Paz, Bolivia*)
UNFCCC	United Nations Framework Convention on Climate Change (*Convención Marco de las Naciones Unidas sobre el Cambio Climático)*
UN	United Nations *(Naciones Unidas)*
UNDP	United Nations Development Programme *(Programa de las Naciones Unidas para el Desarrollo)*
UNEP	United Nations Environment Programme *(Programa de las Naciones Unidas para el MEDIUM Ambiente)*
UPRA	Rural Agricultural Planning Unit (*Unidad de Planificación Rural Agropecuaria, Colombia*)
USD	United States dollar *(Dólares de los Estados Unidos de América)*
VAPSB	Deputy Ministry of Potable Water and Sanitation (*Viceministerio de Agua Potable y Saneamiento Básico, Bolivia*)
VIPFE	Deputy Ministry of Public Investment and External Financing (*Viceministerio de Inversión Pública y Financiamiento Externo, Bolivia*)
VMA	Deputy Ministry of Environment, Biodiversity, Climate Change and Forest Development (*Viceministerio de MEDIUM Ambiente, Biodiversidad, Cambios Climáticos y de Gestión de Desarrollo Forestal, Bolivia*)
VRHR	Deputy Ministry of Water Resources and Irrigation (*Viceministerio de Recursos Hídricos y Riego, Bolivia*)
WAVES	Project: "Accounting of the Wealth and Value of Ecosystem Services" (*Contabilidad de la riqueza y valoración de los servicios eco-sistémicos*)
WGII	IPCC Working Group II, Vulnerability and Adaptation to Climate Change *(Grupo de TraLOW II del Grupo Intergubernamental de Expertos sobre el Cambio Climático)*
WB	World Bank *(Banco Mundial)*
WMO	World Meteorological Organization *(Organización Mundial de Meteorología)*
WSP	Water and Sanitation Program (*Programa de Agua y Saneamiento, administrado por Banco Mundial*)

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ANDES ADAPTATION TO THE IMPACT OF CLIMATE CHANGE IN WATER RESOURCES PROJECT (AICCA)

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PROJECT DATASHEET

Countries:	Plurinational Republic of Bolivia, Republic of Colombia, Republic of Ecuador, and Republic of Peru
Project Title:	Andes Adaptation to the Impacts of Climate Change on Water Resources Project (AICCA)
GEF Project ID:	5384
CAF Project ID:	CAF01/GEF5384
GEF Agency:	Development Bank of Latin America (CAF)
Project Executing Organization:	Consorcio para el Desarrollo de la Ecorregión Andina (CONDESAN)
Other Executing Partners:	**Bolivia**: Ministry of Environment and Water (Vice Ministry for Drinking Water and Basic Sanitation); **Colombia**: Ministry of Environment and Sustainable Development; Institute for Hydrology, Meteorology and Environmental Studies – IDEAM; **Ecuador**: Ministry of the Environment; **Peru**: Ministry of the Environment
GEF Focal Area:	Climate Change, Biodiversity
GEF Strategic Objective:	CC-SP1, CC-SP2, CC-SP3, BD-SP2
CAF Priority	Environmental Sustainability and Climate Change
Duration:	4 years
Estimated Starting Date:	January, 2017
Estimated Completion:	December, 2020

Financing Plan:

	USD	**%**
GEF Allocation:	9.696M	14.29
SCCF	8.456M	
GEFTF	1.240M	
Co-financing:		
Governments (In Kind)	12.38M	18.25
Other (In Kind)	45.36M	66.83
CAF (In Kind)	0.23M	0.33
CONDESAN (In Kind)	0.20M	0.30
Sub-Total Co-Financing	US$58,181	
Total Project Budget	**67.87M**	**100%**

Estimated Disbursements (CAF FY/US$M)	**FY1**	**FY2**	**FY3**	**FY4**	**Total**
Annual	1.94	2.91	2.91	1.93	**9.69**
Cumulative	1.94	4.85	7.76	9.69	**9.96**

Operational Focal Points Endorsement:

His Excellency Gonzalo RODRIGUEZ CAMARA GEF Operational Focal Point Vice Minister of Environment, Biodiversity, Climate Change, and Forest Management & Development Ministry of Environment and Water Plurinational Republic of Bolivia	Date of Endorsement: **8th April, 2013**
Ms. Claudia Vásquez MARAZZANI GEF Operational Focal Point Head of the Office of International Affairs Ministry of Environment and Sustainable Development Republic of Colombia	Date of Endorsement: **18th April, 2013**
Dr. Daniel ORTEGA GEF Operational Focal Point Minister of Environment Ministry of Environment Republic of Ecuador	Date of Endorsement: **9th April, 2013**
Mr. José Antonio GONZALEZ NORRIS GEF Operational Focal Point Director of the International Cooperation and Negotiations Directorate Ministry of Environment Republic of Peru	Date of Endorsement: **10th April, 2013**

1. STRATEGIC CONTEXT AND BASELINE SCENARIO

A. REGIONAL CONTEXT

1. **Background.** The proposed project is a regional operation which will include, as beneficiaries, the countries of Bolivia, Colombia, Ecuador and Peru. These Andean region countries constitute a unique group of nations who share a strong historical past, an inter-related present, and a challenging future. Three of them are amongst the short list of mega diverse countries in the world,[1] with critical ecosystems that span over regions and frontiers. Their economies rely significantly on renewable and non-renewable natural resource-based wealth (oil, gas, mining, and also banana, cocoa, coffee, palm oil and others). The four countries have dramatic topography, with unique basins that span from the heights of glaciated mountains (all countries have peaks at over 4,600 meters above sea level), some of which rapidly descend towards the lowlands along the Pacific coast to the West and the Amazon to the East. The implications of upstream activity of these steep basins are large for many of the ecosystems and economies that depend upon them.

2. The countries' topography and geographic location ensures they face a number of climate-change induced threats, such as warmer temperatures, uneven rainfall cycles, intensified El Niño events, and more severe natural extremes. The high Andes mountain chain has a strong influence on the hydrological cycle in the region, where 50 million people depend on the water resources which are made available by these unique conditions – in addition to their altitude, the Andes' general north-south orientation converts them into a natural barrier which intercepts humidity-carrying winds from both east and west, from the Amazon rainforest evapotranspiration and from the Pacific Ocean respectively. The precipitation that results from this generates extensive tropical glaciers at elevation, which function as water reservoirs for the basins. As a result of these conditions, the countries in the region are amongst those with the highest availability of water resources per capita. At the same time, within the region the tendency is for those locations with higher precipitation levels to inversely correlate with population density. Certain climatological phenomena severely alter the hydrological cycle in the region. Chief amongst them is El Niño event, which is due to an increase in the temperature in the Pacific Ocean fronting the coasts of Ecuador and Peru – the overall impact in the mountain regions is a decrease in average precipitation and water availability[2].

3. Climate change and variability impose critical threats to local ecosystems and economies. Although the global community is devoting its efforts to holding warming below 2°C to prevent "dangerous" climate change, current policies —in place and pledged— will very likely lead to warming far in excess of this level, with some plausible scenarios, based on present emission trends, putting the world on a path toward 4°C warming within this century. Whereas the whole Latin America and the Caribbean region is responsible for slightly over 10% of the greenhouse gas emissions globally (with Brazil and Mexico at the forefront), it is subject to some of the

[1] Megadiverse Countries is a term used to refer to the world's top biodiversity-rich countries. The current list includes 17 countries, of with Colombia, Ecuador and Peru are part.

[2] Secretaria de la Comunidad Andina, 2010. *El Agua de los Andes: un recurso clave para el desarrollo e integracion de la region.*, Coordinacion Tecnica: Gabriela Encalada y Ernesto Guhl Narrenti. Dot Print SAC Teodosio Parrenho no 124, Barranco, Peru.

greatest impacts, especially in countries and regions with less capacity to adapt their economies, institutions and population to the challenges lying ahead. Anticipated impacts for the Andean region look severe, with unprecedented high-temperature extremes in the tropical areas that will consequently lead to significantly larger impacts on agriculture and ecosystems, increases to the El Niño phenomenon (which basically intensifies precipitation and flood likelihood, jeopardizing the ability of current systems to drain storm water) and increased aridity and drought conditions in tropical and subtropical areas with consequent impacts on hydropower generation, to name but a few[3]

4. The four countries have been very active in recent years in promoting adaptation to climate change, and have been leading the agenda with ground-breaking projects counted among the first of their kind globally, with real on-the-ground investments. The GEF-funded, World Bank-implemented Integrated National Adaptation Project in Colombia, and the Regional Adaptation to the Impacts of Rapid Glacier Retreat in the Tropical Andes (PRAA) project in Ecuador, Bolivia and Peru, are good examples of the above.

5. With Andean countries both vulnerable to the impacts of climate change, and also taking the lead in promoting resilience of their economies and ecosystems, there is an important window of opportunity to continue working on climate change adaptation with the same set of counties and in a **regional, integrated fashion**. This will facilitate peer learning, testing of solutions and joint development. A more climate resilient Andean region will benefit all its members, which are, to some extent, interrelated. A new regional activity will thus capitalize lessons learned from previous efforts, expand and complement activities carried out, and raise the bar to the level at which they can influence the national and regional levels.

6. **Global Significance and Threats**. Ecuador is one of the world's mega diverse countries. Project interventions in Ecuador to be funded with GEF Trust funds from the Biodiversity Focal area are targeted to maintain globally significant biodiversity and the ecosystem goods and services that it provides to the society at both the local and global scales. The areas of intervention of the project in Ecuador include the Cayambe Coca National Park, and the Machángara River Basin and watershed within the Cajas National Park. The biodiversity in these areas are consistent with the upper broader Amazon watershed, and include páramo, wetlands and Andean forests. The Ecuadoran Amazon has 800 species of fish, including three types of piranhas, 350 Species of reptiles, more than 300 species of mammals, and thousands of species of plants and trees. It is believed that one acre of rainforest in the Ecuadoran Amazon may be home to 70,000 species of insect, asserting its recognition as one of the world's 17 megadiverse countries. The habitats in this part of the Amazon are also a fundamental part of the last habitats of emblematic endangered species such as the Andean condor (*Vulturgryphus*), the spectacled bear (*Tremarctos ornatus*) and the puma (*puma concolor*). The Coyambe Coca National Park itself is known to be home to 106 species of mammals, 395 species of birds, 70 species of reptiles, and 116 species of amphibians. The Cajas National Park is known to be home to 44

[3] **Magrin**, G.O., J.A. Marengo, J.-P. Boulanger, M.S. Buckeridge, E. Castellanos, G. Poveda, F.R. Scarano, and S. Vicuña, 2014: Central and South America. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Barros, V.R., C.B. Field, D.J. Dokken, M.D. Mastrandrea, K.J. Mach, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1499-1566.

species of mammals including the endemic Cajas water mouse (*Chibchanomys orcesi*) and Tate's shrew opossum (*Caenolestes tatei*), and 17 species of amphibians. The biodiversity in the project intervention areas is also represented by more than one hundred endemic plants and twenty-six species of endemic birds, of great ecological, genetic, scientific, and bio-prospecting value. The Andean Páramo is an ecosystem that regulates water resources that are important for human consumption in Andean countries, providing over 60% of the water supply to these countries, and is responsible for the generation of 73% of the hydroelectric power in Colombia, 72% in Ecuador, and 81% in Peru. Services delivered by the Andean region's ecosystems, help to maintain production of food and fibre, deliver vital regulating services at the global and local level, support tourism and recreation and deliver other un-marketed cultural services, in addition to their role in regulating the global climate.

7. The direct threats to biodiversity in the areas targeted for project intervention in Ecuador can be generally summarized to include illegal commercial hunting for wild meat, which leads to the reduction, and in some cases can lead to the eradication of wildlife species if not addressed. The advancement of agriculture and improper or illegal extraction of timber are resulting in deforestation and threatening globally significant biodiversity, while also reducing the resiliency of forests in facing the impacts of climate change. Road construction, which contributes to illegal timber extraction, illegal wildlife trade, population growth, and illegal settlement within protected areas, is also a major threat. The targeted areas are also threatened by climate change, which affects the distribution of species and threatens to increase in the frequency and magnitude of floods, droughts and diseases.

B. SECTORIAL AND INSTITUTIONAL CONTEXT

8. According to the IPCC[4], there is robust evidence that climate change will seriously affect the availability, access, and use of fresh water resources, that is to say, water security. [5] Simultaneously, water demand is rising in all parts of the world, boosted by population growth, increased water consuming in important economic sectors, improved water supply in cities and in general, the predominating model of "consuming society". The Andean region is no exception to this.

By contrast with increased demand, total natural water discharge is a given factor that cannot be increased by human intervention (other than usually costly and infrastructure-intensive transfers between watersheds). As a result, the availability of clean water for people and for economic activities tends to reduce, because of pollution of basins and water stocks, the degradation of large territories and ecosystems that provide water retention capacity and natural regulation of water discharges (e.g. high altitude tundra ecosystems and moorlands - *páramo*s and *bofedales*),), and the growing impacts of climate variability and climate change (CV/CC) on the hydrologic cycle. The water cycle is changing, with glaciers receding dramatically on the Andean cordillera (a 20%+ loss on glacier surface area is a commonly quoted figure for Andean

[4] IPCC 2014: Climate Change Synthesis Report: Summary for Policy Makers. Downloaded from: http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf

[5] Cited by Mileham, Lucinda, 2010. *Seguridad hídrica y cambio climático: hechos y cifras*. En: SciDevNet. Ver: http://www.scidev.net/america-latina/politica/especial/seguridad-h-drica-y-cambio-clim-tico-hechos-y-cifras.html.

tropical glaciers over the past 30 years)[6], more severe downpours followed by longer dry seasons, and varying evapo-transpiration conditions, all of which alter the water balance of any given basin and challenge the economies and ecosystems that are built around them. The likelihood and intensity of water-related extreme weather events is also increasing in the region (droughts and devastating wildfires in Ecuador 2012, severe floods in Colombia 2010-2011, floods and landslides in the Cuzco region of Peru 2011, or intense floods in Bolivia 2013, to name but a few). As reported in the PRAA Project Appraisal Document (World Bank, 2007), '*glacier retreat results in a temporary increase in runoff, severely affecting water availability. For large urban centers such as Quito in Ecuador (pop. 2.0 million) where glaciers (Antisana and Cotopaxi in particular) supply one-third of Quito's drinking water, or La Paz and El Alto in Bolivia (pop. 2.3 million) where the glaciers of the Cordillera Real have until recently supplied 30–40 percent of potable water, the changing circumstances can affect costs of supply and ultimately the ability of urban centers to maintain vibrant economies'*. According to Rabatel (2013), glacier retreat in the tropical Andes over the last three decades is unprecedented since the maximum extension of the Little Ice Age (LIA, mid-17th-early 18th century), with a negative trend in mass balance over the last 50 years, which exceed the average mass balance calculated on a global scale. Severe climate-related disasters are expected to increase in Bolivia, with droughts and La Niña-related floods can be expected in the lowlands, while increasing temperatures suggest higher risks of drought in the Andes (Seiler, et al., 2013).

9. The growing negative balance between water availability and water demands has the potential to trigger conflicts among water users and sectors, especially in countries with inadequate institutional capacity for water governance (which is the case of most Andean countries).Traditionally, water has been managed using the political sub-divisions within countries. However, water basins often do not follow those divisions, thus hindering the full adoption of integrated water resources management practices. The context on each of the four participating countries on this topic varies. Resource planning, allocation and management systems are the basis for sustainable development, and their strengthening and tailoring to better integrate climate variability into all sectors of development constitutes a sound adaptation strategy. An unpredictable water cycle is a factor that will affect several sectors downstream, including agriculture, drinking water and water for sanitation services, hydroelectricity, among others. It also represents a safety and health risk when in too much or too sudden supply, overwhelming the storm drainage systems. The lack of an integrated approach to the water security issue therefore exacerbates these sectors' vulnerability.

10. Given the similarity of shared physiographical, cultural, ecological, and socioeconomic conditions amongst the four countries, it is expected that sectorial knowledge and experience generated in adapting to VC/CC considerations in any of the beneficiary countries will be applicable to all or most of the other participant countries. Consequently, the project will focus on specific water-dependent sector in each beneficiary country, with said selection based on each country's pressing needs. The selected sectors include water and sanitation (focused on rainwater

[6] The World Bank. 2014. Turn Down the Heat: Confronting the New Climate Normal. Washington, DC: World Bank. Chapter 3: Latin America and the Caribbean.

management), highland agricultural productive systems, hydroelectric power, and small-scale agricultural irrigation.

11. **Urban storm water drainage** in **Bolivia**: Accelerated urbanization of peri-urban areas combined with uncontrolled expansion of urban development within cities in Bolivia have put highly vulnerable urban and peri-urban areas at risk to flooding events. The overflow of tributary rivers, torrents and/or gullies in urban and peri-urban areas, have caused or contributed to -among others-: loss of vial platforms, siphoning, collapse of walls, damage to public and private property, as well as damage to storm drainage systems, sewer systems, flood ponds, wastewater treatment plants, overflow of sewage collectors, and in extreme cases, the loss of life. For example, in February 2002 the city of La Paz suffered torrential rain which caused landslides and heavy flooding; 5,000 persons were affected of which 63 lost their lives. Nationally, no detailed information is available, but it is recognized that the control of rain water discharges and flooding in urban areas needs to be addressed. Peri-urban and urban rainwater drainage is part of the comprehensive sector policy on drinking water and basic sanitation.

12. At the institutional level in Bolivia, the Ministry of Environment and Water (MMAyA), specifically the Deputy Ministry of Drinking Water and Sanitation (VAPSB) by Supreme Decree 29894 has allocated among its powers, assist in the formulation and implementation of policies, plans and standards for the development, provision and improvement of storm drainage services. The Deputy Ministry of Drinking Water and Sanitation (VAPSB) finances projects for draining rainwater, under the Drinking Water Program, sanitation, solid waste and storm-water drainage (PROASRED), and therefore indicated as the main counterpart of the Project in Bolivia. The Plan for Economic and Social Development 2016-2020 within the comprehensive development framework to live well, and as part of the Patriotic Agenda 2025, establishes thirteen pillars on which the Deputy Ministry of Drinking Water and Sanitation (VAPSB) is directly responsible for the following: to ensure the availability of water and its sustainable management and sanitation for all Bolivia, the VAPSB is working on the construction of a new environmental model in the country within the framework of the complementarity of the rights of individuals and societies and Mother Earth, with the effective capacity to promote the development of sustainable production systems and significantly reduce environmental pollution, in the context of climate change, which is one of the priorities of this period. This model should not limit the potential of the productive development of the country, but regulate, limit, and control.

13. Also, based on a diagnosis of the National Public Investment System (SNIP), prepared in 2014 by the Water and Sanitation Program (WSP), it was concluded that SNIP regulations and methodologies for the formulation and evaluation of water and sanitation projects will have to be revised to align them with new guidelines and policies such as the Human Rights to Water and Sanitation, as well as to improve their contents related to management of water resources with a watershed, climate change, risk and disaster management. WSP-Bolivia is currently preparing a "Methodological Proposal for the Updating of Minimum Contents for Pre-Investment Studies of Water and Sanitation Projects, under the Criteria of Differentiated Application". Under the activities planned for Bolivia the proposed Project will closely align itself to the results of this work, considering that the VAPSB decided to extend the approach and scope of its "Technical Regulation System for the Design of Storm Drainage Systems".

14. Consistent with the above and with information presented in the Second National Communication, changes in climate in Bolivia are expressed not only in the intensity of extreme weather events, but also in exacerbated periodic and chronic shortages of water during periods of drought in the lowlands and valleys of the arid and semiarid parts of the country and generally by reducing the availability of water. Moreover, there are indicators of increased frequency of flooding in downstream areas, increasing the need to adapt not only to droughts and chronic water shortages but also to heavy rainfall to prevent flood damage to infrastructure, including drainage infrastructure, as is the case of Cochabamba. Based on climate change scenarios developed for different areas of the country, it is reasonable to predict that Bolivia will retain this chronic water shortage and significant flood damage from more intense rains even while many of the wetlands will see increased precipitation. Additionally, the water sector has been identified as being the most vulnerable to climate change, as has been observed by the impacts of El Niño and La Niña in Bolivia. To this end, the Ministry of Environment and Water has aggressively promoted action on adaptation of water resources to climate change by implementing projects in cities like El Alto, La Paz, Cochabamba and Tarija, including the construction of a Dam that can provide water to a city like Cochabamba.

15. The use of SCCF resources under the AICCA project will target activities that are aligned with the following objectives of the National Mechanism on Adaptation to Climate Change in Bolivia, as reported in the Second National Communication: To articulate adaptation actions with other operational measures which are reflected either in development programs (Watershed Management, Irrigation Projects and Programs, Health Programs, etc.), or on specific projects so that they integrate and devise the need to include actions to reduce national vulnerability to climate change; To promote the integration of adaptation actions at community, municipal and departmental level; and To support the country's response to climate change transforming the responses into opportunities for discussion and strategic planning at all levels: local, municipal, departmental and national. Including the climate change issue in processes such as the National Dialogue, community and municipal forums, research networks, think tanks, etc. Specifically, SCCF resources in Bolivia will be used in support of the following prioritized interventions, consistent with the priorities defined in the Second National Communication and the National Mechanism on Adaptation to Climate Change: Storm water drainage Master Plan for the metropolitan area of Cochabamba; as a pilot adaptation project with at least 30% participation by women, designed and implemented to contribute to the control of flow of storm water drainage in each one of the two selected areas in Cochabamba (including adequate M&E systems); Reforestation project as river management technique for protection of water sources, soil stabilization, and reduction of the impact of CO_2 emissions; Strengthening resilience through education and awareness about integrated solid waste management with a focus on storm water drains; Technical Regulation upgrade for the design of storm sewer systems that incorporate CC / CV in the preparation of public investments in storm drain projects; solid waste management guide that incorporates mechanisms for storm drain cleaning; industrial solid waste management guide in the field of civil construction (rubble); and Curriculum content on the CC / CV impacts as part of postgraduate training programs incorporating factors affecting threats (hydrological and hydraulic models), risk management, and management of urban runoff.

16. **Highland agricultural systems** in **Colombia**: In the Colombian Andean Highlands the agricultural sector depends on the ecosystem services provided by the *páramos*, which are

critical ecosystems for the provision of environmental services such as water storage and production. Faced with the growing threat of climate change, ecosystem response to increasing temperature, will include a move upslope to higher altitudes, which, in addition biodiversity loss and increased spatial isolation, will severely affecting their water regulation functions. The Orobioma (Mountain) Alto Andino is identified as one of the most sensitive and vulnerable ecosystems, with high and very high potential impacts predicted for 70% of this ecosystem (43,000 km^2 – about the size of Denmark) for the period 2011 to 2070. Impacts on this ecosystem will in turn result in very high potential impacts which are forecasted for the period 2011-2040 for the agricultural sector with respect to annual or seasonal crops, located in different parts of the departments of Antioquia, Tolima, Boyacá, Córdoba, Cundinamarca and Santander, which are typically the domain of small-scale farmers, and represent approximately 71% of the areas where coffee is grown. Besides that, high and very high potential impacts are expected in more than 50% of the area under pasture. Totalling the areas that could receive high and very high reduction impacts on rainfall in the period 2011-2040, a 47% of the areas of peasant economy in the country would be affected[7].

17. Colombia's Second National Communication to the UNFCCC prioritizes the management of natural resources through a series of spatial planning tools. In this context, the SCCF will support the inclusion of climate change variables and their effects in different land use management plans, as part of the risk management arrangements to be included in spatial planning instruments. Under current legislation, environmental authorities in Colombia are required to develop, among others, regional environmental management plans (PGAR), territorial land use and watershed management plans (POMCA), water resources management plans (PORH), management plans of the most important ecosystems in their jurisdiction (wetlands, *páramos*, mangrove swamps, etc.) (PMAP), and the promotion of Plans for Efficient Use and Saving of Water (PUEAA). Also, the formulation of POMCAs, must include proposals for investments by national, regional or municipal entities. With SCCF support, the inclusion of CV/CC considerations into the guidelines for the formulation of POMCAs will be an innovative and important next step to improve this instrument, given the vulnerability to climate of the hydrological cycle in watersheds and therefore water availability and use of this resource in crucial sectors (agriculture, drinking water supply, and hydropower). The National Agricultural Technical Assistance Subsystem provides a comprehensive technical support service, especially for small and medium farmers, and is designed and planned in accordance with a General Plan for Direct Rural Technical Assistance (PGAT), based on agro-ecological characteristics of the municipality and with the basic guidelines for managing renewable natural resources. The PGAT aligns with the Municipal Development Plans and the Territorial Land Use and Watershed Management Plan (POMCA) prioritized under the country's Second National Communication to the UNFCCC as a key spatial planning tool, therefore, SCCF support will actually facilitate the incorporation of CV/CC criteria into the guidelines to make agriculture more adaptive towards changing climate conditions at multiple levels of planning and management.

18. The Climate Change Directorate of the Ministry of Environment and Sustainable Development (MADS) during the year 2015 developed a roadmap and guidelines for the

[7] SCN, 2010. Segunda Comunicación Nacional de Colombia ante la CMNUCC. IDEAM, Bogotá, Colombia.

incorporation of climate change in the POMCA, and during the 2016 period has provided technical assistance to the regional autonomous corporations in incorporating this component into the above-mentioned spatial planning tools. The Corporation of BOYACA (CORPOBOYACÁ) currently participates in this technical assistance offered by MADS with another watershed, and the SCCF support will build on this baseline and expand the inclusion of CV/CC to the Lake Tota watershed. The current baseline interventions by MADS coupled to SCCF support will be direct contributions to the efforts by the country to comply with international obligations such as those declared under the INDC, in which Colombia committed to 100% of its national territory with formulated Territorial Climate Change Plans and prioritized watersheds incorporating climate change into their instruments for environmental planning and management.

19. **Small and medium size hydroelectric power sector in Ecuador.** Ecuador has declared water and energy production as part of its strategic investment sectors, and has developed a state policy to change the energy matrix in order to encourage the production of renewable energy and reduce its dependence on fossil fuels. Generation of hydroelectric power is one of the main focuses of attention and public investment. Since 2008 when the new Constitution Law (No. 15) was approved, Ecuador started to invest strategically in the electricity sector, mainly through public investments for the construction of large and medium hydroelectric plants and thermal generation. The economic importance of this sector is reflected in the fact that hydropower accounts for nearly 58% of total electrical energy produced, and it is aimed to reach 85% by 2016. In terms of installed capacity, currently hydroelectric plants have 48% of total electricity generation capacity nationally, at 2,256 MW; by 2022 it is aimed to increase installed hydroelectric capacity to over 7,000 MW[8]. In this context, the variability of rainfall patterns and the occurrence of extreme weather events could affect the water balance, and these are exacerbated by climate change, which may cause increased water stress in regions of Ecuador. Water supply in these regions depends to a significant extent on the ecological integrity of the *páramos* and forests; it is widely known that the biodiversity of such ecosystems is particularly sensitive to climate change, as well as to disturbances by economic activities and human-induced occupations. Thus, changes in patterns of melting glaciers, storage and runoff may affect the integrity of these ecosystems and disrupt river systems, with impacts on water availability for several sectors downstream, including the necessary flow to ensure hydroelectric generation. Additionally, it is known that extreme climatic events can impact electricity generation through flooding of hydroelectric plants; studies indicate that up to 590 MW of energy generation could be lost through this factor[9]. Finally, strong erosion events, connected to rain storms, would result in siltation of reservoirs, blocking power-generating turbines[10]. Given the Governments´ priority on changing the country's energy matrix, and within this scope, the projected increase of hydroelectric power generation - whose capacity and efficiency depend largely on the hydrology of the watersheds- the care for ecosystems and biodiversity in these basins needs to be addressed in parallel with other hydroelectric sector-specific adaptation measures to CC/CV.

20. The activities proposed to receive SCCF support in Ecuador constitute a concrete contribution to overcome three of the primary barriers, gaps and needs identified in the Second

[8] Source: "Plan Maestro de Electrificación PME 2013 – 2022". (CONELEC, 2012).
[9] Source: "Plan Maestro de Electrificación PME 2013 – 2022". (CONELEC, 2012).
[10] Hamadudu, B. et al., Assessing Climate Change Impacts on Global Hydropower Energies. 2012.

National Communication on Climate Change, Ecuador-2011, specifically regarding: (i) Need to insert the variable of adaptation to climate change in the planning, regulations and budgets of sectoral governmental institutions; (ii) Capacity building to use and adapt vulnerability and adaptation methodologies; and (iii) Facilitating access to environmentally sound technologies. Proposed project interventions to benefit from SCCF support in Ecuador also are consistent and align with national policies and programs including the National Plan for Good Living, the Policy for Change of the Energy Grid, National Strategy for Equality and Eradication of Poverty, National Biodiversity Strategy and Action Plan (NBSAP) (formally launched on 21st November 2016), and the National Climate Change Strategy, the latter derived from the international commitments made by the country to the UNFCCC. Other international commitments are also addressed through the project's alignment in Ecuador with Aichi Targets 4,5,7,11,14,15, and 19 as further explained in Section IIA of this document.

21. The project is specifically linked to results 4, 13 and 16 of Ecuador's NBSAP. Output 4 is related to the management of national policies to ensure responsible consumption of biodiversity goods and services (including water resources); this will be addressed primarily by component 2 of the project through the inclusion of adaptation to climate change in hydroelectric sector policies, but also by components 1 and 3 of the Project that will generate knowledge and tools to promote resilience and water security, with the potential to be up-scaled and replicated at the national level. Outcome 16 of the NBSA provides for the restoration of degraded habitats to increase the resilience of ecosystems and the services they provide, and NBSAP outcome 13 determines the conservation of the natural heritage through the National System of Protected Areas (SNAP). Both restoration and conservation are adaptation strategies that the AICCA project will implement in the watersheds selected for Ecuador that are areas of influence of the SNAP, thus strengthening it in its component addressing vulnerability to climate change. Other specific linkages of proposed SCCF support are with Goal 7 of the National Plan for Good Living - National Policy 7.6: To manage the water patrimony of the country in a sustainable and participatory manner, with a focus on watersheds and ecological flows to ensure human right to water; with the National Strategy for Equality and Eradication of Poverty through Guideline 9: Protect watersheds and micro-watersheds and build processes of shared social management of natural resources between the State and communities to ensure the sustainability of Common goods and food sovereignty; with Guideline 8: Strengthen capacities and institutions, Decentralized Autonomous Governments, rural communities and urban neighborhoods, to improve risk management, mitigation and adaptation to climate change from a territorial perspective.

22. Consistent with the Third National Communication on Climate Change in Ecuador (currently in the final stage of preparation), the AICCA Project will capitalize on information and knowledge generated in recent years, for example through the application of new and future climate data available for the country. Likewise, lessons learned will be embraced from the experiences gained through emblematic adaptation projects, led in recent years by the Ministry of the Environment of Ecuador, which focused on increasing the resilience of high Andean ecosystems and watersheds that are key providers of water resources (under the Adaptation to the Impact of Rapid Glacier Retreat in the Tropical Andes" by the World Bank - PRAA), and in reducing the vulnerability of hydroelectric plants to climate threats (CHECC). It is also worth highlighting the coherence of the project with the Paris Agreement on Climate Change (COP

21), which for the first time presents a specific qualitative goal in adaptation in Ecuador, which is to increase the capacity for adaptation, resilience, and reduce vulnerability to climate change.

23. **Small size irrigation** in **Peru**: Consistent with the information presented in the Second National Communication, the National Strategy for Climate Change is the framework for all the policies and activities concerning climate change that take place in Peru. This is complemented by the Action Plan for Adaptation and Mitigation Against Climate Change, formulated through the National Climate Change Committee. Peru also has in place a National Environmental Policy, that includes among its goals, the adaptation of the population and its activities to climate change and the establishment of adaptation measures aimed at sustainable development. The Second National Communication identified the implementation of Local Integrated Assessments (LIA) to evaluate the vulnerability and the processes of adaptation to the climate change effects of the different systems, be they productive agriculture, socio-economic, or agricultural for grazing pastures, and have led to the formulation of Regional Adaptation Strategies and initiation in the design of pilot adaptation projects. The Second National Communication identified the following priority considerations: (i) Information, research and systematic observation, to reduce the uncertainty with regard to sectoral and territorial vulnerability and to provide information for decision-making. (ii) Strengthening of capacities, education and awareness raising, leading to the construction of technical and human resources and to increased social awareness to face climate change impacts. (iii) Policies, legal framework and instruments to integrate adaptation to climate change in development planning, resting on tools such as disaster risk management. (iv) Technology, through actions towards the generation and application of technologies for both, the management of knowledge and the construction of infrastructure and design of services, including and articulating the knowledge and ancestral practices of the social groups of the country. (v) Financing, as an essential mainstay, aimed at introducing new lines and innovative instruments in the application of funds for adaptation actions; and to expand and adjust the existing mechanisms and platforms, including cooperation and international financing, the flows from the private sector and the public budget. The specific activities of the AICCA project in Peru to benefit from SCCF support are aligned with priority consideration (iii) above, in the promotion of climate change considerations and inclusion as a cross-cutting issue in public investment policies, in risk management and regional planning schemes, strengthening of institutionality and of the governance processes within the framework of decentralization for climate change management at the sector level, which in this case is focused at the irrigation sub-sector as a pilot adaptation project. Climate Change Variability and Adaptation traditionally is not incorporated as a cross-cutting theme in public policies and/or planning and management tools in Peru, and is thus an innovative approach to public policy.

24. As a follow-up from Peru's Second National Communication**,** and according to the Third National Communication on Climate Change (*In Process*, MINAM, 2016), water resources in Peru are divided into three watersheds: the Atlantic, with 97.3% of available water and 33, 5% of the population; Pacific with 2.2% water but 62.3% of the population; and Lake Titicaca with 0.6% water and 4.2% of the population (ANA, 2012). While Peru has 77, 600 m3 of fresh water per capita, the highest availability in Latin America, there is a shortage of water, which responds to an uneven distribution over the territory, due to inadequate distribution of the population. The coast is the region that has the highest proportion of the Peruvian population in large cities, but has the lowest proportion of water. In addition, limited accessibility and inefficient use aggravate

the situation (UNDP, 2013). Climate change could intensify the water stress due to accelerated glacier melting that have historically contributed to irrigate the coast in times of low water in the Andean region.

25. About 95% of tropical glaciers in the world are in the countries of the Andean Community, of which Peru is home to 71%. This immense glacier wealth is the source of much of the water used for human consumption, agricultural activities, industrial activities and power generation (MINAM, 2014). According to the latest inventory of glaciers conducted by the National Water Authority (ANA), the 2,697 tropical glaciers are distributed in 19 snowy mountain ranges over 4,000 meters, equivalent to an area of 1,298.5 km^2. Climate change is already having a significant impact on the glaciers of Peru: a loss of 42% of the glacier surface in the last 40 years is estimated. This implies a reduction of ice volume between 32 and 35 km^3, affecting mainly the smaller glaciers (ANA, 2014). The melting of glaciers meant an increase of glacial lakes. Currently, a total of 8,355 lakes which are invaluable water reserves were recorded, even though it implies a risk from populations located in the lower parts of the basins (MINAM, 2014).

26. Agriculture is critically important for Peru's economy, society and culture, producing most of the staple foods, maintaining a positive trade balance and contributing on average 7% to the GDP (2008 -2012). In turn, farming and livestock-related activities play an important role in poverty alleviation and food security. About half of the rural population in Peru live in poverty, and most of it depends on agricultural activities in two main ways: directly through production for own consumption and for sale of excess in local markets, and providing employment as seasonal labour force in farms. The agriculture sector is by far the main user of water resources with more than 16,000 MMC/year (80% of the national water use) allocated to irrigation. Peru has 2.3 million farming units (most of them small and medium size framers) that reach 7 million hectares of farming land. Of those, almost 2.6 million hectares are part of an irrigation system involving more than 800,000 irrigators. The agriculture sector is particularly sensitive to climate variability and climate change, not only during episodes of El Niño (1983 and 1997/98), which led to high economic losses (estimated at US$1,064 M and US$612 M respectively) and food insecurity through increases in the price of and access to basic staples, but also through more frequent fluctuations in rainfall and temperature. Thus, between 1995 and 1997, agricultural losses due to climate events were estimated to be around 2,597 million Soles[11]. The small size irrigation infrastructure in the high sierras tends to be rustic and quite vulnerable itself to climate-induced events such as flooding and landslides. For these reasons, small size irrigation is key to the sustainability of agriculture in Peru in the context of CV/CC and therefore its sectorial focus.

27. Peru has been working to include climate related risks considerations - adaptation to climate change- into policies, strategies and regulatory instruments at different levels and productive sectors. Focused on the sub sector of small scale irrigation, the SCCF support seeks to facilitate collaboration between the existing sectorial Technical Group on Food Security and Climate Change (GTTSACC) at the Ministry of Agriculture and Irrigation (MINAGRI) and the General Directorate of Public Investments (DGIP) at the Ministry of Economy and Finance (MEF), to

[11] MINAG 2012a. *Plan de Gestión de Riego y Adaptación al Cambio Climático en el Sector Agrario* (PLANGRACC-A), Período 2012-2021. Ministerio de Agricultura. Lima. Perú.

ensure that adjustments and proposals of technical instruments and methodologies are inclusive of CV/CC and are institutionalised in the relevant government instances.

C. HIGHER LEVEL OBJECTIVES TO WHICH THE PROJECT CONTRIBUTES

28. **Value Added of CAF**. The project objectives are aligned with CAF's Adaptation to Climate Change Program, CAF's Mitigation Program, and CAF's agenda for Environmental Sustainability and Climate Change under its Integrated Vision for Sustainable Development. CAF plays a key role in climate change abatement, and in the promotion of renewable and sustainable energy sources. Since 1999, the Institution established its Latin American Climate Change Program – PLAC (for its acronyms in Spanish). The activities undertaken by the program target actions related to the severe problem of climate change phenomena and their impacts. CAF supported the establishment and strengthening of institutions in an effort to integrate both the public and private sectors of the countries in the region into emerging activities that entail Greenhouse Gases (GHG) emission reductions markets through the Clean Development Mechanism (CDM), and within the scope of the United Nations' Framework Convention on Climate Change (UNFCCC). As PLAC strengthened its lines of action, CAF positioned itself as a leading regional development bank in the GHG emission reduction market in Latin America. Two high-ranking GHG emission reduction purchase and sale arrangements were articulated by CAF: i) The CAF-Netherlands CDM Facility, accounting for ten million tons of GHG, and ii) the Ibero-American Carbon Initiative between CAF and the Spanish Government, accounting for nine million tons of GHG.

29. Regarding climate change adaptation, and through its Risk Management and Prevention Program, CAF has attended the prevention, abatement and socio-economic and environmental impacts associated to natural disasters and climate change. The program targets four working areas: risk management and abatement of El Niño Phenomenon, contingencies derived from natural disasters; risk prevention; support to countries in the identification of vulnerabilities and climate change adaptation actions. Through the CAF-Netherlands CDM Facility and the Ibero-American Carbon Initiative, CAF promoted CDM project in the LAC region. Projects that achieved reductions of 12.1 million tons of CO^2, all of them coming from the Latin American region and represented additional revenues in the projects for around EUR 120 million. After the first commitment period of the Kyoto Protocol, CAF made a review of the scope of PLAC and as a result of this review, launched a new program with a broad approach for Adaptation and Mitigation.

30. CAF has progressively diversified its portfolio and includes substantial investments in Bolivia, Colombia, Ecuador, and Peru in sectors directly relevant to the objectives of this project: climate change adaptation, potable water, sanitation, drainage, irrigation, solid waste management, institutional strengthening, management guide for water resources in mountain drainage basins affected by climate change; and natural disaster response. CAF also manages the Latin American Program on Climate Change fund, which focuses on mitigation of climate change, adaptation to climate change and carbon markets. Specifically, CAF has been instrumental in the development of policy instruments for the mitigation of greenhouse gases, nationally appropriate mitigation actions (NAMA) in the sectors of municipal solid waste, agriculture, the refrigeration industry, for energy efficiency on the demand side, and in power

generation using biomass residues.

31. Consistent with the above, CAF is a strategic partner for the national governments of Bolivia, Colombia, Ecuador and Peru to build local, national and regional capacities needed to achieve the sustainable development goals. Adaptation to climate variation and change both for impact assessment and for policy development, low carbon development path, increasing resilience to face the effects of global climate change and the sustainable use of natural resources are key initiatives CAF is currently working with the cross section of public and private sectors and partnered, among others, with the of Ministries of Environment, Energy, Agriculture, Trade and Finance. CAF has a unique present and background record in supporting and implementing projects, programs and financial operations not only aimed for a single country, but to enhance sound regional integration between CAF country members. CAF´s success in the region is linked to 46 years of work with governments, private sector and social organizations at regional, national and local levels, complying successfully with CAF´s mission to promote sustainable development and integration in partnership with country members.

32. Current related investments implemented in the Andean Region include the Improvement of water supply and sanitation systems for 109 municipalities in Colombia (COL/00133), the Neighborhood for Better Live hood (Barrio para Vivir Mejor)Program in Ecuador(ECU/9117), the Energy Efficiency project in Ecuador (ECU/2404), the Electricity sector integrated approach project in Ecuador (ECU/8959), the Daule river conservation plan for Ecuador (CAF/0510/16), the Reduction of the Toachi Pilaton hydroelectric plant´s vulnerability to the effects of climate change with a focus on Integrated Adaptive Watershed Management (MATCH) in Ecuador (CAF/AF003), the Reduction of the climate vulnerability and flood shed risk in semi urban areas in Ecuador (CAF/AF002), the Irrigation and Agricultural Drainage Projects of Olmos, Chavimochic II and Majes-Siguas II in Perú (PER/CFA7705), the National Forest Sustainable Development Program in Peru, the Water Resources Integrated Management Programs for the watersheds of Huancabamba, Olmos, Jequetepeque, Chinchipe, Majes, Lurin, Chillón and Rimac rivers in Peru (PER/CT320), the El Niño (ENSO) Prevention Integrated Program (CFA8903), the Ayninacuy project to strength live hoods in climate change vulnerable high Andean communities in Peru (CAF/AF001), the Water and Sanitation Integrated Approach Program (MIAGUA-IV) in Bolivia (CFA9334), the Irrigation Integrated Approach (MIRIEGO) in Bolivia (CFA8795), the Bio trade Andean Program in Colombia, Ecuador and Peru, the CAF Climate Change Vulnerability index project for Latin America, including Arequipa, La Paz, Guayaquil, the CAF NAMA preparation project for solid waste, transportation, energy efficiency sectors, key agricultural products value chains and landfills, the CAF Carbon, Water footprint project for Guayaquil, Cuenca, Lima, Arequipa, La Paz, Santa Cruz de la Sierra and for key agricultural products value chains, and the CAF Credit Line for Green Business and Energy Efficiency Program for Financial Institutions in Latin America.

33. Furthermore, the project is aligned with CAF's commitment to the Sustainable Development Goals and its goals to eliminate extreme poverty by offering an innovative approach to strengthen the climate resilience of key economic sectors and foster knowledge and technology transfer across countries. Increasing the resilience of the water-dependent sectors will contribute to alleviate the stress imposed by climate change, usually felt more by the poor. Additionally, specific adaptation measures will directly benefit affected poor communities. The Project is also aligned with the priorities under GEF's programming strategy for CC adaptation,

namely (i) reducing the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change; (ii) strengthening institutional and technical capacities for effective climate change adaptation; and (iii) integrating climate change adaptation into relevant policies, plans and associated processes. The project aims to illustrate the linkage between natural resource protection (upstream watershed protection) and climate change adaptation on one hand, and multi-sectoral economic development and poverty reduction on the other hand (which for example, in the case of Peru, points at more effective public investment in line with national policies of social inclusion and poverty alleviation).

34. **Consistency with National Priorities**. The AICCA Project is also consistent with each participating country's national development and sectorial plans. In **Bolivia**, the Project finds itself in line with the national, sectorial and municipal plans as well as with the existing technical tools already in place in the APSB sector: (i) *Water Resources:* The Project is framed in the National Watershed Plan (PNC); considering also the existing guidance for technical instruments for Integrated Watershed Management (MIC) and Integrated Water Resources Management (GIRH in Spanish, IWRM in English); (ii) *Water and Sanitation:* The Plan for Basic Sanitation Development PSD-SB (2016-2020) as well as the National Regulations for the design of sanitary and storm water sewer systems, both provide background for this project. Also as a frame there is the Technical Regulation for Design of Urban Storm Water Drainage Systems; and (iii) *Climate Change:* The Project falls under the scope of the "Adaptation Mechanism for Living Well" of the Bolivian government, specifically the "Program of Integrated Water Management" and "Program for Prevention and Risk Reduction of Impacts Due to Climate Change".

35. In **Colombia**, the Project is aligned with the National Plan for Adaptation to Climate Change; Colombian Strategy for Low Carbon Development; National Strategy for Reducing Emissions from Deforestation and Forest Degradation; and the Financial Strategy for Disaster Protection. The Project will facilitate the inclusion of CV/CC criteria into the guidelines for the formulation of General Plan of Direct Rural Technical Assistance (PGAT) by The National Agricultural Technical Assistance Subsystem; and Territorial Land-Use Plans (POMCA) by the Ministry of Environment and Sustainable Development (MADS) and the Regional Corporations; and Municipal Development Plans.

36. In **Ecuador** the Project is aligned with several programs under the provisions of the National Climate Change Strategy (ENCC 2012 -2015), including, the "Analysis of vulnerability of flagship hydropower plants to the effects of climate change in seven sub-watershed of Ecuador" (CHECC) project, which aims to minimize risks of reduction in hydropower production through the design of adaptation measures to climate change[12]; and in terms of the management of biodiversity and its link with climate change, it is reflected in the ENCC, in alignment with its objective of developing several CC adaptation actions focused on the maintenance of the water cycle. It is also in alignment with the "National Plan of Good Living" (PNBV 2013- 2017) which seeks to change the country's productive structure and generate a sustainable and diversified economy, focused on knowledge and innovation, in particular with objective 7 which establishes

[12] To date, this project is in full stage of the generation of climate studies on the watersheds of the Coca Codo Sinclair Hydropower Project and Delsitanisagua Project, and modeling CV/CC impacts on water resources produced in these basins.

the need to "guarantee the rights of nature and to promote environmental, territorial and global sustainability" to ensure the sustainable management of watersheds and thus the human right to access to water. Furthermore, the proposed project interventions in Ecuador are aligned with Chapter 2 of the country's revised Constitution of 2008, which is dedicated to the sustainable use of biodiversity as a strategic resource for the country; and is consistent with Section 3.2 of the 2014-2020 National Biodiversity Strategy and Action Plan (NBSAP), and with Strategic Objectives 2 & 3 of the Fourth National Report to the Convention on Biological Diversity.

37. In **Peru** the Project specifically frames its work within Objective 1 of the new National Strategy on Climate Change: *Population, economic agent and the state increase their awareness and adaptive capacities to face the adverse effects and opportunities due to climate change.* The AICCA Project in Peru, additionally builds on the successes of the IPACC Project (Public Investment and Climate Change) implemented between 2011 and 2014, and embraces the objectives of the IPACC II project, which seeks that political decision makers and technical personnel from the Ministries of Economy, Finance and Planning of Peru and selected countries in Latin America, are aware of good practices for mainstreaming management of climate risk in public investment and consider a climate change adaptation criteria in their planning and decision -making.

2. PROJECT DEVELOPMENT OBJECTIVES

I. PDO

The proposed objective of the "Andes Adaptation to the Impact of Climate Change in Water Resources Project" ("AICCA" in its Spanish acronym) is **to generate and share data, information and experiences relevant for adaptation to climate variability and change, and useful for formulation of policies in selected sectors, and to pilot investments in priority areas in the four Andean countries.**

A. Project Beneficiaries

38. The identification and engagement of stakeholders during project preparation was guided by those who could have the most relevant and direct impact on project activities and outcomes, as well as those who will be direct project beneficiaries. Specifically identified were different levels of government (e.g., ministries of environment, relevant sectorial ministries, regional and municipal governments), relevant sectorial institutions (e.g., basin management committees), research and academic institutions (e.g., University of Cuenca), service providers (e.g., electricity and potable water companies), and individuals (e.g., local communities in Cochabamba, rural farmers in Peru) as well. Specific beneficiaries will be identified once the specific areas of intervention are determined according to the priorities and needs of each country. Amongst the expected benefits can be included, for local populations: increased water

security, increased income security from lessened climate risks to vulnerable agricultural practices, and decreased risk of exposure to flooding events; for governments, an increased capacity and skill set to integrate best practices to address CC/CV considerations into protection and management of water resources; for service providers, stronger management and decision-making skills for integrated basin management and increased resilience of water-dependent services to CC/CV. Table 1 below attempts to illustrate the results of a stakeholder mapping exercise conducted to identify key project stakeholders, their present relevance or role in the project's area of influence, and the potential impact they may have during and beyond project implementation. While one Ministry of Government will be the key Project Focal Point Ministry, the cross sector nature of the proposed project activities will require that the project liaise with other ministries as well where appropriate, in cases where the role of said ministries will be key to the delivery project outputs.

Table 1A: Primary Stakeholders and Beneficiaries of the Project in Bolivia

Stakeholders	Relevance to the AICCA Project	Potential Impact	Synergies with the AICCA Project	Potential contribution or support to the AICCA Project
BOLIVIA:				
Ministry of Environment and Water, through the Vice-Ministry of Drinking Water and Basic Sanitation	Project Focal Point Ministry and Lead liaison to the AICCA Project, with direct responsibility to formulate, implement , evaluate and monitor policies and plans for drinking water, basic sanitation, irrigation, integrated watershed management, forest rehabilitation of watersheds and degraded areas, sustainable use of water in all its states , whether these surface or underground , fossil water, glaciers, wetlands, mineral, or medicinal.	HIGH	Policy directives and facilitation of local project events and processes. Ensures alignment of project outputs with national policy priorities. Institutional coordination of project counterparts at the national level.	Provision of co-financing and participation of technical staff in workshops, training, and tools development. Provision of project oversight through participation on RSC and national committee. Institutionalization of project results and lessons learned to allow for up-scaling, replication and sustainability.
National Service for Sustainable Sanitation Services (**SENASBA)**	Execute public policies, programs and strategies of the water sector, relevant to technical assistance and institutional stregnthening of the Drinking Water and Sanitation Providers (EPSA).	MEDIUM	Assistance in strengthening community support for the project. Assistance in institutional strengthening efforts of the project. Assistance in capacity building efforts by the project.	Project champion at the national level. In kind contribution to the Project. Implementation of regulations and policies in support of project outcomes.
CAF Project Coordinating Unit in Bolivia (UCP-CAF)	This Project Coordinating Unit decentralized with technical, administrative, legal and financial management capabilities, under the direct supervision of the Ministry of Environment and Water,	HIGH	This unit meets all financial and administrative requirements for project implementation as required by CAF.	Technical, administrative, legal and financial management of project funds in Bolivia.

Stakeholders	Relevance to the AICCA Project	Potential Impact	Synergies with the AICCA Project	Potential contribution or support to the AICCA Project
	created in 2011 to implement projects with CAF financing.			
OTHERS:				
Regional Governments:				
Autonomous Government of the Department of Cochabamba, via its Rights of Mother Earth Secretariat	Coordinate the formulation and executes the general policy for the conservation and protection of watersheds, soil, forest resources and forests in Cochabamba. Facilitate the planning and provides technical assistance in basic services related drinking water and sewage. Define actions that guarantee the preservation, conservation, improvement and restoration of Mother Earth and the environment in the Department of Cochabamba.	HIGH	Planes de Desarrollo y Ordenamiento Territorial Issue of orders/norms for land use management. Rio Rocha Strategic Plan as enabling environment for Project objectives. Regulation and control of rivers. Restoration of agricultural lands.	Project Facilitation. Policy facilitation in Project objectives related to land use planning. Important source of land use planning information useful in the conceptualization and validation of project activities.
Local Governments:				
Autonomous Municipal Government of Cochabamba	Design, finance and execute drinking water projects with the central authorities of the state and other relevant authorities, as well as assist and facilitate technical and planning assistance.	MEDIUM	Development and Land Use Plans Issue of orders/norms for land use management. Directly involved in the Program for Water, Sanitation, solid Waste and Strom Drainage – PROASRED	Direct Project support and facilitation. Issue of orders/norms for land use management. Important source of land use planning information useful in the conceptualization and validation of project activities.
Universities & Research Centers:				
San Simón Major University and San Andrés Major University	Academic institutions with skills and experience to undertake training processes for institutional strengthening and develop studies and research on topics related to AICCA.	MEDIUM	Studies and research on climate change adaptation, risk management and sustainability.	Relevant studies and research. Technical assistance and supervision of studies.

Table 1B: Primary Stakeholders and Beneficiaries of the Project in Colombia

Stakeholders	Relevance to the AICCA Project	Potential Impact	Synergies with the AICCA Project	Potential contribution or support to the AICCA Project
COLOMBIA:				
Ministry of Environment and Sustainable Development (MADS)	**Project Focal Point Ministry** Lead liaison to the AICCA Project, with direct responsibility for developing the guidelines for the formulation of watershed management plans (POMCA - Watershed Management Guide)	HIGH	Policy directives and facilitation of local project events and processes. Ensures alignment of project outputs with national policy priorities. Institutional coordination of project counterparts at the national level.	Provision of co-financing and participation of technical staff in workshops, training, and tools development. Provision of project oversight through participation on RSC and national committee. Institutionalization of project results and lessons learned to allow for up-scaling, replication and sustainability.
Institute for Hydrology, Meteorology and Environmental Studies (IDEAM)	Coordinates operational project implementation and primary day-to-day project contact at the national level.	HIGH	Technical coordination and leadership.	Leadership in the Technical Committee; technical oversight of all anticipated project outputs in country.
Ministry of Agriculture and Rural Development (MADR)	Direct responsibility for developing the guidelines for the formulation of plans for agricultural technical assistance (PGAT Guide).	HIGH	Ensures alignment of project outputs with national policy priorities in agriculture and irrigation.	Provision of co-financing and participation of technical staff in workshops, training, and tools development. Oversight through participation on national committee. Institutionalization of project results and lessons learned to allow for up-scaling, replication and sustainability.
OTHERS:				
Regional Governments:				
Regional Autonomous Corporation of Boyacá (CORPOBOYACA)	Participate in implementation of Pilot Activities Participation in development of guidelines for POMCAs	MEDIUM	Ensures alignment of CV/CC considerations with the recommendations provided by the National Council for Economic and Social Policies	Oversight on national activities through participation on national committee
Local Governments				
Municipalities of Aquitania, Tota y Cuítiva	Participation in development of guidelines for POMCAs	MEDIUM	Ensure participation of local governments and alignment with municipal development plans	Facilitate local government participation and buy-in of project activities.
Lago de Tota	Participate in implementation of Pilot	MEDIUM	Represent broad civil society participation at the watershed	Facilitates civil society participation and buy-in

Stakeholders	Relevance to the AICCA Project	Potential Impact	Synergies with the AICCA Project	Potential contribution or support to the AICCA Project
Watershed Council	Activities Lead civil society participation in the elaboration of POMCAs.		level and ensures consistency of project activities with POMCA	of project activities.
Universities & Research Centers				
Colombian Corporation for Agriculture & Livestock Investigation (CORPOICA)	Participate in the formulation and implementation of PGATs.	MEDIUM	Ensure productive sectors' participation and compliance with PGATs.	Facilitate productive sectors buy-in of project activities.

Table 1C: Primary Stakeholders and Beneficiaries of the Project in Ecuador

Stakeholders	Relevance to the AICCA Project	Potential Impact	Synergies with the AICCA Project	Potential contribution or support to the AICCA Project
ECUADOR:				
Ministry of Environment of Ecuador (MAE), through the Sub-secretariat for Climate change and the Sub-secretariat of Natural Patrimony	Project Focal Point Ministry Lead liaison to the AICCA Project. It is the Ecuadorian government agency responsible for designing environmental policies and coordinate strategies, projects and programs for the care of ecosystems and sustainable use of natural resources. It is the government agency that proposes and defines the rules for proper environmental quality, with a development based on the conservation and proper use of biodiversity and the resources available to the country.	HIGH	CHECC Project (analysis of vulnerability and adaptation – Emblematic hydroelectric plant) – under execution (with 40% public funds) MATCH Project (adaptation measures for emblematic hydroelectric plants) – in preparation process with the Adaptation Fund. Environmental Management Plan for CAYCO National Park (led by the Natural Patrimony Sub-Secretariat).	Policies and guidelines. Project Facilitation. Technical inputs generated from CHECC and MATCH Projects. Contrapartida en especies. Coordination and facilitation of initiatives in protected areas. Provision of co-financing and participation of technical staff in workshops, training, and tools development. Provision of project oversight through participation on RSC and national committee. Institutionalization of project results and lessons learned to allow for up-scaling, replication and sustainability.
Ministry of Electricity and Renewable Energy (MEER)	Agency responsible for electricity sector and renewable energy in Ecuador.	HIGH	The inclusion of climate variability in norms, development plans, and sector policies at the national level.	Policies and guidelines. Project Facilitation.

Stakeholders	Relevance to the AICCA Project	Potential Impact	Synergies with the AICCA Project	Potential contribution or support to the AICCA Project
	This entity is responsible for the formulation of relevant regulations, policies, and development plans for the electricity and renewable energy sectors for the efficient use of available resources. .			Sector norms and regulations. Source of key information on the sector.
Water Secretariat (SENAGUA) and the Water Regulating Agency (ARCA)	ENAGUA is the National Authority to exercise stewardship over the management and administration of water resources and has, among other things, to promote the protection of watersheds with emphasis on the conservation of heathland and native forests to preserve aquifers and good quality water sources. ARCA is the agency responsible for the regulation and control of water nationwide.	HIGH	Programs and Projects of the National Water Plan, with influence in areas of intervention of the AICCA project. Inclusion of climatic variable in sector emission regulations nationwide.	Policies and guidelines. Project Facilitation. Sector norms and regulations. Source of key information on the sector.
Agency for the Control and Regulation of Electricity (ARCONEL)	This agency controls the electricity sector as per new electricity sector law.	MEDIUM	Inclusion of climatic variable in sector emission regulations nationwide.	Policies and guidelines. Project Facilitation. Sector norms and regulations. Source of key information on the sector.
Operating Companies (EEQ and ELECAUSTRO)	Agencies responsible for managing the electricity sector, in the areas of generation, transmission, distribution and commercialization.	HIGH	Environmental Management Plans for source watersheds of the Victoria and Machángara Hydroelectric Complex.	In-Kind counterpart
OTHERS:				
Regional Governments:				
Decentralized Autonomous Governments (GAD) Napo, Azuay, and Cañar.	Bodies with powers assigned by the Organic Code for Land Use Planning, Autonomy and Decentralization – COOTAD, for environmental management and the execution of works in river basins and watersheds at the provincial level.	MEDIUM	Development and Land Use Plans Napo GAD Climate Change Plan Issuing of regulations and permits for land use planning.	Project Facilitation. Land Use Norms. Source of key information on the sector.
Local Governments:				

Stakeholders	Relevance to the AICCA Project	Potential Impact	Synergies with the AICCA Project	Potential contribution or support to the AICCA Project
Decentralized Autonomous Municipal Governments of Quijos and Cuenca.	Bodies with powers assigned by the COOTAD for the provision of water and sanitation services, among others, within the scope of its jurisdiction.	LOW	Development and Land Use Plans Napo GAD Climate Change Plan Issuing of regulations and permits for land use planning.	Project Facilitation. Land Use Norms. Source of key information on the sector.
Universities & Research Centers:				
Cuenca University, National Polytechnic School, among others.	Academic institutions with skills and experience to undertake training processes for institutional strengthening and develop studies and research on topics related to AICCA project.	MEDIUM	Studies and research (climatic and non-climatic) in páramos and wetlands in the areas of intervention of the AICCA project.	Studies and relevant research. Technical assistance / supervision of studies.
Non-Profit Organizations:				
Communities in the project areas (Council of Irrigators of the Machángara Irrigation System).	Non-governmental organizations, with installed organizational capacity to coordinate and mobilize human resources in support of adaptive and organizational strengthening processes promoted by the Project.	HIGH	Routine activities of operation and maintenance of the irrigation system. Community initiatives for the development of their livelihoods.	Community contribution in work associated with the implementation of measures. Facilities / permissions / authorizations for implementation of minor work, equipment and machinery.

Table 1D: Primary Stakeholders and Beneficiaries of the Project in Peru

Stakeholders	Relevance to the AICCA Project	Potential Impact	Synergies with the AICCA Project	Potential contribution or support to the AICCA Project
PERU:				
Ministry of Environment of Peru, via the Directorate General of Climate Change, Desertification, and Water Resources (DGCCDRH)	Project Focal Point Ministry and Lead liaison to the AICCA Project. Fully in charge of the National Environment Management System. The DGCCDRH MINAM, has among its functions to establish national policy for the management of climate change in coordination with the competent entities. It also provides technical assistance and capacity	HIGH	IPACC project - Phase II (Incorporating risk management in a climate change context for public investments). Glaciers + project (Incorporating risk management in a climate change context for public investments, with emphasis on energy and early warning systems).	Decision-making, Policies and guidelines. Project Facilitation. Co-leads the Public Investment and climate Change Partners Network, to ensure synergies with other efforts In-kind Counterpart contributions.

Stakeholders	Relevance to the AICCA Project	Potential Impact	Synergies with the AICCA Project	Potential contribution or support to the AICCA Project
	building to regional governments for the inclusion of climatic conditions in planning and investment development through Action Plans and Regional Strategies on Climate Change.			
Ministry of Economy and Finance (MEF), via the Directorate General for Public Investments (DGIP)	The DGIP is the key organ of the Ministry of the National Public Investment System (SNIP) , and as such constitutes the highest technical-regulatory authority for public investment at the national level and is responsible for designing the policy guidelines for public investment. It formulates, proposes and approves, where appropriate, standards, guidelines and procedures on public investment, within the framework of the National Public Investment System (SNIP).	HIGH	IPACC project - Phase II (Incorporating risk management in a climate change context for public investments).	Decision-making, Policies and guidelines. Project Facilitation. Co-leads the Public Investment and climate Change Partners Network, to ensure synergies with other efforts In-kind Counterpart contributions.
Ministry of Agriculture and Irrigation (MINAGRI), via the Office of Budget Planning **(OPP)**	The OPP is responsible for advising senior management, public agencies, programs and projects in the sector in the formulation, implementation, monitoring and evaluation of national agriculture policy and sector development plans. It advises on the management of budget development, conducts public sector investment and international technical cooperation in the sector.	HIGH	Inclusión de la gestión del riesgo en un contexto de cambio climático en la inversión pública a través de lineamientos y pautas metodológicas en el sector agrario. Inclusión de la variable climática a través de la inversión pública en Programas Sectoriales.	Lead as a technical body responsible for inclusion of risk management from a climate change in public investment in agriculture (emphasis on irrigation) in coordination with the DGIP - MEF Strategic decisions - political and operational. Standards and sector regulation. Directives and guidelines. Key sector information. Project facilitation. In-kind counterpart.

Stakeholders	Relevance to the AICCA Project	Potential Impact	Synergies with the AICCA Project	Potential contribution or support to the AICCA Project
Ministry of Agriculture and Irrigation (MINAGRI), via the Office of Infrastructure and Irrigation (DGIR)	The DGIAR, is responsible for promoting, and coordinating the development of agricultural infrastructure, irrigation and drainage, including irrigation systems, at the national level. It promotes training and technical assistance in accordance with the National Water Resources Policy, the National Agricultural Policy, the National Environmental Policy and current regulations.	MEDIUM	Proposes plans, strategies and policy on the development of agricultural infrastructure, irrigation and drainage, including modern irrigation systems, according to national and sector policies and regulations in force.	Operational decision-making. Information on criteria for intervention in the framework of sector policies for the development of programs and projects of agricultural infrastructure, irrigation and drainage. Project facilitation.
Ministry of Agriculture and Irrigation (MINAGRI), via the Office of the Directorate General of Agricultural Environmental Affairs (DGAAA)	The DGAAA is responsible for implementing the objectives and provisions of the National Environmental Management System in its area of competence. Among its functions are the formulation and implementation of the National Plan for Risk Management and Adaptation to Climate Change (PLANGRACC).	MEDIUM	Propose strategies for implementing adaptation measures to climate change in agriculture according to PLANGRACC.	Operational Decision-making. Information on the vulnerability and impacts of VC/CC at the country and regional levels. Project facilitation
OTHERS:				
Local Governments:				
Local Governments	Promote, support and implement investment projects and public services that present objective economies of scale at the provincial level.	HIGH	Planning and provision of infrastructure for local development.	Project facilitation Key source of information of land use. Implementation of measures in the field through public investment projects. Sustainability interventions through the PIP.
Other Governmental Agencies:				
National Service of Meteorology and Hydrology (SENAMHI)	Technical entity attached to the MINAM which generates and provides scientific climate information at the country level.	MEDIUM	Studies and research (climatic and agro-meteorological).	Associated studies and research.
National Water Authority	Entity attached to MINAGRI who exercises	MEDIUM-HIGH	Provides technical assistance for the establishment of the	Key source of information from the field and binding

Stakeholders	Relevance to the AICCA Project	Potential Impact	Synergies with the AICCA Project	Potential contribution or support to the AICCA Project
(ANA)	administrative territorial jurisdiction over the distribution of water resources at the national level through its decentralized organs.		Watershed Water Resources Council which are governed by the Water Resources Management Plans.	opinions on interventions in the field at the watershed level.
Communities:				
Communities in the project areas (Council of Irrigators and other Users).	Non-governmental organizations, with installed organizational capacity to coordinate and mobilize human resources in support of adaptive and organizational strengthening processes promoted by the Project, especially in water management and irrigation.	HIGH	Routine activities of operation and maintenance of the irrigation system. Community initiatives for the development of their livelihoods.	Community contribution in work associated with the implementation of measures. Facilities / permissions / authorizations for implementation of minor work, equipment and machinery.

B. PDO (Outcome) Level Results Indicators

39. PDO (outcome) Indicators include the following: (i) actionable research findings generated and validated with the selected sub-sectors; (ii) packages of information, research data and experiences on adaptation to CV/CC shared regionally; (iii) major public investment proposals per country that have incorporated the implications of climate variability and change in the selected sectors (number) attributed to project; and (iv) Pilot investments supported by the project undertaken according to defined criteria.

II. PROJECT DESCRIPTION

A. Project Rationale

40. **Project Rationale**. The "Regional Adaptation to the Impact of Rapid Glacier Retreat in the Tropical Andes - PRAA" Project, which successfully showcased pilot adaptation projects and strategies in the region can be considered as the 'predecessor' of this new project. While being successful, the PRAA pointed out the ever-growing needs of the region to better prepare for climate change impacts, as well as the great capacity that exists on some specific topics at the country level, and thus the great opportunities for south-south cooperation, knowledge and technology transfer.

41. Under the scenarios described in the regional and sectorial context above, it becomes clear that there is a need for the beneficiary countries to strengthen their adaptation capacity to cope with the increased impacts of climate variability and climate change on water dependent economic sectors. Currently, and from the perspective of adaptation to CV/CC, there are as yet no sector policies, guidelines, investments, in the selected sectors (urban-periurban storm-water drainage in Bolivia, high mountain agriculture in Colombia; hydropower in vulnerable watersheds & biodiversity conservation in Ecuador; and small scale irrigation systems in Peru),

which are currently systematically incorporating CV/CC considerations to increase the resilience of the sectors selected by the four countries.

42. The objective and proposed activities of the AICCA project are aligned with the programming priorities of the SCCF for Adaptation (SCCF-A), and specifically focused on water resources management (minor irrigation systems in Peru, water recharge areas in Ecuador and Bolivia, and water production and efficiency in the highlands of Colombia); land management (mountainous landscapes, watershed and protected areas in Ecuador, and land-use plans in Colombia); agriculture (water efficiency for agriculture in Colombia); infrastructure development (hydroelectric plants in Ecuador); fragile ecosystems, including mountainous ecosystems (watershed, páramos, and elevated Andean forests in Ecuador, Colombia and Peru); and supporting capacity building, including institutional capacity, for preventive measures, planning, preparedness and management of disasters relating to climate change, including contingency planning, in particular for droughts and floods in areas prone to extreme weather events (applicable to activities in all 4 countries under the AICCA project). Furthermore, the AICCA project is aligned with the GEF Adaptation to Climate Change (LDCF/SCCF) Framework specifically in terms of **CCA-1** (Reducing Vulnerability), **CCA-2** (Increasing Adaptive Capacity) and **CCA-3** (Adaptation Technology Transfer). Activities in Ecuador are aligned with the GEF Biodiversity Results Framework and specifically with **BD-2** (Mainstream Biodiversity Conservation and Sustainable Use into Production Landscapes, Seascapes and Sectors), in relation to updating watershed and protected areas management plans to better address anthropogenic threats to biodiversity emanating from cattle ranching, deforestation, and wildfires.

43. Developing a regional approach supported by strong and proactive knowledge management platform, provides the added value for countries to benefit and learn from their own experience as well as activities carried out in neighboring countries (and from their pre-existing knowledge, processes, methodologies on specific topics, as well), thus increasing the effectiveness and efficiency of , available human and financial resources and creating the adequate context for sustained change Consistent with the above, this project will embrace the following principles through-out its implementation:

(1) **Inclusive development**: It is important that poor households and small businesses can perceive the benefits from the project activities. For this, the equitable distribution of benefits is a requirement for long term inclusive development and community support.

(2) **Systemic Change:** Bringing together stakeholders from different levels (macro, meso and micro) and establishing a joint agenda for the sustainable management of Andean water resources will be key to address and resolve underlying systemic constraints.

(3) **Local Initiative**: Experiences show that whereas effective and sustainable solutions can only be achieved if local actors shape and drive their own agendas, a bottom up approach will be fundamental for long term sustainability.

(4) **Contextualized regional solutions**: Working through an active regional knowledge development and management platform, will assure that throughout the project, information, tools, know-how and resources are properly applied to different contexts and needs, improving the generation of effective and economically viable processes committed to impact on scale and a responsible value for money rationale.

44. Consideration of CC/CV and their impact on water resources will strengthen the importance of protecting groundwater recharge zones and strengthen the risk management of all water dependent economic sectors. To achieve this, better information to inform policy and decision-making, innovative tools and strengthened capacities to better understand climatic threats and the adaptive nature of water resources management are required to improve the resilience of future public and private investments. In this respect, the Project aims to generate sufficient knowledge to effectively mainstream CC/CV considerations into management/policy instruments, to be applied in pilot investment activities with the purpose to generate information to assess the relevance of addressing CC/CV considerations, and validating and/or providing feedback to amend updated management/policy instruments and facilitate replication. Embracing the lessons from the processes of and results from the implementation of the pilot activities will strengthen the management/policy instruments, and provide examples for addressing CC/CV considerations, thus facilitating the applicability of the instruments (effective adoption by their users) and their potential for replication (instrument level and resilient public investments). By doing so, the Project will also encourage improved efficiency in the use of resources, and better stewardship and adaptive management of critical ecosystems.

45. Project activities in Ecuador will focus specifically at reducing anthropogenic threats to biodiversity caused by the productive sectors (agriculture, cattle grazing, deforestation, hydroelectric power plants) operating within project intervention areas and their buffer zones, and at improving sustainably managed landscapes in which biodiversity conservation, the maintenance of ecosystem integrity and their associated functions and services are prioritized. Analyses will be conducted to identify gaps, loopholes, and obstacles to the sustainable and efficient management of ecosystems and their biodiversity, with particular focus on quantifying the relationship between human well-being and biodiversity use, to better inform management plans and develop best practices to be reflected in Impact Modelling, Local Environmental Management Plans, Watershed Management Plans, Local Development Strategies, Local Land Use Plans, Sector Policies, Watershed Reforestation, Ecosystem Restoration and an Improved Regulatory Framework for addressing the threats to biodiversity at the watershed level. Finally, the Project will work on knowledge management and lessons (processes and results) dissemination at the national and regional level in alliance with public investment systems within the finance and planning sectors in every national government.

Global Environmental Benefits (Biodiversity Interventions in Ecuador). The project will contribute directly towards global compliance in achieving the Aichi Biodiversity Targets 1, 2, 4, 5, 7, 11, 14 and 15. In Ecuador, activities implemented using funding from the biodiversity focal area, are targeted to conserve directly 36,160 ha., and indirectly 403,100 ha. of significant biodiversity (including numerous emblematic endangered and endemic species) and the ecosystem goods and services that it provides to the society at both the local and global scales.

Communities in the project area near the Victoria Project in Cayambe-Coca National Park and the Machángara River Basin, will be more aware of both the local and global value of biodiversity, and of what actions are necessary to conserve and sustainably use biodiversity (Aichi Target 1), as a consequence of improved sustainable watershed management, strengthened capacities, and awareness of the population on topics dealing with climate change adaptation, and the conservation of high mountain ecosystems. Watershed-specific Management Plans and Local Development Plans will include biodiversity values and accompanying reporting systems (Aichi Target 2). Additionally, the project will develop and implement strategies for knowledge exchange and technology transfer on the adaptive management of watersheds and high mountain ecosystems.

46. The globally important Amazon river watershed basin will also benefit from the improved integrated management of water resources, ensuring an adequate water supply to sustain biodiversity and ecological processes in this critically important ecosystem. The improved integrated management of water resources to be addressed by the project in Ecuador is guided by the principle of sustainable production and consumption, with a view to keep the impacts of the use of natural resources to a minimum, ensuring that ecological functions are maintained (Aichi Target 4), and thus habitats critical to endangered and endemic species are protected.

47. There is strong evidence of the immense value of the ecosystem services provided by the Andean forests, especially through their role in regulating the global climate and their positive effects on the quantity and quality of available water resources, and thus their relationship to Aichi Targets 5, 7, 11, 14 and 15. The implementation of local Adaptation Plans, and Protected Areas Plans like the one in the Antisana Ecological Reserve, will reduce forest habitat degradation, while successful experiences in agroforestry, ecological vegetable gardens, forest grazing systems, and páramos connectivity, will be replicated at the watershed level. The project will support protected areas management, including the protection of recharge basins, reforestation and degraded soil restoration. The protected areas and watershed management approach will foster community ecotourism and conservation agreements, with the anticipated impact of enhanced carbon stocks from improved and restored forests in watersheds to benefit from project intervention. Climate change impact modelling on the biodiversity of Andean high mountain ecosystems to be delivered by the project is directly linked to Aichi Target 19.

48. The protection of thousands of plant species including numerous endemics with bio-prospecting potential in the Ecuadoran Amazon, and particularly in the Cayambe-Coca National Park and the Machángara River Basin, will create an enabling environment upon which to further strengthen the leadership role that Ecuador has displayed in addressing Aichi Target 16, relating to the benefits of the Nagoya Protocol, and the development of globally replicable best practices in addressing access to genetic resources, benefit sharing and the protection of Traditional Knowledge linked to genetic resources. Consequently, the proper sharing of benefits will improve the environmental conditions in that region of the Amazon, thus the global environment will benefit from the general safeguard of natural resources and associated traditional knowledge, and from enhancing the recognition and acceptance for the value of biodiversity.

49. Through its contribution to meeting the Aichi Targets, the project will have a direct impact on safeguarding genetic diversity of global importance and the overall implementation of the CBD, and will specifically contribute to the conservation and sustainable use of 25% of the world's biodiversity, 7 ecological strata, and the 133 different ecosystems that characterize the Andean region.

50. **Adaptation Benefits.** The AICCA Project will fund interventions that will result in concrete adaptation actions to reduce vulnerability and increase adaptive capacity to the impacts of climate change, complementing baseline (Business as Usual – BAU) investments by the Program for Potable Water, Sanitation, Solid Waste, and Storm Water Drainage (PROASRED) funded by CAF in **Bolivia,** the Lake Tota Project in **Colombia** implemented as part of the 'Cooperation Agreement for the Development of Watershed Strategic Plans and Management of Lake Tota' between the Ministry of Environment and Sustainable Development of Colombia (MADS) and the French Development Agency (AFD), the Machángara Hydroelectric Project and the Victoria Hydroelectric Project in **Ecuador,** and the Public Investment and Adaptation to Climate Change Project and the Public Investment and Adaptation to Climate Change in Latin America - IPACC Regional Project in **Peru**. Specific adaptation benefits to be obtained from SCCF investments in Bolivia will include the control of rain water discharges and flooding in urban areas, the reduction of overflow of tributary rivers, reduction in the loss of vial platforms, and the avoidance of damage to water resources management infrastructure such as storm drainage systems, sewer systems, flood ponds, wastewater treatment plants, and sewage collectors, a reforestation project for protection of water sources, soil stabilization, and reduction of the impact of CO2 emissions, and ultimately, a reduction in the loss of life as a consequence of reduced vulnerability and increased resilience to the impacts of climate change.

51. Concrete adaptation benefits to be obtained from SCCF investments in Colombia will include enhanced modelling of CV/CC projections to provide required technical guidance in efforts to adapt to CV/CC, a better understanding of the vulnerability of relevant ecosystems in selected water basins to the impacts of CV/CC, assessments of water use efficiency in the principal agricultural production systems, the update of instruments for planning territorial, environmental, and agricultural development and investments inclusive of CC/CV considerations, enhanced climate monitoring, hydrological monitoring, reforestation and restoration of river banks, salvo-pastoral practices, recovering water recharge areas, improve productivity, and improved water efficiency. In Ecuador, concrete adaptation benefits resulting from SCCF investments will include increased resilience of the selected hydroelectric projects and improvement in their capacity to manage risks to climate extremes; flow and sediment control, flood management, monitoring of levels and flow rates, hydro-climatic monitoring, an early warning system (EWS) of extreme weather events resulting in reduced vulnerability of watersheds and fragile high-mountain ecosystems, increased resilience of water provision for the selected hydroelectric projects, transfer of generated knowledge and capacity to relevant stakeholders, including at least 20% women, and enhancing the adaptive capacities of technicians and decision makers to use and interpret climate studies and VC & CC impact modelling to respond timely and effectively to extreme weather events.

52. Adaptation benefits from SCCF resources in Peru will include vulnerability and CC/CV impact characterization study on small-scale irrigation, estimates of the costs of CC/CV related

damages on existing small-scale irrigation, the inclusion of CV/CC in Irrigation Public Investment Projects, methodological instruments and technical standards for the inclusion of CC/CV considerations in public investment projects, CV/CC Guideline for small-scale irrigation projects, and sectorial technical regulation for small-scale irrigation that consider risk management in a CV/CC context.

53. Finally, the enhanced condition of the Andean ecosystems as a consequence of project interventions will increase its resilience to climate variability and climate change (for example, protection of water recharge areas and enhanced water production through the protection of Andean forests) and increase in the carbon stocks of Andean forests. Additionally, enhanced management of watersheds and protected areas, coupled to climate change impact modelling will reduce the vulnerability of Andean communities in Ecuador to climate variability and climate change, thus increasing their capacity to adapt, and will serve as experiences and lessons learned to inform climate change adaptation efforts elsewhere in the world. A more detail articulation of the activities represented under the baseline projects mentioned above and those to be covered under the 'Additional Cost' by SCCF resources is presented in Paragraphs 72 to 84 of this Project Document under the 'GEF Alternative' section.

B. Project Components

54. The Project is expected to generate experiences/lessons (processes and results) to be shared regionally in order to promote South-South learning, collaboration, and technology[13] transfer. The Project will generate information about the needs, applicability and feasibility of technologies to support climate change adaptation in the selected sectors, as well as to help transfer this knowledge into management/policy instruments within country and regional impact. Activities at country level will focus on technologies to increase the resilience of upstream watersheds and encourage groundwater recharge on one hand, and on sector specific technologies on the other hand. In this way, and with the fundamental co-financing resources available, a far-reaching impact is anticipated, since management/policy instruments will be applicable at both country level, for the whole sector, and at regional level, therefore positively influencing any ongoing and future projects. At regional level, knowledge development and management will play a key role throughout all project implementation, generating proper conditions for effective knowledge transfer and the reinforcement of a community of practice around the key issues and outcomes of this project.

55. GEF biodiversity funds will specifically finance activities within all three components in Ecuador. The aim of these activities is to contribute to the achievement of more resilience and sustainability on High-Andean ecosystem and biodiversity management in the selected production landscapes in Ecuador, through the mainstreaming of anticipated water sector climate change impacts into policy, an enhanced regulatory framework at the local level, planning and selected on-the-ground interventions.

[13] The term "technology" is broadly understood as the combination of knowledge, methodologies, capabilities, and experiences.

56. In order to maximize the impacts and sustainability of activities, the Project will seek to coordinate its actions with existing government programs, as well as programs and projects financed by CAF.

57. The proposed Project (**US$8.45 million from SCCF and US$1.24 million from GEFTF**) will be implemented over a period of four years and comprises the following four components: (1) Generation and exchange of knowledge, technology transfer and institutional strengthening; (2) Mainstreaming of climate change considerations into policies, strategies and programs; and (3) Design and implementation of adaptation measures in priority sectors; and (4) Project Management, Monitoring and Evaluation, inclusive of the Project Close-out Period.

58. **Component 1. Generation and exchange of knowledge and technology transfer (US$0.85M GEF SCCF plus US$0.17M GEFTF, total US$2.42M).** This component aims to generate key scientific and technical information which will strengthen knowledge and skills that will deepen the understanding of CC/CV implications in the selected sectors, and facilitate their inclusion into policies, strategies, programs, plans and other instruments ("management instruments") within the selected sectors. The activities to be financed under the component are: (i) hydrological modelling under CC/CV projections, vulnerability analysis and impact analysis on fragile ecosystems to improve the knowledge on vulnerability and impact of CC/CV in the selected sectors; and (ii) the design and implementation of curricula and training programs to promote knowledge transfer activities, ultimately strengthening capacity in the sectors (iii) the development of Local Development Strategies, Land Use Plans, Sector Policies, and an Enhanced Regulatory Framework which all incorporate and reflect a clear attempt to address anthropogenic threats to biodiversity at the watershed level.

59. **Component 2. Mainstreaming of climate change considerations into policies, strategies and programs (US$0.87M GEF SCCF, plus US$0.13M GEFTF, total US $0.25M).** This component will support the review of existing management instruments in selected sectors with the objective to improve the elements and methods that enable and help decision-makers to make rational and informed choices between alternative actions to increase resilience to the impacts of CV/CC. The component will finance activities such as (i) guidelines for public investment on specific sectors as well as standards for territorial planning and management that would integrate CC/CV considerations in management instruments at the national level; and (ii) contribute to the elaboration of instruments at sub-national levels of government (e.g., integrated urban drainage management plan for the Municipality of Cochabamba in Bolivia, activities to contribute to the design of a payment for environmental services program for the Lake Tota basin); (iii) definition of a methodology to ensure the inclusion of climate change concerns during design and implementation of plans, programs and projects at national and sectoral scales, and (iv) the development of Technical Standards and Guidelines for Biodiversity Conservation and Climate Change Adaptation, to be incorporated into Watershed Level Management Plans and Protected Areas Management Plans relevant to the project intervention areas.

60. **Component 3. Design and implementation of adaptation measures in priority sectors (US$ 5.8M SCCF indicative plus 0.93M GEF Biodiversity for Ecuador, total US $37.23M).** The focus of this component is to implement pilot investment adaptation activities within the selected sectors, in order to first generate direct benefits and bring resilience around the area of

intervention, and second to generate knowledge to validate the relevance of mainstreaming CC/CV considerations and provide feedback to the policy-making process. This component will finance both soft and hard climate adaptation investments, and it will include activities such as: (i) design and implementation of adaptation measures (e.g. upstream watershed level, groundwater recharge level, sector specific), that incorporate technologies and approaches that have been proven to work elsewhere and contribute to the increased resilience of the sector (for example, controlled flow of storm water discharges downstream, flood control and groundwater recharge in Bolivia; participatory assessment of the water footprint of different agriculture management practices in Colombia; flow and sediment control, and restoration and rehabilitation of degraded ecosystems in Ecuador); (ii) design and implementation of monitoring systems aimed at generating data to assess the relevance, effectiveness and sustainability of the adaptation initiatives, and (iii) and the development and implementation of targeted interventions to protect fragile ecosystems and watersheds and to arrest threats to biodiversity in the project intervention areas, including the restoration and recovery of degraded ecosystems (forests and páramos), the removal of cattle from the páramos, development and implementation of best practices in productive activities such as livestock, agriculture, and agro-forestry, the development of fire prevention plans for the páramos and associated habitats, and the formation, training and equipping of fire brigades to prevent and control forest fires.

61. Regional activities will be embedded in the three-above components, but budgeted under component 1, and include, among others, activities to: (i) promote regional exchange and cross-learning among two or more countries (e.g., workshops, participation in existing platforms); (ii) dissemination of lessons learnt (e.g., systematization); (iii) studies to understand and promote the replication of experiences at the regional level.

62. **Component 4. Project Management, Monitoring and Evaluation (US$0.87M SCCF)** This component aims to provide regional coordination, implementation support (fiduciary, safeguards) and project management, to ensure a coherent approach to program implementation and wide dissemination of results and lessons learned; as well as support monitoring efforts and evaluation of intermediate and final results. Towards this objective, this component includes activities to: (i) support a Regional Coordination Unit located in Quito, Ecuador, for implementation support to participating countries in procurement, financial management and disbursements, technical support in the implementation of components 1-3, regional coordination, and liaison with National Focal points in each country, and (iii) facilitate the monitoring and evaluation of the project, results assessments, and on-the-ground support (See Annex 3 details).

C. Project Financing

63. The Project has obtained GEF-SCCF financing for US$8.46 million, plus Ecuador-specific GEF TF resources for US$1.24 million. The majority of resources (US$6 million in GEF funds) will be devoted to investments.

64. Counterpart funding from the participating governments and private hydro-electric operators is estimated at US$**58.18** million. CONDESAN as the executing agency will contribute resources in the form of thematic expertise and overhead costs to the extent of US$200,000 and CAF in the amount of US$235,000 in kind.

65. Summary Budget:

Component 1	SCCF US$	GEFTF US$	Total GEF project Funds (US$)	Matching Gov't + Other Contribution (US$)	TOTAL
C-1 : Generation and exchange of knowledge, technology transfer and institutional strengthening	**850,286**	**170,000**	**1,020,286**	**1,109,615**	**2,129,901**
Bolivia	180,000		180,000	155,350	335,350
Colombia	120,286		120,286	608,181	728,467
Ecuador	150,000	170,000	320,000	106,084	426,084
Peru	200,000		200,000	240,000	440,000
Regional	200,000		200,000		200,000
C-2 : Mainstreaming of climate change considerations into policies, strategies and programs	**879,381**	**134,500**	**1,013,881**	**1,193,167**	**2,207,048**
Bolivia	233,000		233,000	155,350	388,350
Colombia	258,881		258,881	746,732	1,005,613
Ecuador	187,500	134,500	322,000	51,085	373,085
Peru	200,000		200,000	240,000	440,000
C-3 : Design and implementation of adaption measures in priority sectors	**5,895,796**	**882,537**	**6,778,333**	**55,443,453**	**62,221,786**
Bolivia	1,457,740		1,444,500	4,511,356	5,955,858
Colombia	1,471,573		1,458,333	2,120,097	3,578,430
Ecuador	1,513,240	882,537	2,435,500	45,362,000[14]	47,797,500
Peru	1,453,243		1,440,000	3,450,000	4,890,000
C-4: Project Management & Monitoring and Evaluation	**831,158**	**52,963**	**884,121**	**435,002**	**1,319,123**
Project Management Costs	361,131	52,963	414,094		414,094
Monitoring & Evaluation	470,027		470,027		470,027
Co-financing – Executing Agency CONDESAN (In-Kind)				200,000	200,000
Co-financing Implementing Agency - CAF				235,002	235.002
Total Project Cost	**8,456,621**	**1,240,000**	**9,696,621**	**58,181,237**	**67.877,858**

[14] From Hydroelectric Operators

D. Lessons Learned and Reflected in the Project Design

66. The proposed Project was built on the experience and lessons learnt primarily from the regional PRAA Project, which are valuable as many stakeholders in the proposed Project remain the same, while new players are being incorporated. In this respect, considering the lesson that careful, early-planned partnerships with key stakeholders increase the viability and chances of Project success, the Project is supporting Government priorities in sectors where alliances at different levels (national, sub-national, local) have already been formed and multi-sector planning activities are already on their way. The AICCA project will build on the success obtained by the PRAA Project and strengthen the involvement of key stakeholders including scientists, decision-makers, water utilities, farmers and community members. This project will continue the mainstreaming of climate change in the Andean region by complementing and expanding the use of satellite images, high-mountain monitoring stations and hydro-meteorological stations initiated by the PRAA; successes obtained by PRAA in addressing gender issues related to water supply, irrigation, and agricultural information for women will be embraced by AIICA to strengthen gender mainstreaming across all project intervention areas. Lessons learned from demonstrations by PRAA on how to use climate data to inform public investments will be fully embraced by AICCA, especially in irrigation investments in Peru, and in the incorporation of CV/CC into planning and management tools and guidelines in Colombia, Ecuador and Bolivia; progress made in improved cattle ranching and enhanced páramos fire prevention in Ecuador will be the primary basis for informing up-scaling efforts of these successes under the AICCA project.

67. Given that the lack of a clear regional dimension affected the ability of the PRAA to promote regional solutions to address common problems and challenges in a holistic, cross-boundary way, the proposed Project has embedded regional activities into the design of main components. Activities financed with this vision will foster regional exchanges and cross learning, systematization, and the understanding of opportunities for replication and up-scaling.

68. According to the experience from implementing the PRAA (and other successes and lessons learned from national projects), the ability of countries to increase their CC resilience is directly linked to their capacity to generate and analyze data to assess vulnerability. With this in mind, the Project as designed, is trying to the maximum extent to be grounded on robust knowledge creation and capacity building, while not "reinventing the wheel" but identifying areas for adding value, and building on already ongoing processes with the objective to making them more rigorous. Lessons learned will be assessed and applied where feasible to maximize synergies from national projects such the UNTFHS "Strengthening of Human Security of Rural communities through integral support to their resilience, response capacity and food security situation" in Bolivia; and "Natural Disasters in Peru: from Damage Limitation to Risk Management and Prevention" in Peru.

69. Based on past experiences in other CC adaptation projects, there is a need to ensure that M&E will be carried out in two dimensions: (i) to follow up on Project progress and results and (ii) to capture long-term adaptation benefits. With this in mind, the proposed Project envisages data collection, assessment and analysis as an integral part of all components and activities therein. Thus the M&E system as designed consists of three main elements: (i) the measurement of progress at the activity level; (ii) the measurement of progressive achievement of expected

project outputs and results (outcomes) as defined in the Results Framework; and (iii) continuous evaluation of the Project during implementation to enable early and regular adjustments.

E. Coordination with Other Initiatives Including Relevant GEF Funded Initiatives

70. Coordination and synergies will be sought from a series of baseline non-GEF projects mentioned below and also defined elsewhere in this Project Document. Project activities in Bolivia will collaborate closely with the Program for Potable Water, Sanitation, Solid Waste, and Storm Water Drainage (PROASRED) funded by CAF, in its efforts to construct potable water systems and the establishment of waste water treatment plants in Cochabamba. In Colombia, the AICCA project will collaborate and complement efforts by the Lake Tota Project, implemented as part of the 'Cooperation Agreement for the Development of Watershed Strategic Plans and Management of Lake Tota' between the Ministry of Environment and Sustainable Development of Colombia (MADS) and the French Development Agency (AFD). Activities under this initiative include integrated and participatory planning and management of watersheds, the administration of water resources, the design and installation of hydro-meteorological networks, the restoration of degraded land, and the strategic planning of watersheds, and are intimately linked to those proposed by AICCA. Dedicated efforts to avoid duplication of efforts, maximize synergies, and optimize resource use are a must. Project activities in Ecuador will be implemented in close collaboration with current investments by the Machángara Hydroelectric Project and the Victoria Hydroelectric Project, which currently focus on the implementation of management plans in watersheds relevant to the hydroelectric projects, and studies for the control of erosion in the watershed, modelling of the geodynamic stability, hydrological modelling to establish a water quantity and quality inventory, flood risks studies of the Machángara river, and improvements in hydro-meteorological monitoring.

71. The AICCA project in Peru builds on the baseline established by PRAA Project implemented by the World Bank, the "Public Investment and Adaptation to Climate Change" project implemented by GIZ, the Ministry of the Environment (MINAM), Ministry of Economy and Finance (MEF), and the Regional Governments of Cusco and Apurímac; and on the Public Investment and Adaptation to Climate Change in Latin America - IPACC Regional" project. These projects made substantial progress in the consideration of climate change variables in the different steps of identification, formulation and social evaluation of public investment projects, in updating the regulatory framework of the Investment System in Peru, the creation of a digital platform on information risks as a basis for information and decision-making by formulators and evaluators of national investment projects prioritized for sectors that include climatic scenarios, a virtual platform for knowledge management, a Network of Cooperating Partners, and, the establishment of a binding commitment for prioritized sectors to adapt good practices based on regional experiences and recommendations for climate risk management, which would facilitate synergies with proposed interventions of the AICCA project in Peru, in terms of pilot adaptation projects in water resources and irrigation. Peru already has a register of good practices of climate change adaptation measures that have served to design the "Sowing and Harvesting of Water" and "Sierra Azul" Investment Programs, with which sectoral and territorial synergies will be sought for ensuring the sustainability of AICCA investments.

72. There are several GEF projects in the four project countries that are either approved for implementation or still at the concept approval stage. It is difficult to establish the relevance of said projects to the AICCA Project because the project intervention areas are different, the specific focus may be different, or sufficient information is not available as yet, due to the early stage of project development, except in the case of the first three (3) GEF projects listed below for Ecuador, with synergies clearly identified. Agencies involved in the implementation of the AICCA Project however, have a responsibility to be assertive in identifying opportunities for coordination and collaboration with other GEF funded projects, and as such, will be committed to keep abreast with developments in the GEF projects listed in numbers 4 to 7 as well, with a view to consolidate coordination and avoid duplication of efforts, if and when these should arise.

1. Promotion of Climate-smart Livestock Management Integrating Reversion of Land Degradation and Reduction of Desertification Risks in Vulnerable Provinces, the objective of which is to reduce soil degradation, increase adaptive capacity to climate change, and mitigate GHG emissions by implementing cross-sectorial policies and climate-smart livestock management, with emphasis in the vulnerable provinces. Adaptation measures considered by the AICCA project in the selected watersheds include sustainable livestock management, thus creating a natural opportunity for coordination and for replication and up-scaling to other watersheds.
2. Conservation and Sustainable Use of Biodiversity, Forests, Soil and Water to Achieve the Good Living (Buen Vivir/Sumac Kasay) in the Napo Province, the objective of which is to promote biodiversity conservation, sustainable management of soils, water and climate change mitigation through the strategic investment of public resources, participative environmental governance and incentive mechanisms in the Napo Province. This project complements AICCA's activities in the Victoria River micro-watershed, Province of Napo, as it promotes the conservation of biodiversity through the consolidation of governance and policy models at the provincial level, the development of incentive mechanisms for conservation, the implementation of sustainable agriculture and livestock practices and support to sustainable production chains to reduce deforestation in the province. Coordinated between the two projects will maintain coherence and articulation of the AICCA's themes and actions in the plans and policies promoted at the provincial level by this Project. The AICCA project will participate in the governance model that is promoted and the adaptation/conservation measures being implemented in the Upper Napo Basin will be complemented and strengthened.
3. Multiplying environmental and carbon benefits in high Andean ecosystems, the objective of which is to contribute to the conservation and enhancement of globally important biodiversity and carbon benefits embracing sustainable land and forest management at multiple scales. The AICCA project will be able to replicate the restoration practices promoted by the project, while the project's monitoring tools will be useful for ecosystem vulnerability studies. The AICCA can complement the activities of this project through the validation of the impact of restoration practices on the provision of water resources, while the project's experience in articulating climate change issues in management plans will be important for advocacy efforts in AICCA planning in watersheds.
4. Integrated Management of Water Resources of the Mira-Mataje and Carchi-Guaitara, Colombia–Ecuador Bi-national Basins, the objective of which is to promote the integrated water resources management (IWRM) in the Mira-Mataje and Carchi-Guaitara

river basins shared by Colombia and Ecuador, by strengthening the institutional and managerial capacities at the regional, local and community levels for achieving environmental and socio-economic benefits.

5. Adapting irrigated agriculture for climate change in the Pacific basins of Peru, the aim of which is to assess the impacts of climate change on water resources and the possible measures for adaptation with emphasis on the irrigated agriculture located in the Pacific basin of Peru.
6. Integrated Water Resources Management in the Titicaca-Desaguadero-Poopó-Salar de Coipasa System (TDPS)**,** with the objective to promote the conservation and sustainable use of water resources in the Titicaca - Desaguadero – Poopó - Salar de Coipasa (TDPS) transboundary system, through the updating the Global Bi-national Master Plan.
7. Advancing Landscape Approaches in Ecuador's National Protected Area System to Improve Conservation of Globally Endangered Wildlife**,** the objective of which is for Ecuador's Protected Area System to apply landscape approaches to increase its effectiveness for conservation of globally important wildlife.

F. Incremental Cost Reasoning

73. **Baseline analysis:** The four countries of the AICCA Project have all embraced the impacts of climate variability and change within the boundaries of their individual possibilities, but also within the experiences and lessons learned in the recently completed "Regional Adaptation to the Impact of Rapid Glacier Retreat in the Tropical Andes - PRAA" Project, which successfully showcased pilot adaptation projects and strategies in the region. While the challenges to addressing adaptation to climate change and variability remain numerous, this GEF incremental cost reasoning focuses on the key priority issues identified at the country level. **Bolivia** recognizes that the control of rain water discharges and flooding in urban areas needs to be addressed in order to reduce overflow of tributary rivers, loss of vial platforms, siphoning, collapse of walls, damage to public and private property, damage to storm drainage systems, sewer systems, flood ponds, wastewater treatment plants, overflow of sewage collectors, and the loss of life. At the departmental level, a baseline exists which includes a historical diagnosis of ENSO events on the Water and Sanitation Sector, technical specifications for storm drainage, national diagnosis of solid waste management, and technical regulation for urban storm drainage in Cochabamba. Unfortunately, these advances do not include considerations for CV/CC, and therefore policies and management instruments which were developed based on these will not be effective in the context of addressing CV/CC. Efforts in Bolivia are addressing the design of flow canalization infrastructure in Cochabamba (PROASRED), a national diagnosis of solid waste management, and environmental education guide in integrated solid waste management, but efforts to address key vulnerability issues are still lacking, resulting in exposure to climate risks.

74. In the Andean Highlands of **Colombia,** predicted negative impacts of CV/CC will result in water regulation challenges (production and storage) and reduced availability for the agricultural sector, with devastating effects to small farmers who produce 71% of the coffee in the country. Current water management approaches lack CV/CC considerations and will not be effective to

address predicted impacts of CC/CV. There are numerous planning and management tools that are applicable to the project intervention areas in Colombia (POMCA, PGAT, POT, PUEAA, PMAP). Unfortunately, these tools and instruments do not include considerations for CV/CC, and are thus expected to have limited effectiveness in terms of adaptation to CV/CC. Farming and watershed management practices in the Colombian Highlands of the project intervention areas continue to be conducted as per conventional methods, leaving them exposed to the impacts of climate change.

75. Strategies, plans, and programs relevant for the hydroelectric sector and for basin and fragile ecosystems' management are available for application and implementation in the project intervention areas in **Ecuador,** but they lack CV/CC considerations, and are thus ineffective in terms of addressing the impacts of climate change and climate vulnerability. Hydroelectric projects in Ecuador were designed without CV/CC considerations, therefore adaptation and resilience were not criteria used to inform their construction and operations, which render them vulnerable to the impacts of climate change. In an effort to secure the ecosystems services (water supply to hydroelectric plants), reduce anthropogenic threats, and maintain the globally significant biodiversity in the project intervention areas in Ecuador, interventions to increase the resilience of these areas are indispensable.

76. Small scale irrigation in the highlands of **Peru** is essential to agricultural production as a primary food source and of employment. There are General Guidelines for identification, formulation and social evaluation of public investment projects, incorporating risk management in a context of CC in Peru, but these are not specifically applicable to the small scale irrigation sector, leaving this sector outside of the reach and effectiveness of the general guidelines. The small size irrigation infrastructure in the high sierras of Peru is rustic and quite vulnerable to climate-induced events such as flooding and landslides. For these reasons, small size irrigation is key to the sustainability of agriculture in Peru in the context of CV/CC. However, current projects in irrigation do not consider CV/CC in their design or operations.

77. Additionally, key economic sectors in all 4 project countries have been identified as vulnerable to the impacts of CV/CC, but no quantification of said vulnerability is available to better inform adaptation and mitigation interventions, thus rendering current efforts inefficient and ineffective. There is a general lack of broad-scale understanding of the impacts of CV/CC and the level of vulnerability that exists in relation to key economic sectors in all project countries, creating a substantial risk for gaining local and policy support in favor of needed adaptation interventions.

78. **Without GEF's intervention**, it is anticipated that Andean countries would still work towards better understanding their vulnerability, developing their resilience, and adapting to climate variability and change, but the process would take considerably longer, and may be too long or too late. It would further reduce the understanding and convincing of local communities and of policy makers that appropriate legal, regulatory, and institutional frameworks are crucial for effective resilience building and adaptation to CV/CC. Knowledge, human and institutional capacity to lead and address CV/CC processes and interventions will continue to be limited, and especially among the personnel of key national and departmental agencies tasked with developing guidelines, standards, and management plans with CV/CC considerations. Private

sector will continue to be self-regulated in issues of climate variability and change with dire consequences for investments, the communities that rely on critical ecosystem services, food production, and the integrity of ecosystem functions that are essential to sustain globally significant ecosystems. Opportunities to introduce landscape scale best management practices and CV/CC alternative practices for agriculture, livestock, reforestation, and fire management will be substantially delayed or lost. Finally, opportunities to validate pilot adaptation measures at the regional level would be lost, as well as all associated opportunities for replication and up-scaling. The systematization of experiences and lessons learned which would have been used as a basis to structure a regional knowledge management strategy for purposes of sustainability and South-South collaboration and exchange at the regional scale would no longer be a possibility.

79. The **GEF Alternative.** While the Program for Potable Water, Sanitation, Solid Waste, and Storm Water Drainage (PROASRED) funded by CAF in **Bolivia** is the primary baseline and source of co-financing to the AIICA project, this program is focused only on the construction of potable water systems and the establishment of waste water treatment plants in Cochabamba, and is deficient in addressing key issues relevant to water resources management, and is also insufficient and inappropriate for attending to issues of vulnerability and adaptation to climate change. In order for water resources management and adaptation to climate change to be properly embraced, efforts by PROSARED must be complemented by other initiatives geared towards the control of rain water discharges and flooding in urban areas, the reduction of overflow of tributary rivers, reduction in the loss of vial platforms, siphoning, collapse of walls, and the avoidance of damage to water resources management infrastructure such as storm drainage systems, sewer systems, flood ponds, wastewater treatment plants, and sewage collectors, and ultimately, the loss of life.

80. SCCF resources will support relevant studies to help understand the vulnerability of water resources to the impacts of CV/CC in Cochabamba, and will be used to better inform a comprehensive sector policy on drinking water and basic sanitation, which will guide public investments and policies, plans and standards for the development, provision and improvement of storm drainage services to better adapt to the impacts of CV/CC. The GEF alternative will support guidelines for determining maximum floods and delimitation of safety zones in rivers incorporating CV/CC factors in Bolivia. GEF resources will support the development and or update of national & municipal level instruments that take into account CC/CV considerations for Storm Drainage Management in Bolivia, providing the required technical guidance and basis for policies, guidelines, and management instruments to be updated accordingly. Adaptation investment projects will be funded from GEF resources to protect water recharge areas, and to increase the resilience of storm drainage in the selected micro basins in Cochabamba. Primary project interventions will include a pilot adaptation project designed and implemented to contribute to the control of flow of storm water drainage in each one of the two selected areas in Cochabamba, a reforestation project as river management technique for protection of water sources, soil stabilization, and reduction of the impact of CO2 emissions.

81. The Lake Tota Project is the primary baseline and source of co-financing of the AICCA project in **Colombia**, and is currently implemented as part of the 'Cooperation Agreement for the Development of Watershed Strategic Plans and Management of Lake Tota' between the Ministry of Environment and Sustainable Development of Colombia (MADS) and the French

Development Agency (AFD). While this project focuses on the integrated and participatory planning and management of watersheds, the administration of water resources, the design and installation of hydro-meteorological networks, the restoration of degraded land, and the strategic planning of watersheds, the approaches, guidelines, models, and management instruments being developed (POMCA, PGAT, POT, PUEAA, PMAP) by said project are deficient in CV/CC considerations and are thus not sufficient for addressing the impacts of climate change.

82. SCCF resources will be used to ensure that the hydrological cycle and water balance models for Lake Tota basin in Colombia include CV/CC projections and are better able to provide required technical guidance in efforts to adapt to CV/CC. Project resources will support studies to help understand the vulnerability of relevant ecosystems in selected water basins to the impacts of CV/CC, including assessments to compare the water use efficiency in the principal agricultural production system (onion and potatoes) under traditional and adaptive practices in Colombia. Project resources will also fund the update of instruments for planning territorial, environmental, and agricultural development and investments, to include CC/CV considerations, to be applied in project intervention areas in Colombia, including guidelines and updates for key tools and instruments such as POMCA, PGAT, POT, PUEAA, and PMAP. SCCF resources will fund the development and implementation of adaptive practices that increase the resilience of agricultural productive systems in Colombia, and will include activities to promote transparency and accountability at the community level; activities to protect watersheds (e.g., monitoring climate and hydrology, reforestation and restoration of river banks, salvo-pastoral practices, recovering water recharge areas, etc.); and adaptive activities in the management of agriculture production (e.g., to improve productivity and water efficiency).

83. Activities of the Machángara Hydroelectric Project and the Victoria Hydroelectric Project will constitute the primary baseline and source of co-financing to the AICCA Project in **Ecuador**. Baseline investments include the implementation of management plans in watershed relevant to the hydroelectric projects, including studies for the control of erosion in the watershed, modelling of the geodynamic stability, hydrological modelling to establish a water quantity and quality inventory, flood risks studies of the Machángara river, improvements in hydro-meteorological monitoring to improve decision-making in terms of water abstraction and use, an environmental aggression avoidance program through the dissemination and awareness of existing laws and regulations in participatory processes with land owners within the watershed, and the altered ecosystem restoration program, which aims to conserve protected areas, natural habitats, pristine ecosystems and places of water importance and of biodiversity conservation, especially in the Machángara river basin. While the efforts by these projects indirectly contribute to climate change adaptation, they were not conceptualized nor are they being implemented to address climate vulnerability and climate change, requiring that interventions be complemented and transformed to intentionally address climate vulnerability and the impacts of climate change.

84. SCCF resources will support adaptation activities that contribute to increasing the resilience of the selected hydroelectric projects in Ecuador and improve their capacity to manage risks to climate extremes; adaptation activities including flow and sediment control, flood management, monitoring of levels and flow rates, hydro-climatic monitoring, an early warning system (EWS) of extreme weather events in supply basins of each selected hydroelectric project, adaptation

activities that contribute to reducing the vulnerability of watersheds and fragile high-mountain ecosystems, and to increasing the resilience of water provision for the selected hydroelectric projects in Ecuador; activities to promote transfer of generated knowledge and capacity to relevant stakeholders, including at least 20% women; and implement strategies to strengthen adaptive capacities of technicians and decision makers and researchers from AICCA-related institutions to enable them to use and interpret climate studies and VC & CC impact modeling and/or apply such information and knowledge to respond timely and effectively to extreme weather events capable of affecting hydroelectric systems.

85. SCCF and GEF Trust Fund Resources (Biodiversity) will support modelling of the CC/CV impacts; the design and/or update of management instruments relevant for the hydroelectric sector and for the conservation of watersheds and fragile ecosystems to incorporate CC/CV considerations in Ecuador, with a view to ensure their effectiveness in addressing anthropogenic threats and adaptation to CV/CC. The project will specifically fund Technical Workshops, Watershed Management Plans, Protected Areas Management Plan, Technical Standards and Guidelines to be considered in the design of hydroelectric projects, and enhanced sustainable management practices of landscapes in project intervention areas. Activities to be funded also will include improved agricultural practices, improved cattle ranching practices, fire prevention plans and protocols for páramos, etc., with at least two measures in protected areas (Cayambe Coca National Park).

86. The AICCA project in **Peru** builds on the baseline established by the "Public Investment and Adaptation to Climate Change" project, which lasted from 2011 to 2014, with an investment of 3 million Euros, implemented by GIZ, which had as counterparts the Ministry of the Environment (MINAM), Ministry of Economy and Finance (MEF), and the Regional Governments of Cusco and Apurímac. Among the main products achieved are: i) Case studies in two regions (Cusco, Piura) for the irrigation sector, which serves as a practical example of the consideration of climate change variables in the different steps of identification, formulation and social evaluation of public investment projects, using risk analysis tools considering climatic scenarios and the cost-benefit analysis of risk reduction measures in the context of climate change; ii) Updated regulatory framework of the Investment System in Peru, which states that all investment projects must take into account the possible impacts of climate change on the sustainability of projects; iii) Digital platform on information risks as a basis for information and decision-making by formulators and evaluators of national investment projects prioritized for sectors that include climatic scenarios, and in more detail, for Cusco and Apurímac; iv) Virtual platform for knowledge management, developing a virtual diploma course aimed at formulators and evaluators of investment projects in Peru, and, aimed at strengthening capacities to incorporate risk management in a context of climate change in public investment projects; and v) Network of Cooperating Partners, forming a network between MINAM, MEF and various international cooperation projects that supported initiatives related to the incorporation of climate change within the management context of public investments.

87. Additionally, the AICCA project in Peru complements activities of the second phase of the project "Public Investment and Adaptation to Climate Change in Latin America - IPACC Regional", including Peru (headquarters), Colombia and Brazil, with the objective of ensuring that political decision-makers and technical staff of the Ministries of Economy, Finance and

Planning in Peru, Colombia and Brazil take into account risks associated with climate change and options for adaptation to climate change in the planning and decision-making processes of public investment; with an investment of 5 million Euros, from 2015 to 2019. Within the framework of the IPACC project in Peru, a commitment exists for prioritized sectors to adapt good practices based on regional experiences and recommendations for climate risk management, which would facilitate synergies with proposed interventions of the AICCA project in Peru, in terms of pilot adaptation projects in water resources and irrigation.

88. SCCF resources will support vulnerability and CC/CV impact characterization study on small-scale irrigation investment projects and estimates of the costs of CC/CV related damages on existing small-scale irrigation projects in Peru. The GEF will fund pilot small-scale irrigation Public Investment Projects (PIP), in Peru, which include appropriate considerations for CV/CC. Between 2-3 pilot small-scale irrigation Public Investment Project-PIP that include CC/CV considerations will be designed in a participatory fashion (including adequate M&E systems), and implemented in project intervention areas. The GEF alternative also will support methodological instruments and relevant technical standards for the inclusion of CC/CV consideration in public investment projects in small-scale irrigation in Peru, and will specifically fund an Adapted CV/CC Guideline for small-scale irrigation projects, and sectorial technical regulation for small-scale irrigation that consider risk management in a CV/CC context.

89. Project funds will support activities to promote transfer of generated knowledge and capacity to all relevant stakeholders to create a better informed climate-smart constituent, and will include brochures, informative events, incorporation of CV/CC consideration in post-graduate curriculum, training in CV/CC to stakeholders in key sectors, and dissemination via social media. Knowledge Management and South-South collaboration as a strategic approach for ensuring regional level impacts, up-scaling, and sustainability will also be support by the GEF alternative. An Incremental Cost Matrix is presented in Annex 4.

III. IMPLEMENTATION

A. Institutional and Implementation Arrangements

90. Per agreement of the four beneficiary countries, and formalized in official letters submitted by the GEF focal points to CAF, CONDESAN has been designated as the executing agency responsible for implementing the technical and fiduciary aspects of the Project.

91. The institutional implementation structure is divided into two collaborative levels, regional and country. At the regional level there is an advisory body (Regional Advisory Committee – RAC), a Regional Coordinator, and a Regional Climate Change Specialist, and a Financial/Procurement Specialist, all forming part of a Regional Coordinating Unit (RCU). The Regional Coordinating Unit will be established by CONDESAN in Lima, Peru, and will be supported by CONDESAN's country offices or partners in Bolivia, Colombia and Ecuador. The lead liaison ministry in each country will chair a National Steering Committee (NSC) consisting of primary project stakeholders at the national level, and will coordinate with the RCU and national offices and/or partners of CONDESAN. The recipient of the Grant will be

CONDESAN, who will be tasked to provide overall quality assurance (including procurement and financial management) and technical guidance, as per a legally-binding agreement to be executed between CAF and CONDESAN.

92. The proposed structure combines a clear regional architecture with strong national ownership. Decisions will be taken at the national level, while the steering role of the project will be kept at the regional level. Fiduciary responsibilities will reside with the RCU ensuring safeguards, procurement and financial management, through its network of country offices and partners. Regional activities will require a supra national level of discussion and approval, which will require constant dialogue between the Regional Coordinator with the RAC (they provide guidelines to the Regional Coordinator to propose regional activities), the National Committees (they can also propose activities in dialogue with the Regional Coordinator, and they approve regional activities as well) and the National Project Focal Point (in the lead liaison ministry and the most up to date person on project progress).

93. While country level arrangements are in general terms similar across countries, there are specific characteristics defined by each country in terms of assignment of responsibilities (e.g., directive vis-à-vis technical roles). Assignment of responsibilities of members of the National Committees and other key partners are to be formalized in subsidiary agreements to be signed during the project's effectiveness period. A detailed description of roles and responsibilities within each country will be provided in the Operational Manual.

94. More details about the specific tasks and composition of the two regional bodies and the two country level bodies are available in Annex 5 (full description will be included in the Project's Operational Manual).

B. Results Monitoring and Evaluation

95. Based on past experiences on adaptation to climate change projects, data collection, assessment and analysis are envisaged as an integral part of all components and activities therein. Given the need for ongoing harvesting of climate change information, insights and knowledge and their incorporation in practice as defined by the project description, the project institutional arrangement includes the participation of a dedicated Climate Change Specialist.

96. CONDESAN will be responsible for the overall monitoring and evaluation (M&E) of the Project through the Regional Coordinator, the Climate Change Specialist and CONDESAN's country offices and/or partners.

97. M&E of Project implementation will be conducted through three main mechanisms (i) assessment of progress at the activity level (specific M&E systems will be developed for the different investment activities) which will generate data required for the purpose of the project (e.g., validate relevance of adaptation activity, and provide feedback to management instruments); (ii) the measurement of progressive achievement of expected project outputs and results (outcomes) as per indicators defined in the Results Frameworks of the participating countries that feed the Regional Results Framework of the overall project; status of progress will

be reported every six months as part of the project progress reports; and (iii) evaluation of the project at certain moments of its implementation: (i) progress reviews during CAF implementation support missions; (ii) mid-term review of project implementation; (iii) final evaluation report to be carried out by the RCU with the input from the country offices and (iv) the Implementation Completion and Results Report (ICR). The ICR will be prepared within six months after closing of the Grant based on the final evaluation report prepared by the RCU.

98. The results monitoring framework of the project is presented in Annex 1. The result framework is the product of consolidating in a succinct manner country specific monitoring results framework developed during project preparation. To ensure that relevant data is generated and collected from investment activities (component 3), dedicated M&E systems for both the national and regional levels will be developed as part of activities design as early as during the project's Inception workshop. The final design of the M&E system, in terms of refinement and operational set up of the system in each country, as well as the alignment of each national system to the Regional Results Framework (consolidation, integration and synthesis of information provided by the countries), will be the responsibility of the Regional Coordinator of the RCU. The RCU shall be responsible for the implementation and continuity of the M & E System, periodic collation and sharing of the opportunities to build on in-country/Gov't led M&E systems. This would not only help to increase ownership, but if there is a way to plug into an existing system, this could also help to reduce cost and ensure post-project sustainability of the maintenance of the system analysis at the national and regional levels. At the country level, CONDESAN's country offices and/or partners shall be responsible for monitoring and evaluation, with the oversight of the Regional Coordinator. The executing entity(s) of each activity must provide the relevant data and analysis to the National Project Focal Point in each country, who shall coordinate with the Regional Coordinator on the interpretation and validity of monitoring results, and the identification of issues which may warrant consultation with the RAC, especially those relating to delivery of project outputs and outcomes at the regional level.

99. To increase country ownership, the Project will seize opportunities, where available, to align Project required M&E with in-country/Government led M&E systems, already used and operational in partner institutions. While this will not only help to reduce costs, this approach will ensure post-project sustainability of the maintenance of the systems. A Monitoring and Evaluation Work Plan for the Project is provided in Annex 4.

C. Innovativeness, Up-Scaling and Sustainability

100. In the context of the AICCA Project, 'Technologies' is understood to be a combination of knowledge, methodologies, skills and experiences. The innovativeness of the project in all project countries is centred around the intentional incorporation and institutionalization of climate variability and climate change considerations into a set of management approaches, methodologies, planning tools, experiences, and guidelines which have been tested and proven in productive sectors, landscapes, watersheds, municipalities, and protected areas, but never within a climate variability or climate change context. These include, but are not limited to vulnerability studies and modeling of impacts of CC in watersheds in all four countries; guidelines for the incorporation of CV/CC in the design of hydroelectric projects in Ecuador, in Public Investment

Projects in the Irrigation Sector in Peru; adaptive management plans for protected areas and watersheds in Colombia, Ecuador and Peru; CV/CC guidelines for urban drainage and water preservation in Bolivia; climate warning systems for watersheds in Colombia and Ecuador; adaptive measures to increase the resilience of hydroelectric power plants and the high Andean basins and ecosystems that store water and regulate the water balance throughout the year; to name a few. To further illustrate this point, for example, the availability of future climate projections are inputs that are used as 'input data' in impact models that allow the estimation, under considerations of climate change, liquid flows and sediment flows, which in practice represent critical aspects for the management and regulation of water resources, and thus their potential use either for agriculture, hydropower or human consumption. This way of generating technical inputs and data for management based on specific climate change scenarios represents an innovative process in the management of watershed and water resources. More specifically, in the case of Adaptive Management Plans for Protected Areas and Hydrographic Basins, the innovation is to insert the climate change adaptation variable into existing plans, which to date lack this characteristic. In the case of Climate Alert Systems and other adaptation measures that seek to increase the resilience of watersheds and basins, the innovations include the use of climate forecasts and other monitoring tools that allow forecasting and timely action against potential impacts that could affect human and natural systems in watersheds, susceptible to changes in climate.

101. Given the conditions of ratification of the Paris Agreement and the current financing opportunities available, the possibilities for replication and up-scaling are considered to be good in project intervention areas and in areas with similar characteristics within each country and the Andean region. Project countries have shown both the commitment and the political will to mainstream climate change into all major sectors, institutions, and decision-making processes, as evidenced through the successes obtained in other recently concluded and related initiatives and projects. Additionally, the overall design of the AICCA project revolves around the implementation of 'pilot projects', with the clear and explicit intention that these could be replicated nationally, with the potential for replication regionally and extra-regionally.

102. The strategy to ensure sustainability is the consolidation of inter-institutional agreements and the creation of regulations in coordination with the governing bodies involved in the climate change mainstreaming process. The institutionalization of CV/CC considerations into planning tools, management tools, and guidelines will guarantee a structural and operational presence of CV/CC considerations in decision-making institutions that will resist changes in government administration. The project will achieve the development of a regional community/cadre of practice in CV/CC mainstreaming that will prove to be an important asset in extending this expertise to other countries and regions. There is a strong sense of ownership among multiple stakeholders involved at national and sub-national levels, working in a collaborative manner and led by the national environmental authority in each country. This robust constituent base provides a solid foundation for the sustainability of project outputs beyond the project's life.

103. The project will embrace a Knowledge Management Strategy to foster participatory processes, capacity building, and access to information (knowledge about the impacts, vulnerability and options to increase resilience) as means to effectively engage communities that are affected and/or play a role in the protection and conservation of water resources in the

different sectors. Their involvement, understanding of the issues, and the role they can play act as a tool to promote sustainability of activities beyond the life of the project at the local, national and regional levels. CAF as the GEF Agency, will assure that knowledge is systematized and available through open channels, through-out and after the project implementation, with the governmental entities responsible for those instruments, e.g., National Public Investment methodology of the Ministry of Economic and Finance in Peru, Guidelines for the formulation of Watershed Management Plans (POMCA) of the Ministry of Environmental and Sustainable Development in Colombia.

IV. KEY RISKS AND MITIGATION MEASURES

A. Overall Risk Rating and Explanation of Key Risks

Risk Rating Summary Table Summary

Stakeholder Risk	Substantial
Implementing Agency Risk	
Capacity	Medium
Governance	Medium
Project Risk	
Design	Substantial
Social and Environmental	Medium
Program and Donor	Medium
Delivery Monitoring and Sustainability	Medium
Overall Implementation Risk	Substantial

104. **Project Design Risk:** Given the complexity of the project design and ambitious objectives, in combination with budgetary and financial constraints with implications of implementation progress in each country, risks can be considered substantial. Investment in the field in the four countries is planned for areas vulnerable to climate change, therefore representing an additional element of risk.

Corresponding Risk Mitigation Action: There is an expectation that adequate employment compensation and benefits in accordance to project TORs for qualified personnel involved in implementation, will secure the right staff with the right skill set and project implementation experience to assertively identify potential risks and introduce strategies to mitigate their impacts through-out project implementation. The Project's Monitoring & Evaluation (M & E) Plan to be developed at Project Inception, will include provisions for quarterly identification of project implementation risks and the identification of mitigation options and actions to enhance opportunities and reduce threats to the project's objectives. The said M & E Plan will also assign 'responsibilities' for risk mitigation actions at 3 levels of project implementation: Project Focal Point & National Committee; CONDESAN, and CAF. The quarterly approach to the monitoring and control of risks on an ongoing basis through-out the life of the project will allow for a timely and dynamic evaluation of risk mitigations being implemented, and will allow for almost real time sharing of lessons learned in this regard with project partners in all 4 countries. Risk mitigation successes and lessons to be

documented in Quarterly M & E Reports will provide an informed basis upon which Project personnel will be able to develop and apply adaptive management approaches to complex project design challenges, in consultation with project beneficiaries and the GEF Implementing Agency. Risks from investments in areas vulnerable to climate change will be mitigated through the formal incorporation of CV/CC considerations into planning and management guidelines governing public investments in project intervention areas.

105. **Stakeholders Risk**: At the country level, changes in government at the national or regional level during project implementation constitute a risk in terms of essential project personnel from key government counterpart agencies not retained by new government.

Corresponding Risk Mitigation Action: This risk will be mitigated by strengthening project institutions and socializing communities to ensure long term commitment and involvement. The participation of local user groups and CSOs will help eliminate total dependence on government staff and guarantee project institutional memory, therefore mitigating this risk. Additional institutional memory to be acquired through systematic monitoring by CONDESAN and CAF will also be available to ensure smooth continuity of project activities.

106. **Implementing Agency Risk:** The lack of experience by CAF in implementing GEF projects may pose a moderate risk to timely and effective project implementation.

Corresponding Risk Mitigation Action: The oversight capacity of CAF is evidenced by numerous successfully implemented projects in many countries, including in the four countries participating in this project. The effective implementation of the Environmental and Social Safeguards Manual of CAF approved by the GEF will also help to ensure proper project implementation. The experience of CONDESAN in the region in executing GEF projects is expected to contribute to a smooth implementation, and CAF's robust due diligence assessment of CONDESAN will ensure maximum transparency and effectiveness.

107. **Overall project implementation risk** may be substantial given the complexity of the design, and the number of stakeholders involved.

Corresponding Risk Mitigation Action: Project design included substantial participation by a wide range of participants as evidenced elsewhere in this Project Document, thus guaranteeing a broad-base ownership of the project. Additionally, though regional in scope, the country-specific projects to be supported by the project have strong counterpart support, as evidenced by the level of co-financing. Regional outputs will be secured through an appropriately structured Regional Steering Committee, which will ensure that regional up-scaling of national successes is embraced and systematized in regional knowledge management efforts to be supported by the project. Additionally, the Results Framework of the project contains specific indicators which can be used to determine the level to which regional outputs have been achieved. Besides, the combined capacity of CAF as GEF Implementing Agency and CONDESAN as the project's Executing Agency will minimize complexities and maximize adaptive approaches to project implementation.

Country by country risks and mitigation measures to be taken by the project are detailed in Annex 6.

V. SUMMARY PROJECT ANALYSES

A. Economic and Financial (if applicable) Analysis

108. The logic for choosing project activities included the selection of intervention areas through the application of a multi-criteria method and the characterization of socioeconomic and environmental conditions in the selected intervention areas. Based on the understanding of the socio-economic and environmental conditions of the intervention areas and on the circumstances surrounding the participation and management of the various social and institutional actors in the area, the portfolio of possible measures to adapt to climate change was defined, grouped by typologies that respond to two major groups: i) measures to reduce vulnerability and (ii) measures to increase resilience. The purification of the portfolio of measures was done through technical reasoning (use of criteria such as predominant ecosystem types, conservation status of ecosystems, magnitude of works, general state of human intervention in the basin, type of human systems settled in the basin , presence of other uses and users of water in the basins, presence of organizational structures for watershed management in the intervention areas, existence of protected areas, availability of hydro-climatic information, etc.) and knowledge based on previous experiences of adaptation to climate change in the region. The process was based on the best understanding and the experience of the governing body of climate change in the country and other invited institutions. The measures were chosen based on a qualitative analysis of their feasibility and not necessarily on individual costs, probable execution times, availability of favourable frameworks (in the legal, institutional and environmental aspects), and the estimated time for their design and implementation. Those measures that were estimated can be implemented in relatively short times, have the highest probability of co-financing, and those that are most likely to consolidate alliances, were favoured.

109. Firstly, the project is expected to be cost-effective by complementing the baseline investments defined under the 'GEF Alternative' Secondly, the project is expected to be cost-effective as a result of its ability to bring together various partners from national economic development sectors such as environment, agriculture, water, forestry, and hydro-electric sectors. Additionally, project activities will contribute to the achievement of more resilience and sustainability of High-Andean ecosystem and enhanced biodiversity management in selected production landscapes in Ecuador, directly addressing threats to globally important biodiversity, while at the same time addressing resilience to climate change, under one project. In this way, and with the relatively limited resources available, a far-reaching impact is anticipated, since management/policy instruments affecting multiple sectors will be developed and embraced. Investments at the level of individual countries, in the generation and exchange of knowledge, technology transfer, institutional strengthening; mainstreaming of climate change considerations into policies, strategies and programs; and the design and implementation of adaptation measures in priority sectors will provide opportunities for South-South transboundary collaboration, while achieving tangible economy of scale in knowledge management through the maximization of experiences and lessons learned.

110. The anticipated fiscal impact of the project on the participating countries is expected to be modest. Counterpart contributions are largely in kind, in terms of staff, the provision of office space, and the recurrent costs for fuel, equipment maintenance and consumables, which are already absorbed into the existing budgets of the implementing agencies, and should therefore not be a challenge in the future. Finally, the cost-effectiveness of the project is further strengthened through the involvement of CAF as the GEF Implementing Agency and CONDESAN as Regional Implementing Agency, together with the National Ministries of Bolivia, Colombia, Ecuador and Peru. This ensures that an international partner with experience in managing GEF projects is able to support project execution and strengthen the administrative, financial and technical oversight of the project, with priority on efficient execution of funds, achievement of economies of scale, and the maximization of return on project investments.

B. Technical

111. The project is considered to be technically sound, given that:

a. Processes and methods to be used for the preparation of Land Use/Territorial Development Plans and Watershed Management Plans are well tested, and will thus facilitate the inclusion of CV/CC considerations.
b. The Project will minimize technical difficulties in applying new technologies by developing and implementing agreed protocols for collection, processing and dissemination of information, technology transfer and broader South-South collaboration.
c. The involvement of the private sector in pilot projects brings years of experience and technical know-how, thus providing a high degree of assurance to the quality of the pilot projects.
d. The Ministry of Environment of Ecuador is experienced in the development and implementation of protected areas and ecosystems management plans, and will thus ensure effective integration of CV/CC considerations into efforts to address the threats to globally significant biodiversity and critical Andean ecosystems in the project area.
e. The project employs decentralized structures that ensure the participation and contribution of local stakeholders at the level of departments, regions, municipalities, watershed councils, productive sectors, and communities.

C. Financial Management

112. All activities related to financial management will follow the Financial Procedures Agreement (inclusive of all annexes) between the Development Bank of Latin America (CAF) and the International Bank for Reconstruction and Development (IBRD) as Trustee of the Global Environmental Facility Trust Fund (GEFTF), signed on September 28th, 2015. This agreement contains provisions for project operations to meet and exceed all internationally-accepted financial and fiduciary management standards, to be evidenced in annual, final independent audits, and other periodic audits of the project accounts, as may be necessary. Staff of the project's executing agency that are involved in the day-to-day management of project resources will be trained in financial management policies consistent with the provisions of the above-mentioned agreement, during and after the Project's Inception.

D. Procurement

113. All activities related to procurement will follow the Procurement Policies of CAF as defined in the Procurement and Contracting of Goods, Services and Works Manual, published on March 17th, 2015 by the Directorate of Physical Infrastructure, Logistics, and Administration, Version MN/DIOFLA 038 of February 2016. These policies contain provisions for operations to meet and exceed all internationally-accepted financial and fiduciary management standards, to be evidenced in annual and final independent audits of the project's procurement and disbursement processes. Staff of the project's implementing agency that are involved in the day-to-day management of project resources will be trained in CAF's procurement policies as described above and in procurement planning during and after the Project's Inception.

E. Environmental and Social (including Safeguards)

114. The implementation of project activities will be in accordance the Environmental and Social Safeguards for CAF/GEF Projects Manual, Version 1 of May 2015. The Project is classified as Category B, according to the Guidelines and Procedures on Environmental and Social Safeguards for CAF/GEF Projects Manual (Section V.I.2 Annex I). Project interventions, in particular on-the ground interventions under component 3, are not expected to cause major adverse environmental impacts, and instead, in many cases will improve the environmental and social conditions prevailing in the areas of intervention, including greater resilience capabilities to deal with extreme events, impacts of climate variability and climate change. Minor site-specific environmental impacts in natural habitats and forests may be expected from some on-the-ground interventions, but mostly temporary.

115. Since the exact location and specificity of activities have not been determined yet (general areas of interventions have been identified in Bolivia, Colombia, and Ecuador; in the case of Peru this will be done under component 1), an Environmental and Social Management Framework (ESMF) is required for each project country, that conforms to all safeguards triggered by the project and applicable national regulations, and to the Guidelines and Procedures on Environmental and Social Safeguards for CAF/GEF Projects Manual. The aim of each country ESMF is to be a practical tool that adheres to the existing regulatory framework in each country, complemented with specific project activities when considered necessary, that describe clear processes to identify impacts, identify and implement mitigation actions, with clear timing and allocation of responsibilities as well.

116. The identification of exact locations and activities will be done through participatory processes during implementation. All triggered safeguards will be addressed through the ESMF. Pest Management Plans (following principles of Integrated Pest Management Systems) will be developed as part of project activities in Colombia and Peru, and possibly in Ecuador. ESMF for all four countries were developed within the context of each Technical Country Report (*Informe Técnico de País*) during project preparation, and each country shall be required to fully embrace their specific ESMF during project implementation, through binding agreements to be signed

between CAF and each individual country, as a condition of first disbursement, and thereafter will be disclosed on CAF's Website.

F. Gender Mainstreaming

117. Climate change can exacerbate inequalities. Because of their position in many societies, women tend to be more vulnerable to climate variability and change, and often experience larger negative impacts than men. Adaptation strategies should not consolidate or extend these inequalities. In its efforts to fully integrate gender mainstreaming, the AICCA project will be guided by the principles that gender elements are important drivers and incentives for achieving global environmental and adaptation benefits, and in ensuring gender equity and social inclusion. The AICCA project also embraces the fact that the needs, interest, and capabilities of women are habitually structurally different from those of men, in relation to the access, use, and management of water resources within the watersheds and proposed project intervention areas, and thus, must be given special consideration in ensuring equal access to the resources and services of the project.

118. The AICCA project will seek to institutionalize gender mainstreaming at all levels of intervention and operation of the project in Bolivia, Colombia, Ecuador and Peru, through the development and implementation of country-specific Gender Mainstreaming Action Plans, which will follow the Gender Analysis Approach, Guidelines and Procedures described in Section XIII of the Environmental and Social Safeguards for CAF/GEF Projects Manual, with particular attention to the potential roles, benefits, impacts and risks for women and men to ensure meaningful participation and the equitable distribution of benefits among women and men to be derived from project interventions. The said country-specific plans will also address social vulnerability and the limited capacity to adapt to climate change and the challenges that often limit the participation of women in the agriculture, irrigation, and water resource governance systems. To this end, the Project will build on progress and efforts being made in project countries to consolidate gender mainstreaming and institutionalization, and will embrace the lessons learned and opportunities provided by women participation in institutional structures such as Water Users Organizations in Peru, the mainstreaming of gender through the Quota Law in Colombia, the Women's Platform of Cochabamba and the Departmental Association of Council Women in Bolivia, and the role of women in Watershed and Departmental Councils in Ecuador. In consultation and with the participation of women at the levels of relevant government ministries, regional governments, and operational governance structures of the Project, special efforts will be made to ensure that gender equity concerns are voiced during project consultations at all levels, in all policy, program, administrative and financial activities and procedures of the project, thereby contributing to a profound organizational transformation in all entities directly involved in the Project; gender training for both men and women in all opportunities provided by the Project; increasing women's access to opportunities for continued personal growth, increasing their leadership, and their capacity as agents of change to disseminate adaptive measures through the communities in which they live; and empowerment of women by their participation in water and climate change management–related planning processes.

119. In order for Gender Mainstreaming Action Plans to be most effective and have the intended impact on project implementation and results, these would have to be developed as an early priority at Project Inception, and specifically within the first 3 months of project implementation. Since early project planning would typically define major strategies and actions which would influence the life of the project, it will be crucial for gender involvement and mainstreaming be secured in the early planning stage to ensure maximum and meaningful gender participation from the onset. Gender Mainstreaming Action Plans will be mandatory project policy documents to be consulted and followed in the definition, conceptualization and implementation of all project components and investments, and will form part of the required monitoring and evaluation of the project.

120. In terms of the integration of gender considerations into specific project activities and outputs, the AICCA project will ensure that budgetary resources are allocated to incorporate gender analysis and gender concerns into all aspects of policy development, procedures, guidelines, projects, and monitoring systems of the Project, as part of the process to 'institutionalize' gender mainstreaming in climate change adaptation initiatives in project countries, and particularly, in the governance of water resources in the watersheds and municipalities targeted by the project. To this end, watershed-level and municipal level committees and councils deciding on project interventions will have guaranteed spaces reserved for women participation in said processes, and similarly, all project training and consultation opportunities shall reserve no less than twenty percent (20%) of all spaces for women, either as individuals with a legitimate interest in water resources or as representatives of Women's Organizations in the project intervention areas. Project activities to promote transfer of generated knowledge and capacity to all relevant stakeholders to create a better informed climate-smart constituent will include the introduction of information and communication technologies, which are critical tools for women's education, empowerment, economic productivity, and participation, thus contributing in a systematic manner to improvements in the overall livelihood of women.

121. Consistent with the need to ensure gender mainstreaming through-out the project, performance indicators with gender-specific percentages have been defined and form part of the formal monitoring and evaluation framework of the overall project, as evidenced in the Logical Framework of the project. Compliance with the required outputs and standards of the Gender Mainstreaming Action Plans will be subject to independent external auditing to be explicitly referenced in the Project Operations Manual, in all Subsidiary Agreements between CAF and the four countries, and in the Terms of Reference for the Mid-Term Evaluation and the Terminal Evaluation of the project.

G. Socio-Economic Benefits

122. The socio-economic benefits to be obtained in the four project countries are diverse and spread across multiple municipalities in each country. For example, in Colombia, more than half (51% of 27,000) of all direct project beneficiaries are women residing in the municipalities of

Aquitania, Cuítiva, Tota y Sogamoso, within the Lake Tota Watershed. These persons will benefit directly from a reduction in their vulnerability to Climate Change in their lands, greater water security for domestic and livestock use, and greater integration of women in the governance of water resources with reduced levels of conflict. Additionally, more than 40% of the families producing potato and cattle in the project area are led by women, with approximately 832 of these families being targeted by project interventions to adopt climate resilient changes to their methods of production which will result in greater stability in production and marketing of their products, with increased income and profit margins. Residents in Cochabamba (Bolivia) will benefit from improved water security, reduced vulnerability to floods, increased resilience to adverse phenomena, enhanced capacity in new technologies of sustainable drainage incorporating measures of adaptation to climate change, reduction in exposure to disaster risks, and reduction of damage to property and human life from climate related flooding. Additionally, over 50,000 trees will be planted in reforestation efforts to reduce erosion and approximately 97,426 inhabitants will benefit from teaching and learning processes that provide a preventive incentive for the protection of Mother Earth from an adaptation approach to climate change.

123. Inhabitants in the immediate project intervention areas of the project in Ecuador, as well as the larger population serviced by hydroelectric power will benefit from reduced vulnerability to power shortages as a result of unstable and insufficient water supply to watersheds and catchment areas, hydroelectric plants will be more resilient to the impacts of climate change, high mountain ecosystems will be less vulnerable to climate change and thus able to continue to provide ecosystem goods and services to the community, reduced risk of flooding and landslides, and enhanced water quality. Benefits in Peru will see enhanced management of climate change risks associated with Public Investment Projects in irrigation, reduced vulnerability of farmers and users of the irrigation system to the impacts of climate change, improved water efficiency in irrigation systems, and improved water security in irrigation systems, resulting in enhanced stability in agricultural production and sustained livelihoods in the high mountain region of Peru.

H. Stakeholder Participation

124. Stakeholders participated in the identification of project priorities and in the definition of planned outputs and outcomes during interviews, consultations, and in the development of National Country Reports (*Informe Técnico de País*) in Bolivia, Colombia, Ecuador and Peru. All four countries had the opportunity to review and comment on proposed project activities and to provide specific inputs to the project formulation process. Stakeholder participation at the country level will include the provision of co-financing, participation of technical staff in workshops, training, and tools development, the facilitation of local project events and processes, the provision of project oversight through participation on the RSC, as data sources and technical expertise relevant for the technical components of the project, and knowledge management through the institutionalization of project results and lessons learned to allow for up-scaling, replication, and sustainability. At the regional level, stakeholder engagement will focus at the facilitation of regional project processes in project countries and in the identification of opportunities for optimization of resources, joint investments for project delivery, coordination and collaboration in the production of technical outputs.

125. The inclusion and engagement of Civil Society Organizations (CSOs), indigenous peoples, and the public in the implementation of the AIICA project will be ensured via their direct participation in the governance and decision-making bodies of the project. Existing watershed-level and municipal level committees or councils will be invited to form part of the project's technical and consultative bodies. Special effort will be made to ensure that CSOs and indigenous people active or present in the area of influence of the project are represented in project decision-making and in interventions which may affect their interests. Of note is the fact that CSOs are already represented on watershed councils and other user group committees with which the AICCA Project will have key partnerships. For example, these include the 'Consejo de Cuencas' or Watershed Councils and sector interest groups such as CORPOICA in the case of agricultural activities in the area of influence of the project in Colombia, and CORPOBAYACA as a key partner for incorporating CV/CC considerations into POMCA and PMATs at the municipal and watershed level in Colombia. Similar arrangements are in place in other countries such as the Federations of Neighbourhood Groups and Watershed Councils in Bolivia, and the Irrigation Users Organizations and Watershed Councils in Peru and Ecuador. There will also be key partnerships with other civil society groups including several educational institutions in Bolivia and in Ecuador. Additionally, it must be emphasized that in all instances, the standards and guidelines of the Environmental and Social Safeguards for CAF/GEF Projects Manual applies, including safeguards addressing indigenous peoples.

ANNEX 1: RESULTS FRAMEWORK AND MONITORING

Country: Andean Countries

Project Name: Adaptation to the Impact of Climate Change in Water Resources Project (CAF01/GEF5384)

Results Framework

Project Development Objectives

PDO Statement:

To generate and share data, information and experiences relevant for adaptation to climate variability and change, and useful for formulation of policies in selected sectors, and to pilot investments in priority areas in the four Andean countries.

These results are at | Project Level

Project Development Objective (Outcome) Indicators

Indicator (Outcome) Name	Baseline	Cumulative Target Values				
		YR1	YR2	YR3	YR4	End Target
Knowledge products generated provide inputs for the incorporation of pertinent considerations of adaptation to the impacts of climate variability and change on water security into management instruments in the selected sectors (number).	0	6	7	2	1	**16**
Key actors are better prepared to incorporate climate variability and change (CV/CC) considerations for water security, in water systems, water management and water use within the sectors involved (number).	0	15	30	45	45	**135**

Pilot adaptation measures in the field have allowed validating the importance of inclusion of CV/CC considerations on water security in the selected sectors and the information generated is used to amend management instruments.	0	0	3	6	4	**13**
New tools[15] about the impact of CV/CC on water security in each participating country are shared and discussed with the same sector actors from the other three countries and explored (number of tools shared).	0	0	2	2	4	**8**
Identify, share and explore common denominators[16] regarding adaptation to impacts of CV/CC for water security in management instruments (public and private) at regional level (number of denominators).	0	0	2	2	3	**7**

PROJECT OUTPUT INDICATORS
Component 1: Generation and exchange of knowledge, technology transfer and institutional strengthening
Component Result: Knowledge and capacity has been generated, strengthened, and transferred in relation to water security in the context of vulnerability to climate variability and change on water resources in selected sectors

[15] E.g. concepts, experiences, learnings, instruments and management models
[16] For example, methodologies or systems of technical assistance, environmental and social implications, etc.

Output indicator	**Baseline**	**Y1**	**Y2**	**Y3**	**Y4**	**Target**	**Frequency**	**Verification Source**	**Responsibility**
1.1 Relevant studies to help understand the vulnerability of water resources to the impacts of CV/CC are generated.	0 0	1 (Col) 1 (Bol) 2(EC)	1 (Col) 1 (Bol) 2(EC)	0 2(EC)	0 1(EC)	**Colombia**: IDEAM's hydrological cycle and water balance models for Lake Tota basin include CV/CC projections. 2 participatory assessments to compare the water use efficiency in the principal agricultural production system (onion and potatoes) under traditional and adaptive practices. **Bolivia**: Study of low risk scenarios CC / VC in Cochabamba, through two-dimensional modeling to identify risk areas for flooding and landslides in watersheds of Cochabamba. Guidance for determining maximum floods and delimitation of safety zones in rivers incorporating CV / CC factors. **Ecuador**: studies on climate vulnerability for each of the two selected hydroelectric projects,	Progress reported in biannual progress reports Progress reported in biannual progress reports	Models available and producing data Data on water footprint for both crops (Col) Studies available (Bol, Ec, Pe)	National Coordinators with inputs from relevant members of each country's National Committees National Coordinators with inputs from relevant stakeholders: CIAT (Col), National Committee (Bol, Ec)

		2 (Pe)				and modelling of the CC/CV impacts on both projects as well. 2 Gap Analyses, 2 Workshops and, 2 Technical Meetings on Sustainable Management of Andean ecosystems. 1 Impact Model, 2 Environmental Management Plan, 2 Local Development Strategies, 2 Land Use Plans, 2 Sector Policies, 1 Enhanced Regulatory Framework. **Peru**: vulnerability and CC/CV impact characterization study on small-scale irrigation investment projects; study to estimate the costs of CC/CV related damages on existing small-scale irrigation projects.			
1.2 Studies to help understand the vulnerability of relevant ecosystems in selected water basins to the impacts of CV/CC are generated.	0	0	1 (Col)	0	0	**Colombia**: Updated analysis of territorial vulnerability, and ecological structure based on ecosystem services.	Progress reported in biannual progress reports	Map of ecological structure, and vulnerability diagnosis and risk map Progress report	C: Corpoboyaca
1.3 Activities to promote transfer of	0		2 (Col)	0	0	**Colombia**: (i) 2 brochures on:	Progress reported in	Booklet, Report of events (Col,	National Coordinators

generated knowledge and capacity to relevant stakeholders take place, including at least 20% women	0 0 0	Inclusión of CC/CV in curriculum / 1 event (Bol) 4 (Ec)	15 beneficiaries / 1 event (Bol) 3 (Ec) TM ready and implemented / 1 event / 1 dis. space	2 events (Bol) 3 (Ec) TM implemented / 1 event / 1 dis. space (Pe)	2 events (Bol) 3 (Ec) TM implemented / 1 event / 1 dis. space (Pe)	hydrological cycle and CV/CC projections, and Ecological structure, ecosystem services and vulnerability; (ii) 4 events to disseminate agro-climatological management of production systems to service providers of technical assistance. **Bolivia**: Curriculum content on the CC / CV impacts as part of postgraduate training programs incorporating factors affecting threats (hydrological and hydraulic models), risk management, management of urban runoff with SUDS (UMSS / UMSA research agreement); at least 15 professionals trained formally; at least 6 events for information exchange on the project between the relevant stakeholders. **Ecuador**: strategy to disseminate project knowledge generation including at least 13 dissemination events. **Peru**: Training module for on CC/CV impacts and risk mgmt. in small-scale irrigation	biannual progress reports	Ec, Pe) Curriculum content, reports of training modules; reports of meetings/events (Bol, Pe)	with inputs from relevant members of each country's National Committees or relevant stakeholders

			(Pe)			projects incorporated in the MEF training program to SNIP operators and other professionals. At least 3 knowledge-sharing events, and 3 information dissemination spaces established (e.g., web sites that present project information).			

Component 2: Mainstreaming of climate change considerations into policies, strategies, programs, and other relevant management instruments
Component Result: CC/CV considerations have been included in a series of relevant management instruments for the selected sector in each country

Output indicator	**Baseline**	**Y1**	**Y2**	**Y3**	**Y4**	**Target**	**Frequency**	**Verification Source**	**Responsibility**
2.1 National & Municipal level instruments that take into account CC/CV considerations for Storm Drainage Management in Bolivia.	Historical diagnosis of ENSO events on the Water and sanitation sector. Technical specifications for storm drainage National diagnosis of solid waste management in Bolivia Technical regulation for urban storm drainage w/o CV/CC in Cochabamba	Scope and content of documents Scope and content of documents Scope and content of documents at municipal level - Cochabamba	0	Prepared National doc Prepared Municipal doc Prepared	Socialized National doc Socialized Municipal doc Socialized	Technical Regulation upgrade for the design of storm sewer systems that incorporate CC / CV in the preparation of public investment in storm drain projects. 1 solid waste management guide that incorporates mechanisms for storm drain cleaning 1 industrial solid waste management guide in the field of civil construction (rubble) Storm water drainage Master Plan for the metropolitan area of Cochabamba	Progress reported in biannual progress reports	Guideline for Vice Ministry (VASP) consideration. Technical reference report for consideration of VAPS. Plan and regulatory/operational instruments updates for Municipality consideration	Bolivia's National Coordinator with input from VAPS Bolivia's National Focal Point with input from GAMCbba.
2.2 Instruments for planning territorial, environmental, and agricultural development and investments	0	0 Tota's POMCA Tota's 3 PGATs	2 guides Tota's PMAP Tota's PUEAA	1 guide	1 guide	Guidelines for the preparation of at least 4 instruments have been updated: POMCA (zoning and hydrological basins mgmt. plan), PGAT (technical assistance mgmt. plan), POT (territorial zoning plan),	Progress reported in biannual progress reports	Respective guidelines with CC/CV considerations	Colombia's National Coordinator with input from MADS for guidelines, and Corpoboyaca for Tota's instrumets

include CC/CV considerations in Colombia						and PUEAA (program for the efficient use and saving of water) Updated POMCA for Tota 3 PGATs prepared for Tota PMAP (Environmental Mgmt. plans for Paramos) for Tota			
2.3 Design and Management instruments relevant for the hydroelectric sector and for the conservation of watersheds and fragile ecosystems incorporate CC/CV considerations in Ecuador.	0 0 0	Identified Identified 0 1	2 3 1	1 2 1	1 2 1	4 technical procedures and/or administrative processes of hydroelectric sector entities (e.g., operators, controllers) include CC/CV considerations. Strategies/plans/programs relevant for the hydroelectric sector, or for basin and fragile ecosystem's management, which are aligned to development and zoning plans, are prepared or updated so as to include CC/CV considerations. 3 Technical Workshops, 2 Watershed Management Plan and 1 Protected Areas Management Plan incorporate Technical Standards and Guidelines, 2 landscapes with enhanced sustainable management	Progress reported in biannual progress reports	Selected technical/administrative procedures have been established. Selected strategies, plans or programs have been prepared or updated. Selected technical/administrative procedures have been established. Selected strategies, plans or programs have been prepared or updated.	Ecuador's National Focal Point with input from relevant members of the National Committee

						practices 3 methodological guidelines or similar instruments for the inclusion of CC/CV in the design of hydroelectric projects are prepared. Availability of 4 new or updated guidelines/technical regulations that allow for the inclusion of CC/CV considerations in the design phase of hydroelectric projects, including issues on water security, conservations and management of basin and ecosystems that supply water for hydroelectric projects.			
2.4 Methodological instruments and relevant technical standards for the inclusion of CC/CV consideration in public investment projects on	General Guidance for identification, formulation and social evaluation of public investment projects – incorporating risk mgmt. in a context of CC.	0 0	1 0	0 1	0 0	Adapted Guidance for small-scale irrigation projects prepared. Sectoral technical regulation for small-scale irrigation that considers risk management in a context of CC/CV prepared.	Progress reported in biannual progress reports. Availability of documents in MEF and MINAGRI's web site	Selected technical/administrative procedures have been established. Selected strategies, plans or programs have been prepared or updated.	Peru's National Coordinator with and project's National Committee

small-scale irrigation in Peru.									

Component 3: Design and implementation of adaptation measures in priority sectors
Component Result: Pilot CV/CC adaptation measures and investments validated and implemented in the drinking water and basic sanitation sector, the environment and agriculture sector, the hydroelectric sector, the minor irrigation sector, and in watersheds and fragile ecosystems in one or more of the project countries.

Output indicator	**Baseline**	**Y1**	**Y2**	**Y3**	**Y4**	**Target**	**Frequency**	**Verification Source**	**Responsibility**
3.1 Adaptation investment projects to protect water recharge areas, and to increase the resilience of storm drainage in the selected micro basins in Cochabamba, Bolivia.	Final design of flow canalization infrastructure in Cochabamba (PROASRED) 0 National	Design of 1 pilot Design	50% implementation of one pilot Implementation in 5% of the population	75% implementation of pilot Implementation in 10% of the population	100% implementation of 1 pilot Implementation in 15% of the population	A pilot adaptation project with at least 30% participation by women, designed and implemented to contribute to the control of flow of storm water drainage in each one of the two selected areas in Cochabamba (including adequate M&E systems). Reforestation project as river management technique for protection of water sources, soil stabilization, reduction of the impact of CO2	consultant/works contracts delivered; Progress reported in biannual progress reports.	Approval reports of final designs. Pilot implemented; consultant/works contracts delivered. 50,000 planted trees Register of	Bolivia's National Coordinator with inputs from local technical specialists, GADGAM Cochabamba, and VAPSB

	diagnosis of solid waste management in Bolivia; environmental education guide in integrated solid waste management	Design	Implementation in 5% of the population	Implementation in 10% of the population	Implementation in 15% of the population	emissions. Project strengthening resilience through education and awareness about integrated solid waste management with a focus on storm water drains Systematization, editing and printing of experiences and learning from AICCA-Bolivia project	Progress reported in biannual progress reports.	groups trained	
3.2 Adaptive practices that increase the resilience of agricultural productive systems designed and implemented in Colombia.	0 0	TBD 60 families on WP 225 families on AMP	TBD 180 families on WP 685 families on AMP	TBD 240 families on WP 800 families on AMP	TBD 240 families on WP 800 families on AMP	Adaptation activities (number to be determined) to improve the resilience of agricultural productive systems have been designed, implemented and validated (including adequate M&E systems). These	Progress reported in biannual progress reports.	Measures implemented; consultant/works contracts delivered; goods delivered, installed, and operational, etc. Register of groups trained	Colombia's National Coordinator with inputs from Corpoboyaca and IDEAM

						may include: activities to promote transparency and accountability at the community level; activities to protect watersheds (e.g., monitoring climate and hydrology, reforestation and restoration of river banks, silvopastoral practices, recovering water recharge areas, etc.); adaptive activities in the management of agriculture production (e.g., to improve productivity, water efficiency). Families in the Tota area trained on validated practices (720 on watershed protection-WP,			

						and 2,510 on agricultural practices-AMP).			
3.3 Adaptation activities that contribute to increasing the resilience of the selected hydroelectric projects in Ecuador and improve their capacity to manage risks to climate extremes	0 0	Identified Identified	2 1	2 1	1 0	5 pilot activities to increase the resilience and response capacity of selected hydroelectric systems to climate extremes been designed and implemented (including adequate M&E systems). These may include: flow and sediment control, flood management activities, monitoring of levels and flow rates, and hydro-climatic monitoring among others. An early warning systems (EWS) of extreme weather events in supply basins of each selected hydroelectric	Progress reported in biannual progress reports.	Measures implemented; consultant/works contracts delivered; goods delivered, installed, and operational, etc. Implemented EWS systems.	Ecuador's National Coordinator with inputs from consultants, contractors, members of the National Committee.

						project,			
3.4 Adaptation activities that contribute to reducing the vulnerability of watersheds and fragile high-mountain ecosystems, and to increasing the resilience of water provision for the selected hydroelectric projects in Ecuador.	0	Identified	2	4	2	8 adaptation measures to contribute to the conservation, protection, restoration and recovery of watersheds and fragile high-mountain ecosystems These may include: improved agricultural practices, improved cattle ranching practices, fire prevention plans and protocols for paramos, etc. Activities will at least include two measures in protected areas (Cayambe Coca National Park) 2 Technical workshops to develop sector best practices; 2 ecosystems restored; 30% of cattle moved from páramos; best practices	Progress reported in biannual progress reports.	Measures implemented; community agreements; consultant/works contracts delivered; goods delivered, installed, and operational, etc.	Ecuador's National Coordinator with inputs from consultants, contractors, members of the National Committee.

						applied in at least 2 productive sectors in the project intervention áreas; 2 Fire Prevention Plans; 2 Fire Brigades formed, trained and equipped.			
3.5 Pilot small-scale irrigation Public Investment Project (PIP) designed and implemented in Peru	Existing PIPs (to be selected) without CC/CV considerations	2-3 selected PIPs-	1 PIP designed	1 PIP designed 1 PIP implemented	1 PIP designed 2 PIPs implemented	2-3 pilot small-scale irrigation Public Investment Project-PIP that include CC/CV considerations have been designed in a participatory fashion (including adequate M&E systems), and implemented in selected areas.	Progress reported in biannual progress reports.	Report on selected PIPs in selected areas. Feasibility declaration of PIPs by OPI MINAGRI. Institutions involved and direct beneficiaries have signed off Works.	Peru's National Coordinator with inputs from consultants, OPI, implementation unit of PIPs.

Annex 2: Detailed Project Description

COUNTRIES: Plurinational Republic of Bolivia, Republic of Colombia, Republic of Ecuador, and Republic of Peru

Project Name: ANDES ADAPTATION TO THE IMPACT OF CLIMATE CHANGE IN WATER RESOURCES PROJECT (AICCA)

1. Based on the lessons from PRAA and other such projects, AICCA does not propose the regional dimensions as specific components but maintains a focus on the regional aspect and the learning and leveraging potentials in all its components and actions.

Project Components

The AICCA project has been structured in 3 components.

Component 1: Generation and exchange of knowledge, technology transfer and institutional strengthening.

Component 2: Mainstreaming of climate variability and climate change considerations into policies, strategies and programs.

Component 3: Design and implementation of adaption measures in priority sectors.

2. During the Preparatory Phase of the project it has been a key approach to build strong relations between these three project components, aimed at increasing synergies, stronger feedback and validation of expected outputs and results, as well as to boost the interaction between the stakeholders involved. This means that although activities and results will mostly have a normal/classic sequence in each component, they will provide/receive (accordingly) strong feedback and updating from the results achieved by the activities on the ground and through strong participation and discussion with and between local, subnational and national stakeholders. This synergy seeks to ensure that information, instruments and methodologies will have a strong technical basis in terms of relevance, objectivity and argumentation, proved by pilot activities in the field, i.e. CV/CC adaptation measures to be developed, and that learning and findings from these provide feedback and validation to those management, institutional, regulatory and investment instruments. This will be the core strategy towards mainstreaming CV/CC adaptation for water security and resilience in the selected sectors in each of the 4 participating countries, and at the regional level, between these countries. The following section presents a summary for the Project rationale and activities at the country level. More complete information can be found in each of the Country Technical Reports (*Informe Técnico de País*) prepared for the four participating countries.

3. Bolivia: The project provides a great opportunity to start addressing climate variability and climate change risks and considerations in a critical sector such as Drinking Water and Basic Sanitation (APSB) in the city of Cochabamba, specifically working on the organizational, institutional, technological and planning gaps and needs to better adapt to CV/CC and in parallel contribute to securing water resources and a better management of storm water drainage, both very sensitive to settlements and soil (surface) stability for urban development in relation with climate variables. This will consist of the following approaches:

(a) Component 1 will generate or strengthen knowledge and skills that facilitate the incorporation of water security considerations into the context of vulnerability to VC/CC into the policies, strategies, programs, and instruments of the drinking water and basic sanitation sector, with an emphasis on pluvial drainage. The component will have two main subcomponents; the first subcomponent will address national capacities to generate information through hydrological modelling in order to conceptualize precipitation, drainage, and flows of rivers and streams under VC/CC scenarios. The results of this modelling exercise will be applied towards the understanding of VC/CC vulnerability and impacts in priority microbasins draining to urban and peri-urban areas of the Cochabamba municipality. A second subcomponent will introduce technological innovations which incorporate VC/CC considerations into resilient practices which will reduce VC/CC vulnerability in the sector.

(b) Component 2 will include VC/CC adaptation considerations into the policies, strategies, programs and legal, methodological, and public investment instruments in the APSB subsector. This will include the development of a sectorial strategic reference document for the integration of vulnerability, impacts, adaptation, mitigation and resilience to CV/CC into the National Plan for the APSB sector; the development of a guide to presenting Public Investment Projects for the integrated management of storm drainage under CV/CC considerations, and the development of training material on peri-urban and urban storm drainage under CV/CC considerations.

(c) The pilot project of AICCA-Bolivia under Component 3 is located in the city of Cochabamba. They are directed at controlling the flow of rainwater drainage, increased attention span through areas of flood control and groundwater recharge, protection of water sources, soil stabilization, reducing the impact of CO2 emissions, strengthening resilience, education and awareness on integrated solid waste management, and reduced risk to the population located in the municipality of Cochabamba.

4. **Colombia:** The Project will focus in Colombia on the interdependency between the agricultural sector and the hydrological cycle in the Andean Highlands taking into account the hazards and perturbations from climate change and variability (CV/CC) and will achieve its medium term impact in contributing to water resources security for a sustainable and resilient development in these regions.

(a) Under Component 1, the project generates and transfers knowledge on water resources requirements, availability and balances and its relationship with the ecological structure and vulnerabilities under CV/CC. Additionally, the water footprint will be analyzed under conventional and alternative management in agricultural production systems for their respective sustainability and resilience. The inclusion of an analysis of vulnerability and the promotion of adaptation measures in transfer programs is a rather recent activity in the agricultural sector in Colombia. Thus, the AICCA will work with the agricultural sector institutions in the design,

validation and promotion of instruments for technology transfer for adaptation. However, as agricultural management is closely related to changes in water resources, the project will not limit its interventions to the agricultural sector; on the contrary, it will promote an integral approach to vulnerability analysis and territorial planning for water security and ecosystem resilience which will orientate priorities and measures for adaptation in the agricultural sector. The generated knowledge provides essential inputs for planning territorial and agricultural development under Component 2 and the implementation of adaptation measures and practices under Component 3.

(b) Under Component 2, the project fosters the inclusion of CV/CC into existing norms and instruments, which regulate water resources management and its ecosystem functions for planning land-use and watershed management, municipal development and agricultural development. Specifically, the project will strengthen the integrity of water resources governance, promoting principles and practices of access to information, transparency, participation and accountability in order to reduce the potential for social conflicts in the area. The Watershed Council is the institution for civil participation in the preparation of the POMCA and the rural producer organizations participate in the formulation and implementation of PGATs. The project will facilitate processes and initiatives, which provides opportunities to local communities to increase their capacity to respond to the impacts of climate change and variability. It will stimulate the generation, interpretation and use of information and knowledge and will promote spaces and learning circles where community members can articulate their Adaptive Life Plans and strengthen their capacity for organization, conflict management, migration and territorial belonging.

(c) Under Component 3, the project contributes to the implementation of pilot activities in the Department of Boyacá, specifically in the zone of influence of the Lake Tota Basin area and follows the recommendations provided by the National Council for Economic and Social Policies (CONPES 3801, 2014). Human intervention in the páramos, hillsides and the water reservoir (Lake Tota) threaten the water recharge capacity, while changes in precipitation and temperature, caused by climate change and variability, potentiate the effects. The project promotes the transfer of innovation in adaptive practices for V/CC in the area of intervention for environmental management (for paramo areas: early warning system, wildfire control measures, nursery with adapted species, protection of transplanted seedlings, recovery of strategically important areas, among others; for areas outside paramos: silvo-pastoral systems in water recharge areas, river bank protection, practices to increase water infiltration and run-off control, species and varieties tolerant to extreme climate events, fodder reserves, water reserve for cattle, among others) and for agricultural management (early warning, crop management in line with climate forecasts, varieties and crop rotations adapted to climate risks, water saving practices in complementary irrigation, water and soil conservation, among others). The adaptation measures will be assessed and defined in a participatory process with the communities, thus, details on the number and kind of practices cannot be provided at project design. The foreseen interventions in the area of influence of the project will enhance secure access for drinking water to about 250.000 people in nine municipalities and water resources security for the agricultural production systems of

more than 3200 families in about 3000 hectares of land with or without complementary irrigation.

(d) All project activities will be implemented through national, departmental and municipal institutions in line with their respective mandates. Instruments and processes will be updated, validated and institutionalized for adaptation to vulnerabilities and climate variability and climate change with a focus on water security and resilience. The project foresees in the third or fourth year of implementation the gradual multiplication and replication of experiences in other areas, for territorial planning as well as for the transfer of adaptation measures in the agricultural sector which contribute to water resources conservation. The Lake Tota Basin is representative of other Andean mountain areas, so this characteristic will facilitate regional replication.

5. **Ecuador:** The proposal for the AICCA Project in Ecuador defines interventions based on three thematic entries: hydropower generation, ecosystem management of watersheds and biodiversity. The scale of project intervention will be at the level of micro catchments supplying water to small and / or medium-sized hydroelectric plants. AICCA will also work in micro catchment management and high Andean ecosystems that provide water and other environmental functions (e.g. biodiversity) to the Hydroelectric Project at Victoria and Machangara Hydroelectric Complex. These are two distinct areas with different conditions of water availability (one with surplus most of the time and the other with deficits in several months).

(a) Under Component 1, there will be a preliminary analysis to identify key research questions for the studies and hydrologic modelling. An exchange with other AICCA partner countries at this stage would be most helpful to help define both the critical questions as also an efficient research and modelling protocol.

(b) Under Component 2, a key starting action will be the identification and prioritization of existing policy guidelines in the hydroelectric sector, where climate change considerations need to be incorporated.

(c) Under Component 3 there will be an analysis of trends and climate threats; general analysis of vulnerability and adaptation of selected hydroelectric projects and their supply watersheds; evaluation of CV/CC impacts on the operation and infrastructure and on watersheds and ecosystems, to be linked with the adjustment requirements of legal and technical requirements to promote and regulate adaptive measures and investments shall be undertaken. A range of existing tools such as CRISTAL, the analysis of *Adaptation Corridors* may be used for this. Component 3 will also carefully consider issues/aspects regarding sustainability of the measures and the impacts that the project might have in the selected sectors. Synergies between different instruments such as operational/management plans in the operating companies and/or institutions (related to the intervention areas) will be pursued.

6. **Peru:** The mountainous region of Peru is prioritized based on the fact that small scale irrigation systems and projects are located mainly in this region (in contrast to large irrigation located in the coast). In addition, poverty and socio-economic and environmental vulnerability

turn out to be much more pronounced compared to the coast and jungle. Within this general region, more specific geographic areas of intervention will be determined once the project has started, based on specific prioritization criteria. The project's general objective and the first three specific objectives will be addressed through a set of synergistic activities that have been structured according with the three components of the Project.

(a) Component 1 will develop a study on vulnerabilities of small scale irrigation systems and the economic implications of climate change impacts on such public investments. One of the first project activities will be the selection of the specific intervention areas (at regional or local level) and an analysis of the sample of Public Investment Projects (PIPs) in small scale irrigation already registered in the National System of Public Investments (SNIP) bank of projects. A stratified sample from this shall be included in the CV/CC vulnerability and economic impact assessment. The small scale irrigation PIPs (2 to 3 projects) shall consider two scenarios: (i) a PIP which allows incorporation of adaptation measures as additional investment and (ii) a PIP that is completely oriented towards measures to reduce vulnerability to VC/CC and to manage and adapt to climate risks.
(b) Component 2 will support the mainstreaming of ACC in sectorial regulatory instruments and methodology guidelines for public investment. The knowledge generated through Component 1, plus results of pilot projects and reflection/discussion between stakeholders will be used to provide feedback and will be capitalised through information systematization and capacity building.
(c) Component 3 entails the implementation of PIPs. The initial institutional arrangements should allow mechanisms for inter institutional collaboration with government ministries and research institutions, Universities, among others, in case hydro-meteorological information or other specific technical support/advice is needed. Special attention will be given to strategic alliances with universities or research organisations in the selected region.

Annex 3: Summarized Project Implementation Schedule (Country Level Projects)

BOLIVIA				
Component/Output-Objective/Activities	**Implementation**			
	PY1	**PY2**	**PY3**	**PY4**
Component 1: Generation and exchange of knowledge, technology transfer, and institutional strengthening				
Objective/Output 1.1: Information and knowledge generated, capacities and competencies strengthened in water security, climate change adaptation and resilience in the area of drinking water and basic sanitation (with emphasis on sources of water supply and storm water drainage) at the sub-national and sector levels.				
Activities:				
1.1.1. Hydrological modeling (rainfall-runoff) under scenarios of VC/CC – Municipality of Cochabamba				
1.1.2. Vulnerability Study and impacts of CV/CC in priority watersheds of sources of water supply and storm water drainage in the Municipality of Cochabamba				
1.1.3. Technology and knowledge transfer through curriculum design and validation in training programs (agreement UMSS - UMSA)				
1.1.4. Interagency coordination meetings for the exchange of knowledge and experiences that feed back into the project				
Component 2: Incorporating climate change considerations into policies, legislation, planning, strategies, and/or investment programs, and management in the water and sanitation sector with emphasis on sources of water supply and storm water drainage.				
Objective/Output 2.1: Development of planning tools and governance criteria of adaptation to climate variability and change for water security in the sector of water and sanitation with emphasis on sources of water supply and storm drains.				
Activities:				
2.1.1. Preparation of a technical document of reference for sectoral integration of vulnerability, impacts, adaptation measures, mitigation and resilience to the CV/CC in the Basic Sanitation Sectoral Development Plan (2016-2020).				
2.1.2. Elaboration of proposal submission guide on public investment projects in integrated management of storm water drainage with considerations for CV/CC.				
2.1.3 Develop awareness material in integrated watershed management , APSB and related matters, including considerations of CV/CC.				
2.1.4. Formulation of proposed Comprehensive Management Plan for Urban Drainage for the Municipality of Cochabamba, incorporating the dimension of CV/CC.				
2.1.5. Proposals for updating local standards and the generation of proposals for operational instruments for integrated planning and management of water sources and the protection of storm drainage in Cochabamba				
Component 3: Incorporating climate change considerations into policies, legislation, planning, strategies, and/or investment programs, and management in the water and sanitation sector with emphasis on sources of water supply and storm water drainage.				
Objective/Output 3.1: Measures to adapt to the CV and CC have been implemented in the area of water security in the Drinking Water and Basic Sanitation sector, with emphasis on sources of water supply and storm drainage.				
Activities:				
3.1.1. Participatory design and implementation of pilot investment projects for integrated watershed management (water supply sources and storm drainage) in Cochabamba.				
3.1.2. Design and implementation of a plan for monitoring, evaluation and learning AAICCA - Bolivia project				
3.1.3. Systematization , editing and printing of project experience and learning AAICCA- Bolivia				

COLOMBIA				
Component/Output-Objective/Activities	**Implementation**			
	PY1	**PY2**	**PY3**	**PY4**
Component 1: Generation and exchange of knowledge, technology transfer, and institutional strengthening				
Objective/Output 1.1: Knowledge and skills generated, strengthened and transferred with respect to improving water security and adaptive land management in a context of vulnerability to climate variability and change				
Activities:				
1.1.1 Lake and stream water flow quantified				
1.1.2 Include projections of CV/CC in modeling of the hydrological cycle and water balance				
1.1.3 Training and transfer on the hydrological cycle with projections for CV/CC to entities and persons that are multipliers of information.				
1.1.4 Ecological structure is characterized and demarcated with the participation of local people				
1.1.5 Analyze the territorial and sector vulnerability of agriculture, with the participation of the local community				
1.1.6 Training and transfer on issues of ecological structure, ecosystem services, and vulnerability to entities and persons that are multipliers of information				
1.1.7 Characterize or confirm in a participatory manner, water efficiency in major production systems under conventional practices and under adaptive alternatives.				
1.1.8 Update recommendations for the management of production systems in view of V/CC to be included in General Technical Assistance Plans				
1.1.9 Training and transfer for agro-climatic management of production systems to organizations providing technical assistance				
Component 2: Incorporating climate change considerations into policies, strategies and programs				
Objective/Output 2.1: Criteria for climate variability and change for water security are incorporated into programs and instruments of land management and agricultural technical assistance.				
Activities:				
2.1.1 Design a pilot program for the recognition of eco- systemic services with users outside the basin to finance measures in areas of water recharge.				
2.1.2 Include CC criteria in the production or update of Land use and Watershed Management Plans (POMCA)				
2.1.3 Include CV/CC in the formulation of Municipal Land Use Management Plans (POT/EOT)				
2.1.4 Include CV/CC in the formulation of Páramos Management Plans				
2.1.5 Include CV/CC adaptation criteria in the guidelines for the formulation of General Technical assistance Plans (PGAT)				
2.1.6 Include CV/CC adaptation criteria in the guidelines for the formulation of Programs for the Efficient Use and Conservation of Water (PUEAA) in irrigation districts				
Component 3: Design and implementation of adaptation measures in priority sectors				
Objective/Output 3.1: Adaptation measures to climate change have been validated and implemented in coordination with public investment projects for water security in the environmental and agricultural sectors, with emphasis on the area of influence of the Lake Tota Basin.				
Activities:				
3.1.1 Facilitate and advise local actors in coordination processes and conflict transformation				
3.1.2 Promote access to information, transparency and stakeholder participation				
3.1.3 Include CV/CC in formal and non-formal education				
3.1.4 Design and establish a local network for monitoring climate and water, and promote transparency and early warning.				
3.1.5 Execute adaptive practices in reforestation, restoration and regulation on banks of streams and rivers and water recharge areas				

(Investment in POMCA and PMP).				
3.1.6 Transfer salvo-pastoral and landscape management practices and other initiatives prioritized by the communities to recover or increase the infiltration and water retention capacity, and reduce the vulnerability of communities in water recharge areas (Investment in POMCA and PMP).				
3.1.7 Execute a program to recognize environmental services with users outside the basin, and incentives for conservation and adaptation measures in areas of water recharge				
3.1.8 Transfer adaptive management practices in agricultural systems for productivity, efficiency and stability in light of CV/CC (PGAT and PUEAA investment).				
3.1.9 Strengthen the recognition of water efficiency and adaptation to CV/CC across the agriculture value chain.				

ECUADOR				
Component/Output-Objective/Activities	**Implementation**			
	PY1	**PY2**	**PY3**	**PY4**
Component 1: Generation and exchange of knowledge, technology transfer, and institutional strengthening				
Objective/Output 1.1: Knowledge and skills generated, strengthened and transferred with respect to the impacts of CV/CC on hydroelectric systems, recharge areas, and fragile ecosystems				
Activities:				
1.1.1 Execute general climate vulnerability studies for hydroelectric systems in areas of the project intervention, with emphasis on analysis of exposure, sensitivity and resilience of fragile mountain ecosystems, water recharge basins, and other relevant studies.				
1.1.2 Develop impact models on CV & CC to identify risks associated with climate on the functionality and infrastructure of selected hydroelectric systems, the water resources that supply them, and environmental conditions of watersheds and fragile ecosystems linked to them.				
1.1.3 Develop strategies for knowledge sharing, dissemination and transfer of technology in adaptive management of watersheds and fragile high mountain ecosystems that provide water to hydroelectric systems				
1.1.4 Implements strategies to strengthen the capabilities of technical people, decision makers and researchers, that will allow them to use and interpret studies on the modeling of the impacts of VC & CC.				
Component 2: Incorporating climate change considerations into policies, strategies and programs				
Objective/Output 2.1: Criteria for climate variability and change for water security are incorporated into institutional management instruments and into technical standards and design of hydroelectric plants, for the management of watersheds and fragile ecosystems				
Activities:				
2.1.1 Review or develop, under considerations CV & CC, processes and administrative and technical procedures in order to strengthen the governance of regulatory bodies which oversee the hydroelectric sector, and other institutions with competence in this subsector				
2.1.2 Prepare or update plans, strategies or programs inherent to the hydro subsector and /or the management and conservation of watersheds and fragile ecosystems.				
2.1.3 Develop methodological guidelines (or similar tools) for insertion of the adaptation to climate change variable in the design of public investment projects in the hydroelectric subsector				

2.1.4 Upgrade or prepare guidelines / regulations / technical standards or strategies that allow insertion of the dimension of adaptation in the design phase of public hydroelectric projects, including water security aspects and the conservation or management of watersheds and fragile ecosystems				
Component 3: Design and implementation of adaptation measures				
Objective/Output 3.1: Adaptation measures that increase the resilience of hydroelectric plants and reduce the vulnerability of watersheds and fragile mountain ecosystems, and contribute to water security even under adverse weather conditions designed and implemented.				
Activities:				
3.1.1 Design and implement adaptation measures to control the flow of sediments from streams and rivers, protecting flow, monitor the dynamics of the levels and flows of watercourses, and conduct climate monitoring.				
3.1.2 Design and implement early warning systems for extreme weather events in the supply basins of hydroelectric projects, including the design of response protocols.				
3.1.3 Design and implement adaptation measures for the conservation of watersheds and fragile ecosystems in good condition; restoration and recovery of degraded ecosystems; mobility of livestock outside wilderness areas ; the application of good agricultural, livestock and agro-ecological practices; develop plans to prevent burning of grasslands and páramos; and recovery of sites affected by erosion.				
3.1.4 Design and implement adaptation measures to increase the adaptive capacity of watersheds located within protected areas in accordance with the existing Management Plan for those protected areas.				

PERU				
Component/Output-Objective/Activities	**Implementation**			
	PY1	**PY2**	**PY3**	**PY4**
Component 1: Generation and exchange of knowledge, technology transfer, and institutional strengthening				
Objective/Output 1.1: Generate and / or enhance knowledge, skills and inputs that facilitate the incorporation of considerations of water security in a context of vulnerability to the VC / CC in policies, strategies, programs and instruments related to minor irrigation subsector.				
Activities:				
1.1.1 Conduct a study on characterization of vulnerabilities and impacts associated with climate variability and climate change in PIPs implemented in the lower irrigation subsector				
1.1.2 Conduct a study on costs of damages as well as any benefits associated with the impact of climate variability and climate change in PIPs				
1.1.3 Design channels of information and dissemination of the results obtained in studies to relevant actors in the minor irrigation sub-sector.				
1.1.4 Training to SNIP operators , professionals involved and other stakeholders regarding the impacts of climate variability and climate change, as well as risk reduction in minor irrigation systems				
1.1.5 Hold events to exchange knowledge, successful experiences of management and technology transfer for adaptation to the CV and CC in public investment projects and measures to reduce risks in minor irrigation systems at the level of ministerial officials from the sectors involved.				
Component 2: Incorporating climate change considerations into policies, strategies and programs				
Objective/Output 2.1: Include consideration of adaptation to the impacts of VC / CC on water resources policies, strategies, programs and policy, methodological instruments and public investment in the minor irrigation subsector.				
Activities:				
2.1.1 Establishment and operation of a working group with competent institutions (public and private) to agree on policy proposals, technical standards and methodological tools on risk management in the context of Climate Change in projects in				

minor irrigation systems.				
2.1.2 Incorporate considerations of climate variability, climate change and risk management policies, technical standards and methodological tools related to public investment projects in minor irrigation.				
2.1.3 Production and dissemination of comprehensive information and processes performed by the project and other stakeholders in relation to vulnerabilities and impacts of the CV/CC on water security and resilience in projects/minor irrigation systems.				
Component 3: Design and implementation of adaptation measures in priority sectors.				
Objective/Output 3.1: Implement pilot adaptation measures investments in the subsector of minor irrigation, capable of generating knowledge to validate and provide feedback on the formulation / updating of policies, strategies, programs and sectoral instruments.				
Activities:				
3.1.1 Identification and selection of public investment projects in minor irrigation (finished or in operation) which meet the conditions to complement adaptation measures to climate change, to increase water security of the system without affecting others in the area (e.g. microbasin).				
3.1.2 Pilot PIP participatory design focused on the incorporation of appropriate measures for adaptation to climate change in relation to minor irrigation systems.				
3.1.3 Implement the pilot PIP focused on the incorporation of appropriate measures for adaptation to climate change in relation to minor irrigation systems.				
3.1.4 Monitoring, systematization and learning about the degree of effectiveness of adaptation measures implemented in the pilot PIP				
3.1.5 Monitoring the implementation of the considerations for adaptation to climate variability and climate change in the pre - investment studies in minor irrigation, performed by SNIP operators and others involved, in accordance with the technical updated standards and methodological tools.				

Annex 4: Incremental Cost Matrix

BASELINE	ALTERNATIVE	INCREMENT
(A)	(B)	(B) – (A)
COMPONENT 1: Generation and exchange of knowledge, technology transfer and institutional strengthening		
Component Result: Knowledge and capacity has been generated, strengthened, and transferred in relation to water security in the context of vulnerability to climate variability and change on water resources in selected sectors		
Output 1.1 Nationally in Bolivia, no detailed information is available, but it is recognized that the control of rain water discharges and flooding in urban areas needs to be addressed in order to reduce overflow of tributary rivers, loss of vial platforms, siphoning, collapse of walls, damage to public and private property, damage to storm drainage systems, sewer systems, flood ponds, wastewater treatment plants, overflow of sewage collectors, and the loss of life. In the Andean Highlands of Colombia, predicted negative impacts of CV/CC will result in water regulation challenges (production and storage) and reduced availability for the agricultural sector, with devastating effects to small farmers producing 71% of the coffee produced in the country. Current water management approaches lack CV/CC considerations and will not be effective to address predicted impacts of CC/CV.	Relevant studies to help understand the vulnerability of water resources to the impacts of CV/CC will be generated to better inform a comprehensive sector policy on drinking water and basic sanitation, which will guide public investments and policies, plans and standards for the development, provision and improvement of storm drainage services to better adapt to the impacts of CV/CC. GEF resources will be used to ensure that hydrological cycle and water balance models for Lake Tota basin include CV/CC projections and are better able to provide required technical guidance in efforts to adapt to CV/CC.	Knowledge and capacity has been generated, strengthened, and transferred in the context of vulnerability to climate variability and change on water resources in relation to drinking water and basic sanitation, storm drainage, water management modelling, water use efficiencies for small scale highland agriculture, hydroelectric operations, and the impacts and costs of CV/CC on small scale irrigation. A climate-smart constituent is created in project countries which are better able to understand and process CV/CC considerations, creating a cadre of climate-sensitive stakeholders and professionals at a regional level.
Output 1.2 Key economic sectors in all 4 project countries have been identified as vulnerable to the impacts of CV/CC, but no quantification of said vulnerability is available to better inform adaptation and mitigation interventions, thus rendering current efforts inefficient and ineffective.	The GEF alternative will support studies to help understand the vulnerability of relevant ecosystems in selected water basins to the impacts of CV/CC, including assessments to compare the water use efficiency in the principal agricultural production system (onion and potatoes) under traditional and adaptive practices in Colombia; guidelines for determining maximum floods and delimitation of safety zones in rivers incorporating CV/CC factors in Bolivia; studies on climate	

	vulnerability for each of the two selected hydroelectric projects, and modelling of the CC/CV impacts in Ecuador; and vulnerability and CC/CV impact characterization study on small-scale irrigation investment projects and estimates of the costs of CC/CV related damages on existing small-scale irrigation projects in Peru.	
Output 1.3 There is a general lack of broad-scale understanding of the impacts of CV/CC and the level of vulnerability that exists in relation to key economic sectors in all project countries, creating a substantial risk for gaining local and policy support in favor of needed adaptation interventions.	Project funds will support activities to promote transfer of generated knowledge and capacity to all relevant stakeholders to create a better informed climate-smart constituent, including at least 20% women, and will include brochures, informative events, incorporation of CV/CC consideration in post-graduate curriculum, training in CV/CC to stakeholders in key sectors, and dissemination via social media.	
COMPONENT 2: Mainstreaming of climate change considerations into policies, strategies, programs, and other relevant management instruments		
Component Result: CC/CV considerations have been included in a series of relevant management instruments for the selected sector in each country		
Output 2.1 In Bolivia a baseline exists which includes historical diagnosis of ENSO events on the Water and sanitation sector, technical specifications for storm drainage, national diagnosis of solid waste management, and technical regulation for urban storm drainage in Cochabamba. Unfortunately, these advances do not include considerations for CV/CC, and therefore policies and management instruments which were developed based on these will not be effective in the context of CV/CC.	GEF resources will support the development and or update of national & municipal level instruments that take into account CC/CV considerations for Storm Drainage Management in Bolivia, providing the required technical guidance and basis for policies, guidelines, and management instruments to be updated accordingly.	Management instruments include CC/CV considerations for a series of relevant sectors in each country, creating an enabling environment and framework for effectiveness in efforts to address adaptation to climate variability and change at a regional level.
Output 2.2 There are numerous planning and management tools that are applicable to the project intervention areas in Colombia (POMCA, PGAT, POT, PUEAA, PMAP). Unfortunately, these tools and instruments do not include considerations for CV/CC, and are	The project will fund the update of instruments for planning territorial, environmental, and agricultural development and investments to include CC/CV considerations, to be applied in project intervention areas in Colombia. Guidelines and updates will be produced for key tools and	

thus expected to have limited effectiveness in terms of adaptation to CV/CC.	instruments: POMCA, PGAT, POT, PUEAA, and PMAP.	
Output 2.3 Strategies, plans, and programs relevant for the hydroelectric sector or for basin and fragile ecosystems' management are available for application in the project areas in Ecuador, but they lack CV/CC considerations, and are thus ineffective in terms of addressing the impacts of climate change and climate vulnerability.	GEF resources will support the design and/or update of management instruments relevant for the hydroelectric sector and for the conservation of watersheds and fragile ecosystems to incorporate CC/CV considerations in Ecuador, with a view to ensure their effectiveness in addressing adaptation to CV/CC. The project will specifically fund Technical Workshops, Watershed Management Plan, Protected Areas Management Plan, Technical Standards and Guidelines to be considered in the design of hydroelectric projects, and enhanced sustainable management practices of landscapes in project intervention areas.	
Output 2.4 There is General Guidelines for identification, formulation and social evaluation of public investment projects, incorporating risk mgmt. in a context of CC in Peru, but not specifically applicable to the small scale irrigation sector, leaving this sector outside of the reach and effectiveness of the general guidelines.	The GEF alternative will support methodological instruments and relevant technical standards for the inclusion of CC/CV consideration in public investment projects on small-scale irrigation in Peru, and will specifically fund an Adapted CV/CC Guideline for small-scale irrigation projects, and sectoral technical regulation for small-scale irrigation that consider risk management in a context of CC/CV.	
COMPONENT 3: Design and implementation of adaptation measures in priority sectors		
Component Result: Pilot CV/CC adaptation measures and investments validated and implemented in the drinking water and basic sanitation sector, the environment and agriculture sector, the hydroelectric sector, the minor irrigation sector, and in watersheds and fragile ecosystems in one or more of the project countries.		
Output 3.1 While efforts in Bolivia address the design of flow canalization infrastructure in Cochabamba (PROASRED), a national diagnosis of solid waste management, and environmental education guide in integrated solid waste management, efforts to address key vulnerability issues are lacking, resulting in exposure to climate risks.	Adaptation investment projects will be funded from GEF resources to protect water recharge areas, and to increase the resilience of storm drainage in the selected micro basins in Cochabamba. Primary project interventions will include a pilot adaptation project designed and implemented to contribute to the control of flow of storm water drainage in each one of the two selected areas in Cochabamba, reforestation project as river	Pilot CV/CC adaptation measures and investments validated and implemented on a regional scale in the drinking water and basic sanitation sector, the environment and agriculture sector, the hydroelectric sector, the minor irrigation sector, and in watersheds and fragile ecosystems in one or more of the project countries.

	management technique for protection of water sources, soil stabilization, and reduction of the impact of CO2 emissions.	
Output 3.2 Farming and watershed management practices in the Colombian Highlands of the project intervention areas continue to be conducted as per conventional methods, leaving them exposed to the impacts of climate change.	GEF resources will fund the development and implementation of adaptive practices that increase the resilience of agricultural productive systems in Colombia, and will include activities to promote transparency and accountability at the community level; activities to protect watersheds (e.g., monitoring climate and hydrology, reforestation and restoration of river banks, salvo-pastoral practices, recovering water recharge areas, etc.); and adaptive activities in the management of agriculture production (e.g., to improve productivity and water efficiency).	
Output 3.3 Hydroelectric projects in Ecuador were designed without CV/CC considerations, therefore adaptation and resilience were not criteria used to inform their construction and operations, which render them vulnerable to the impacts of climate change.	The GEF alternative will address pilot adaptation activities that contribute to increasing the resilience of the selected hydroelectric projects in Ecuador and improve their capacity to manage risks to climate extremes. Adaptation activities will include flow and sediment control, flood management, monitoring of levels and flow rates, hydro-climatic monitoring, and an early warning system (EWS) of extreme weather events in supply basins of each selected hydroelectric project.	
Output 3.4 In an effort to secure the ecosystems services (water supply to hydroelectric plants) and maintain the globally significant biodiversity in the project intervention areas in Ecuador, interventions to increase the resilience of these areas are indispensable.	The GEF project will fund adaptation activities that contribute to reducing the vulnerability of watersheds and fragile high-mountain ecosystems, and to increasing the resilience of water provision for the selected hydroelectric projects in Ecuador. Activities to be funded will include improved agricultural practices, improved cattle ranching practices, fire prevention plans and protocols for páramos, etc., with at least two measures in protected areas (Cayambe Coca National Park).	

Output 3.5 The small size irrigation infrastructure in the high sierras of Peru is rustic and quite vulnerable to climate-induced events such as flooding and landslides. For these reasons, small size irrigation is key to the sustainability of agriculture in Peru in the context of CV/CC. However, current projects in irrigation do not consider CV/CC in their design or operations.	The GEF will fund pilot small-scale irrigation Public Investment Projects (PIP), in Peru, which include appropriate considerations for CV/CC. Between 2-3 pilot small-scale irrigation Public Investment Project-PIP that include CC/CV considerations will be designed in a participatory fashion (including adequate M&E systems), and implemented in project intervention areas.	
BASELINE COSTS (CAF investments + Governments + other) **TOTAL: $268,746,237**	**ALTERNATIVE COST** **TOTAL: $336,624,095**	GEF: $9,696,621 Co-Financing: US$58,181,237 **TOTAL: $67,877,858**

Annex 5: Implementation Arrangements

COUNTRIES: Pluri-national Republic of Bolivia, Republic of Colombia, Republic of Ecuador, and Republic of Peru

Project Name: ANDES ADAPTATION TO THE IMPACT OF CLIMATE CHANGE IN WATER RESOURCES PROJECT (AICCA)

Project Administration and Implementation Arrangements

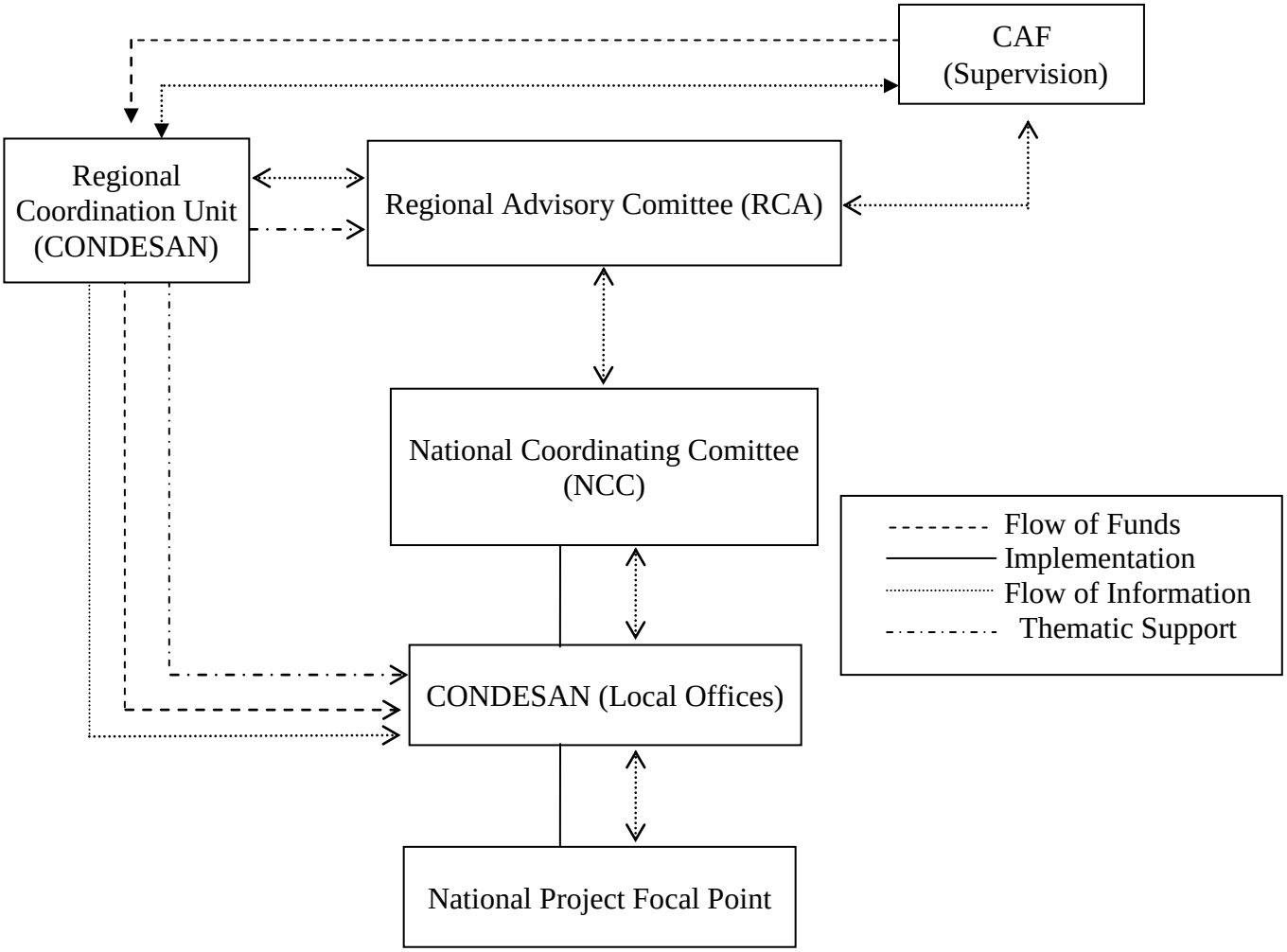
1. **Regional Level**: At the regional level, the Regional Advisory Committee (RAC) will be the steering body of the project, overseeing the achievement of the project's objective as per the Grant Agreement. It will provide overall strategic guidelines to the Regional Coordinator (within the Regional Coordinating Unit, see below) in order to guide his/her operational work at the regional level, thus strengthening the regional dimension of the project. The Regional Advisory Committee performs its function, based on constant information of all progress and results from the different national projects by the Regional Coordinator, and each country member to the RAC, through its own National Committee and National Project Focal.

2. The Regional Coordination Unit (RCU) is responsible to consolidate and foster the regional dimension of the project; it promotes a bidirectional process (top-down as well as bottom-up), to secure the supranational character of the results, based on validated experiences at national level. It is responsible for the fiduciary oversight and reporting of the project, including financial management and procurement consolidation according to the projects operational manual and procurement plan. It is also responsible of regional monitoring and evaluation (M&E), provides and coordinates technical advice, and coordinates and assists overall orientation concerning project conception, strategies, criteria and methodologies, as well as organizes and supports regional activities.

3. **National Level:** The country offices and/or partners of CONDESAN will secure the operational and administrative implementation at the national level. In each country, a National Expert will be hired as a consultant to assist the National Project Focal Point, other technical staff assigned to the project by government ministries, and local implementing agencies in the design and implementation of technical activities at the national level. In addition to these overall responsibilities on the technical aspects, the country offices of CONDESAN will assist with all finance and administrative services, and closely guided and supported by its counterpart in the Regional Coordination Unit, which secures quality, coherence, tools and training.

4. A National Committee in each country will act as the steering body for each country project; on the one hand its function is to approve key processes and decisions, such as the Annual Operation Plan, to secure the overall coherence of

the national activities with the regional project and to feed its results into the national policy dialogue; while providing technical guidance and support on the other. The exact composition of each National Committee depends on the country and its specific organisation of the sector(s). The composition of each National Committee as well as the description of roles of its members will be specified in the Project's Operational Manual. The project's implementation structure is illustrated below.



Financial Management

1. All activities related to financial management will follow the Financial Procedures Agreement (inclusive of all annexes) between the Development Bank of Latin America (CAF) and the International Bank for Reconstruction and Development (IBRD) as Trustee of the Global Environmental Facility Trust Fund (GEFTF), signed on September 28th, 2015. This agreement contains provisions for project operations to meet and exceed all internationally-accepted financial and fiduciary management standards, to be

evidenced in annual, final independent audits, and other periodic audits of the project accounts, as may be necessary. Staff of the project's executing agency that are involved in the day-to-day management of project resources will be trained in financial management policies consistent with the provisions of the above-mentioned agreement, during and after the Project's Inception.

2. Specifically, the project will implement an adequate integrated financial management system for the Project, including internal control systems that: (i) are in accordance with international accounting standards; (ii) reliably record and report all assets, liabilities and financial transactions of the Project; (iii) provide sufficient financial information for managing and monitoring Project activities; and (iv) integrate financial information, disbursements, purchasing, physical and financial progress of Project indicators, procurement, and control of contracts, to allow the generation of quarterly programmatic financial reports on the financial and physical advance of each component, as well as financial information by disbursement category. The detail of these procedures will be contained in the Project Operations Manual.

Disbursements

1. Disbursements will be made against Project Annual Work Plans (AWP) approved by the Regional Advisory Committee and CAF. Disbursement shall be in accordance with guidelines defined in CAF Disbursement Policies. Statement of Expenses (SOE) documentation will be maintained by the RCU for post-review and audit purposes. The authorized transfers to CONDESAN for project expenditures will be set at a level sufficient to cover approximately six months of estimated expenditures eligible for financing as per the approved Annual Work Plan. Replenishments of funds will be made on evidence of satisfactory utilization of the previous advance(s) as evidenced by the documentation submitted in support of disbursement applications. Deposits into the CONDESAN project account and its replenishments, up to an amount of 6 months of eligible project needs, will be made on the basis of Applications for Withdrawals accompanied by the supporting and other documentation specified in the CAF Disbursement Policies.

2. The Project funds will be transferred to CONDESAN by CAF, where funds will be maintained in a project-specific account in US Dollars, in a local bank in Lima, Peru. The RCU will be responsible for submitting appropriate disbursement applications to request the transfer of funds to CAF. Replenishments of funds under SOEs will be made on evidence of satisfactory utilization of the previous advance(s) as evidenced by the documentation submitted in support of disbursement applications.

Procurement

1. All activities related to procurement will follow the Procurement Policies of CAF as defined in the Procurement and Contracting of Goods, Services and Works Manual, published on March 17th, 2015 by the Directorate of Physical Infrastructure, Logistics, and Administration, Version MN/DIOFLA 038 of February 2016. These policies contain provisions for operations to meet and exceed all internationally-accepted financial and

fiduciary management standards, to be evidenced in annual and final independent audits of the project's procurement and disbursement processes. Staff of the project's implementing agency that are involved in the day-to-day management of project resources will be trained in CAF's procurement policies as described above and in procurement planning during and after the Project's Inception.

Environmental and Social (including safeguards)

1. The implementation of project activities will be in accordance the Environmental and Social Safeguards for CAF/GEF Projects Manual, Version 1 of May 2015. The Project is classified as Category B, according to the Guidelines and Procedures on Environmental and Social Safeguards for CAF/GEF Projects Manual (Section V.I.2 Annex I). Project interventions, in particular on-the ground interventions under component 3, are not expected to cause major adverse environmental impacts, and instead, in many cases will improve the environmental and social conditions prevailing in the areas of intervention, including greater resilience capabilities to deal with extreme events, impacts of climate variability and climate change. Minor site-specific environmental impacts in natural habitats and forests may be expected from some on-the-ground interventions, but mostly temporary.

2. Since the exact location and specificity of activities have not been determined yet (general areas of interventions have been identified in Bolivia, Colombia, and Ecuador; in the case of Peru this will be done under component 1), an Environmental and Social Management Framework (ESMF) is required for each project country, that conforms to all safeguards triggered by the project and applicable national regulations, and to the Guidelines and Procedures on Environmental and Social Safeguards for CAF/GEF Projects Manual. The aim of each country ESMF is to be a practical tool that adheres to the existing regulatory framework in each country, complemented with specific project activities when considered necessary, that describe clear processes to identify impacts, identify and implement mitigation actions, with clear timing and allocation of responsibilities.

3. The identification of exact locations and activities will be done through participatory processes during implementation. All triggered safeguards will be addressed through the ESMF. ESMF for all four countries were developed within the context of each Technical Country Report (*Informe Técnico de País*) during project preparation, and each country shall be required to fully embrace their specific ESMF during project implementation, through binding agreements to be signed between CAF and each individual country, as a condition of first disbursement, and thereafter will be disclosed on CAF's Website.

4. Consistent with the country-specific ESMF, procedures to identify and mitigate impacts adhere to the applicable national regulatory framework. That is, the responsibility to implement and monitor the implementation of mitigation activities is determined (and clearly spelled out in the ESMFs) by the regulatory framework. Nevertheless, considering that most activities will be small, and being aware, based on previous experience, the prevailing weakness in translating regulations into operational actions for small activities, especially the adequate monitoring of environmental and social management, the ESMF

specifies activities to be carried out by the project to fill in the gap (e.g., ensure that minimum mitigation measures are part of any contract for works and for the supervision of those works, capacity building activities through participatory processes, etc.).

5. In addition, each National Project Focal Point will be responsible to report progress on safeguards implementation as specified in each ESMF (e.g., completion of all environmental requirements by law such as permits or licenses, progress in the preparation and implementation of environmental management plans, etc.) to the RCU. The RCU will use this information as an input for the preparation of the overall progress reports to be submitted to CAF every 6 months. The National Project Focal Point will collect information on environmental management from the entities responsible of the execution of the different investment.

6. Natural Habitats and Forests: This CAF safeguard policy (Section VI) is triggered because the project, although not expected to produce negative effects, will undertake some activities in protected areas and/or their buffer zones in Bolivia and Ecuador (e.g.,Tunari National Park in Cochabamba in Bolivia, and Coyambe-Coca National Park in Ecuador), and in critical ecosystems in Colombia (e.g., Lake Tota basin). The project will promote conservation, restoration, and water flow monitoring and management activities in these areas as a means to protect upstream watershed, increase groundwater recharge, and control water flows. All activities will be aligned with the recommendations of any existing Park Management Plan (e.g., management Plan of Coyambe-Coca National Park in Ecuador). The inclusion of any required mitigation activity will be dealt as part of the ESMF.

7. No major forest interventions are expected. However, possible activities to promote upstream water protection might include some type of reforestation interventions and forest conservation activities. Mainstreaming CC/CV considerations in land-use zoning instruments as an example, can have a positive impact on forest, therefore the principles of this policy will be taken into account as part of the mainstreaming process. In reference to any forest management within the project, the need of mitigation activities and its inclusions in an environmental management plan or forests management plan will be dealt with as part of the ESMF.

8. Safety of Dams: This CAF safeguard policy (Section XI) is being triggered because of the irrigation activities that will take place in Peru. Although specific activities are still unknown, the project might be involved directly with the construction/rehabilitation of small dams/reservoirs (small given that small-irrigation include projects benefiting less than 500 has.) or indirectly, as supported projects might be dependent on existing reservoirs/dams for their water supply. For new small dams, specific environmental management plans will incorporate generic dam safety measures designed by qualified engineers; for existing dams, provisions for conducting dam safety reviews by independent qualified professionals will be included.

9. Pest Management: No utilization, promotion or acquisition of pesticides financed by the project is foreseen during the life of the project. However, in Colombia, Peru, and maybe in Ecuador, it is highly likely that pilot projects will include improvements in the agro-

productive systems, by which farmers/irrigators will introduce technological innovations and other changes in agricultural practices to increase productivity and profitability of their crops. These processes of change tend to lead to more intensive use of pesticides and other inputs, especially when the productive options are not oriented towards organic farming schemes. Therefore, and consistent with CAF's safeguard policy (Section IX), the project plans to work on the development of participatory Pest Management Plans based on the principles of Integrated Pest Management.

Monitoring and Evaluation

1. CONDESAN will be responsible for the overall monitoring and evaluation (M&E) of the Project through the Regional Coordinator, the Climate Change Specialist and CONDESAN's country offices and/or partners. M&E of Project implementation will be conducted through three main mechanisms (i) assessment of progress at the activity level (specific M&E systems will be developed for the different investment activities) which will generate data required for the purpose of the project (e.g., validate relevance of adaptation activity, and provide feedback to management instruments); (ii) the measurement of progressive achievement of expected project outputs and results (outcomes) as per indicators defined in the Results Frameworks of the participating countries that feed the Regional Results Framework of the overall project; status of progress will be reported every six months as part of the project progress reports; and (iii) evaluation of the project at certain moments of its implementation: (i) progress reviews during CAF implementation support missions; (ii) mid-term review of project implementation; (iii) final evaluation report to be carried out by the RCU with the input from the country offices and (iv) the Implementation Completion and Results Report (ICR). The ICR will be prepared within six months after closing of the Grant based on the final evaluation report prepared by the RCU.

2. At the country level, CONDESAN's country offices and/or partners shall be responsible for monitoring and evaluation, with the oversight of the Regional Coordinator. The executing entity(s) of each activity must provide the relevant data and analysis to the National Project Focal Point in each country, who shall coordinate with the Regional Coordinator on the interpretation and validity of monitoring results, and the identification of issues which may warrant consultation with the RAC, especially those relating to delivery of project outputs and outcomes at the regional level. To increase country ownership, the Project will seize opportunities, where available, to align Project required M&E with in-country/Government led M&E systems, already used and operational in partner institutions. While this will not only help to reduce costs, this approach will ensure post-project sustainability of the maintenance of the systems.

Role of Partners

1. Stakeholders participated in the identification of project priorities and in the definition of planned outputs and outcomes during interviews, consultations, and in the development of National Country Reports (*Informe Técnico de País*) in Bolivia, Colombia, Ecuador and Peru. All four countries had the opportunity to review and comment on proposed project activities and to provide specific inputs to the project formulation process. Stakeholder participation at the country level will include the provision of co-financing,

participation of technical staff in workshops, training, and tools development, the facilitation of local project events and processes, the provision of project oversight through participation on the RSC, as data sources and technical expertise relevant for the technical components of the project, and knowledge management through the institutionalization of project results and lessons learned to allow for up-scaling, replication and sustainability. At the regional level, stakeholder engagement will focus at the facilitation of regional project processes in project countries and in the identification of opportunities for optimization of resources, joint investments for project delivery, coordination and collaboration in the production of technical outputs.

ANNEX 6. MONITORING & EVALUATION WORK PLAN

M & E Activity	Responsibility	Estimated Budget (US$) (Excluding Staff Time)	Time Frame
Regional Inception Workshop to produce: Annual Work Plan; Discuss and finalize Required Monitoring & Evaluation Plan based on project's Tracking Tool and inclusive of risk monitoring and control measures; Discuss Project Operations Manual; Discuss Roles, Responsibilities, and Decision-making Structures; Discuss Gender Action Plans; and Discuss Financial Reporting and Project Progress Reporting	• CAF • RCU/Regional Coordinator • Project Team • Consultant to assist with planning, facilitation and reporting	Indicative Cost: 50,000	Within first two months of project start-up
Develop long-term M&E Plan	• Regional Coordinator and Climate Change Specialist will develop TORs to be vetted by CAF • Consultant hired to assist with development of long-term M&E Plan.	Indicative Cost: 70,630 (Consultant's cost plus costs associated with vetting of means of verification in the field through-out project implementation)	To be developed at start up, and applied at start-up, mid-term and end of project
Application of GEF Tracking Tools (Biodiversity and Climate Change)	• CAF • RCU • Project Team	Indicative Cost: 30,000	Annually
Regional Advisory Committee Meetings (with formally prepared minutes and resolutions)	• CAF • RCU	Indicative Cost: 80,000	One physical meeting per year and at least one virtual meeting per year
Quarterly Financial Reports & SOEs	• RCU • Project Team	Indicative Cost: 20,000	Within 30 days of each completed quarter
Project Progress Reports	• RCU • Project Team • National Project Focal Points • National Committees	Indicative Cost: 20,000	At least every 6 months and due within 30 days of each completed semester.
Publication of Project Progress Reports and other informative materials	• RCU • Project Team	Indicative Cost: 20,000	Every semester (bi-annually)
External Mid-Term Review	• CAF • RCU • Project Team	Indicative Cost: 00,000 (Professional Fees and logistical costs for 2	Within 90 days of completion of the project's mid-term

	• International Consultants (2) • National Consultants (4)	International Consultants and 4 National Consultants)	
External Final Evaluation	• CAF • RCU • Project Team • International Consultants (2) • National Consultants (4)	Indicative Cost: 00,000 (Professional Fees and logistical costs for 2 International Consultants and 4 National Consultants)	At the end of project implementation
Terminal Report	• RCU • Project Team • Consultant	Indicative Cost: 30,000	At least one month before the end of the project
Audits	• RCU develops TORs to be vetted by CAF • Audit Firm to be hired by RCU, after no objection from CAF	Indicative Cost: 40,000	At least annually CAF reserves the right to request a partial or complete audit at any time
Knowledge Management & Lessons Learned	• RCU • CAF • Project Team • Consultant	Indicative Cost: 79,397 (Productions of Videos, Systematization of lessons, experiences and best practices; regional end of project event)	Continuously through-out project + End of Project Knowledge Management Event
Monitoring Visits to Project Sites in 4 countries	• RCU • CAF • Project Team	Indicative Cost: 30,000 (cost of CAF travel to be charged to GEF IA Fees)	At least yearly
TOTAL INDICATIVE COST, EXCLUDING STAFF TIME AND CAF STAFF TRAVEL		**US$470,027**	

ANNEX 7. MAJOR COUNTRY BY COUNTRY RISKS AND MITIGATION MEASURES

Risk Factor	Classification of the Risk	Impact	Preventive or Mitigation Measure
BOLIVIA:			
Natural Disasters: Floods	High	Affect and or destroy the pilot model	Avoid the implementation of structural works during the rainy season.
Illegal human settlements on slopes above 2750m in periurban areas on the fringes of the safe zone for landslides.	High	Exposure to landslides and solid waste during torrential rains, with contamination of the air, soil and water. Permeabilization of.	Compliance with the conditions of eligibility of the PROASRED program, and let the GAMC demonstrate proof of legal ownership of proposed intervention areas, which must have clear accessibility in anticipation of the Project execution.
Lack of information on the legal and regulatory framework for the integrated management of landslides and storm drains.	High	Social conflicts and delays in implementation processes due to lack of land. Deficiencies in communication	Compliance with the conditions of eligibility of the PROASRED program, and let the GAMC demonstrate proof of legal ownership of proposed intervention areas, which must have clear accessibility in anticipation of the Project execution. Transparency mechanisms are promoted with access to information on regulations related to landslides and storm drains, as well as communication and justification for regulatory measures proposed.
Complex, slow and lengthy administrative and financial processes	High	Delays in project implementation	An independent entity assumes responsibility for an agile administrative and financial management, and basically runs through state entities, in addition to the continuous monitoring of MMAyA - VAPSB. CONDESAN/CAF develops capacity building and resource management skills (especially fiduciary) under CAF's rules. Close monitoring by specialists (financial management and procurement) from CONDESAN and CAF.
Conceptual and Technological Complexity	High	Rebut the pure research approach.	Innovative analysis of CC in the integrated management of storm drainage.

COLOMBIA:			
National and Sector Policies	Medium	Bill for the defining the boundaries of the páramos as strategic ecosystems may cause tensions with the inhabitants in these areas.	The preparation of this Bill is in process, but its approval may be difficult; the project includes participatory processes for the definition of transitional changes in use of the páramos.
Land Use Planning and Delimitation of Protected Areas.	Medium	The delimitation of the protected buffers of water recharge areas limit the use that can be given to the territory for some families.	Capitalize on experiences in other areas and projects (INAP, Sustainable Livestock, Chaina PSA) to explore participatory processes that work with users and the community.
Recognition of Environmental Services	Medium	Recognition of environmental services in the areas of water recharge by water users outside the basin involves a risk of rejection by users to pay for these services.	Consider a gradual process of recognition of environmental services before considering payment for these services. A participatory process with the population is expected to strengthen the integrity of the governance of water resources.
ECUADOR:			
No involvement from counterpart agencies.	High	Lack of ownership and difficulties in reaching the desired scale of impact.	Design an institutional architecture with the support and buy-in from counterpart agencies.
No motivation on the part of local communities to participate in the implementation of the project	High	Lack of ownership with direct threat to success of implementation and to sustainability of Project outcomes.	Maximize opportunities for local participation in all project planning and implementation activities
Contracting procedures delay the implementation and development of the project	High	Undisbursed funds and delinquency in producing planned outputs in a timely fashion	Training to Project staff and other relevant persons in the procurement procedures to be used by the project.
Proposed adaptation measures lack sustainability	High	Short-lived outputs and shortfalls in anticipated outcomes	Design permanent local support and financial sustainability mechanisms for the adaptation and management of natural resources
Local stakeholders hesitant or unwilling to accept proposed adaptation measures	High	Adaptation measures may not be socially and politically acceptable	Adaptation measures must be developed in a participatory manner with due consideration for the local way of living
Proposed institutional changes are unsuccessful	High	Effectiveness of proposed adaptation measures may be difficult to achieve without suitable institutional support.	Follow procedures and guidelines as defined by SENPLADES, LOEP, SNAP and other similar type national agencies in the process to achieve institutional change.
PERU:			
National and Sector Policies	Medium	Tendency to reduce or simplify environmental	Avoid document overload, costs, professional fees, and processes when

		requirements in order to expedite project implementation	considering CV/CC in management instruments. CV/CC considerations should be incorporated into existing instruments/norms to achieve expediency
Institutional Participation and Stability	Medium	Possible overload in MINAM; need for caution with respect to MEF and the SNIP; complex internal structure at MINAGRI; certain level of difficulty in achieving inter-ministerial coordination.	Be mindful of the timing of project activities that require ministerial participation. Invitations must be carefully planned and formally communicated with as much lead time as possible.
Insufficient application and continuity of the M&E System	Medium	To achieve the desired project results, a good baseline is needed and a properly designed system that is implemented on a consistent basis. There is a potential for problems in carrying out hydrometric measurements.	Place much attention on the local baseline, the applicability of methods and metrics at the local level, responsibilities, and resources in the design of the M&E system. Involve locals in the application process

ANNEX 8: ENDORSEMENT BY GEF FOCAL POINTS

Ministerio del Ambiente

Ministry of Environment of Ecuador

Quito, April 9th, 2013

To: Ms. Karin Shepardson
The World Bank
1818 H Street, NW
Washington, DC 20433

Subject: Endorsement for Andes Adaptation to the Impact of Climate Change in Water Resources (P145345).

In my capacity as GEF Operational Focal Point for Ecuador, I confirm that the above project proposal is in accordance with my government's national priorities and our commitment to the relevant global environmental conventions; and was discussed with relevant stakeholders, including the global environmental convention focal points.

I am pleased to endorse the preparation of the above project proposal with the support of the World Bank. If approved, the proposal will be prepared and implemented by The Andean Community of Nations and the Environmental Ministries of Ecuador/Bolivia/Peru/Colombia. I request the World Bank to provide a copy of the project document before it is submitted to the GEF Secretariat for CEO endorsement.

The total financing being requested for this project is US$10,000,000 from SCCF, and 1,370,000 from Ecuador GEFTF, inclusive of project preparation grant (PPG), and Agency fees for project cycle management services associated with the total GEF grant. The financing requested for the project, comprised of Ecuador, Bolivia, Perú and Colombia (for SCCF), and Ecuador (for GEFTF), is detailed in the table below.

Source of Funds	GEF Agency	Focal Area	Amount (in US$)			
			Project Preparation	Project	Fee	Total
SCCF	WB	CC	200,000	8,850,000	950,000	10,000,000
GEFTF	WB	BD	-	1,240,000	130,000	1,370,000
Total GEF Resources			200,000	10,090,000	1,080,000	11,370,000

1

Ministerio del Ambiente

I consent to the utilization of Ecuador's allocations in GEF-5 as defined in the System for Transparent Allocation of Resources (STAR).

Sincerely,

Mgs. Lorena Tapia
Minister of Environment
GEF Operational Focal Point – Ecuador

Rv/MCH/MH/EN

Copy to: Convention Focal Point for UNFCCC
Convention Focal Point for UNCBD
Convention Focal Point for UNCCD

"Decenio de las Personas con Discapacidad en el Perú"
"Año de la Inversión para el Desarrollo Rural y la Seguridad Alimentaria"

Lima, April 10, 2013

Carta N° 015 -2013-OCNI-SG/MINAM

Ms. Karin Shepardson
Program Manager, GEF Executive Coordinator
World Bank (WB)

Subject: Endorsement for Project *"Andes Adaptation to the Impact of Climate Change in Water Resources" (P145345)*

Dear Ms. Shepardson,

In my capacity as GEF Operational Focal Point for Peru, I confirm that the above project proposal (a) is in accordance with the government's national priorities and the commitments made by Peru under the relevant global environmental conventions and (b) has been discussed with relevant stakeholders, including the global environmental convention focal points, in accordance with GEF's policy on public involvement.

Accordingly, I am pleased to endorse the preparation of the above project proposal with the suport of WB as GEF implementing agency. If approved, the proposal will be prepared and implemented by the Andean Community of Nations and the Ministry of Environment of Peru. I request WB to provide a copy of the project document for information of this office before it is submitted to the GEF Secretariat for CEO endorsement.

I undestand that the total GEF financing being requested for this project is US $ 10,000,000 dollars from SCCF, including the project preparation grant (PPG), if any, and the Agency fee (9.5%) for project cycle management services associated with this project. The financing requested for the project, comprised of Ecuador, Bolivia, Peru and Colombia, is detailed en the table below:

Source of Funds	GEF Agency	Focal Area	Amount (in US$)			
			Project Preparation	Project	Fee	Total
SCCF	WB	CC	200,000	8,850,000	950,000	10,000,000
Total GEF Resources			200,000	8,850,000	950,000	10,000,000

Sincerely,

José Antonio González Norris
Peru GEF Operational Focal Point

Av. Javier Prado Oeste 1440
San Isidro, Lima 27, Perú
T. (511) 611-6000

Estado Plurinacional de Bolivia

Ministerio de Medio Ambiente y Agua

MMAyA
Ministerio de Medio Ambiente y Agua

La Paz, 08 ABR 2013
MMAyA-VMA 595 /2013

Ms. Karin Shepardson
The World Bank
1818 H Street, NW
Washington, DC 20433

Ref. Aprobación para el proyecto de adaptación de los Andes al Impacto del Cambio Climático en los Recursos Hídricos (P145345).

En mi calidad de Punto Focal operacional del FMAM para el Estado Plurinacional de Bolivia, confirmo que la propuesta de proyecto de "Adaptación de los Andes al Impacto del Cambio Climático en los Recursos Hídricos (P145345)" está enmarcado en las prioridades de gobierno del Estado Plurinacional de Bolivia y nuestro compromiso con los correspondientes convenios ambientales mundiales, y ha sido discutido con las organizaciones y partes interesadas.

En este sentido, tengo el agrado de apoyar la preparación de la propuesta del mencionado proyecto con el apoyo del Banco Mundial. Si es aprobada, la propuesta será elaborada y ejecutada por la Comunidad Andina de Naciones y el Ministerio de Ambiente y Agua del Estado Plurinacional de Bolivia; por lo cual solicito al Banco Mundial proporcionar una copia del documento del proyecto antes de su presentación a la Secretaría del FMAM para su aprobación por el CEO.

La financiación total solicitada para este proyecto (del FECC) es de US$ 10.000.000,00 que incluye el monto de preparación del proyecto de subvención (PPG) y, en su caso, los honorarios de la Agencia de Servicios para Proyectos de gestión del ciclo asociados a la donación total del FMAM. La financiación solicitada para Ecuador, Bolivia, Perú y Colombia se detalla en la siguiente tabla.

Source of Funds	GEF Agency	Focal Area	Amount (in US$)			
			Project Preparation	Project	Fee	Total
SCCF	WB	CC	200.000	8.850.000	950.000	10.000.000
Total GEF Resources			200.000	8.850.000	950.000	10.000.000

Sinceramente,

Ing. Fdo. Juan Pablo Cardozo Núñez
VICEMINISTRO DE MEDIO AMBIENTE, BIODIVERSIDAD, CAMBIOS CLIMÁTICOS Y DE GESTIÓN Y DESARROLLO FORESTAL
MMAyA

JPCA/cst
Cc Arch.

Quinua
2013 Año Internacional

VICEMINISTERIO DE MEDIO AMBIENTE, BIODIVERSIDADCAMBIOS CLIMATICOS Y DE GESTIÓN Y DESARROLLO FORESTAL
Av. Camacho No. 1471 – Telf.: 2146382 – 2146383- 2146385-2146374
"2013 Año Internacional de la Quinua"

MinAmbiente
Ministerio de Ambiente y Desarrollo Sostenible

PROSPERIDAD PARA TODOS

Bogotá DC, 18 April 2013

Ms. Karin Shepardson
The World Bank
1818 H Street, NW
Washington, DC 20433

Subject: Endorsement for Andes Adaptation to the Impact of Climate Change in Water Resources (P145345).

In my capacity as GEF Operational Focal Point for Colombia, I confirm that the above project proposal (a) is in accordance with my government's national priorities and our commitment to the relevant global environmental conventions; and (b) was discussed with relevant stakeholders, including the global environmental convention focal points.

I am pleased to endorse the preparation of the above project proposal with the support of the World Bank. If approved, the proposal will be prepared and implemented by The Andean Community Secretariat and the Ministry of Environment and Sustainable Development of Colombia. I request the World Bank to provide a copy of the project document before it is submitted to the GEF Secretariat for CEO endorsement.

The total financing being requested for this project is US$10,000,000 from SCCF, inclusive of project preparation grant (PPG), and Agency fees for project cycle management services associated with the total GEF grant. The financing requested for the project, comprised of Ecuador, Bolivia, Peru and Colombia, is detailed in the table below.

Source of Funds	GEF Agency	Focal Area	Amount (in US$)			
			Project Preparation	Project	Fee	Total
SCCF	WB	CC	200,000	8,850,000	950,000	10,000,000
Total GEF Resources			200,000	8,850,000	950,000	10,000,000

Sincerely,

Alejandra Torres

ALEJANDRA TORRES DROMGOLD
Head, Office of International Affairs

CC: Paula Caballero, Directora de Asuntos Económicos, Sociales y Ambientales, MRE
Omar Franco, Director, IDEAM
Rodrigo Suarez, DCC, MADS

Elaboró: Luis Eduardo Quintero.
Fecha de Elaboración: Abril 17 de 2013

05/21/13
P145345

1 de 1

ANNEX 9: EXECUTIVE AGENCY ENDORSEMENT

PERÚ | Ministerio del Ambiente | Dirección General de Cambio Climático, Desertificación y Recursos Hídricos

"Decenio de las Personas con Discapacidad en el Perú"
"Año de la Consolidación del Mar de Grau"

San Isidro, 21 de junio de 2016

CARTA N° 48 -2016-MINAM/DVMDERN/DGCCDRH

Señor
René Gómez – García
Ejecutivo Sénior (Punto Focal GEF-CAF)
CAF
Av. Enrique Canaval y Moreyra N° 380. Edificio Torre Siglo XXI, piso 9
San Isidro.-

Referencia: Selección de agencia ejecutora del Proyecto Regional "Adaptación al Impacto del Cambio Climático sobre el Agua – AICCA"

Tengo el agrado de dirigirme a usted en relación al asunto de la referencia, relacionado con la selección de la agencia ejecutora, cuya evaluación fue realizada por los puntos focales técnicos que forman parte del Proyecto, contando con la supervisión de vuestra institución como agencia implementadora.

Al respecto, se señala que por parte del Perú y tras el proceso de evaluación de las tres propuestas remitidas (CONDESAN, SNV y RARE), se seleccionó como Agencia Ejecutora del Proyecto al Consorcio para el Desarrollo de la Ecorregión Andina (CONDESAN).

Sin otro particular hago propicia la ocasión para expresarle mi consideración y estima personal.

Atentamente,

Eduardo Durand López-Hurtado
Director General de Cambio Climático,
Desertificación y Recursos Hídricos

/rm

www.minam.gob.pe
Av. Javier Prado Oeste 1440
San Isidro, Lima 27, Perú.
T: (511) 611-6000
F: (511) 611-1634

San Isidro, June 21st, 2016
Letter No. 48-2016-MINAM / DVMDERN / DGCCDRH

Mr.
René Gómez-García
Senior Executive (Focal Point GEF-CAF)
CAF
Av. Enrique Canaval y Moreyra No. 380. Building Century XXI Tower, 9th Floor
San Isidro.-

Reference: Selection of executing agency of the Regional Project "Adaptation to the Impact of Climate Change on Water-AICCA"

I am pleased to address you in relation to the issue of the reference, related to the selection of the executing agency, whose evaluation was conducted by the technical focal points that are part of the project, with the supervision of your institution as an implementing agency.

In this regard, it is noted that by Perú and after the evaluation process of the three submitted proposals (CONDESAN, SNV and RARE), it was selected as Project Executing Agency, the Consortium for the Development of the Andean Ecoregion (CONDESAN).

Without further ado I take this opportunity to express my consideration and esteem.

Sincerely,

Eduardo Durand López-Hurtado
General Director of Climate Change, Desertification and Water Resources.

Ministerio del Ambiente

Oficio Nro. MAE-SCC-2016-0091

Quito, D.M., 24 de junio de 2016

Asunto: Carta aprobación CONDESAN como Agencia Ejecutora Regional Proyecto AICCA

Señor
René Gómez - García Palao
Ejecutivo Senior / Ambiente y Cambio Climático
BANCO DE DESARROLLO DE AMÉRICA LATINA - CAF
En su Despacho

De mi consideración:

Al tiempo de extenderle un cordial saludo, me permito hacer referencia al Proyecto Regional del Fondo para el Medio Ambiente Mundial (GEF, por sus siglas en inglés) *Adaptación al Impacto del Cambio Climático sobre el Agua (AICCA)*, mismo que se viene preparando y gestionando desde el 2013.

Al respecto, tomando en cuenta que el objetivo general del proyecto es generar herramientas y conocimientos en la Región Andina para que los países puedan contribuir a la resiliencia de sectores altamente dependientes de recursos hídricos, se realizó un proceso estricto de evaluación para seleccionar la Agencia Ejecutora Regional del Proyecto.

En este sentido, tengo a bien ratificar el interés de esta Cartera de Estado en contar con el *Consorcio para el Desarrollo Sostenible de la Eco Región Andina (CONDESAN)* para el fin mencionado.

En este contexto, agradezco que el Banco de Desarrollo de América Latina (CAF), en calidad de agencia implementadora GEF incluya a CONDESAN como encargada de la administración y ejecución del Proyecto AICCA.

Atentamente,

Documento firmado electrónicamente

Mgs. Jorge Antonio Burbano Criollo
SUBSECRETARIO DE CAMBIO CLIMÁTICO

Anexos:
- im_aicca_actualizado_23_06_2016.doc

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Ministerio del Ambiente

Oficio Nro. MAE-SCC-2016-0091

Quito, D.M., 24 de junio de 2016

Copia:
Señorita
Diana Priscila Martucci Larrea
Coordinadora General de Planificación Ambiental

Señor Magister
Diego Gustavo Guzman Figueroa
Director Nacional de Adaptación al Cambio Climático

Señor Magister
Jorge Rodrigo Nuñez Jaro
Especialista en Vulnerabilidad y Adaptación - Proyecto Tercera Comunicación Nacional - PNUD

Señorita Licenciada
Valeska Soledad Yanez Bravo
Analista de Planificación 1

mm/dg/vy/ip

No. folio. MAE-SCC-2016-0091

Quito, D.M., June 24th, 2016

Subject: Approval Letter- CONDESAN as Regional Project Executing Agency AICCA

Mr.
René Gómez-García Palao
Senior Executive / Environment and Climate Change
DEVELOPMENT BANK OF LATIN AMERICA-CAF
At his office

Of my consideration:

At the time of extending a cordial greeting, I would like to refer to the Regional Project Fund for Global Environment (GEF, for its acronym in English) Adaptation to the Impact of Climate Change on Water (AICCA) that is being developed and managed since 2013.

In this regard, taking into account that the overall objective of the project is to create instruments and knowledge in the Andean region, so that countries can contribute to the adaptation of highly dependent sectors of water resources, a strict evaluation process was conducted to select the Project Regional Agency.

In this sense, I have to ratify the interest of this portfolio to count on the Consortium for Sustainable Development of Eco Andean Region (CONDESAN) for this purpose.

In this context, I thank the Development Bank of Latin America (CAF), GEF as an implementing agency to include CONDESAN as responsible for the administration and enforcement of AICCA Project.

Sincerely,

Document signed electronically
MA. Jorge Antonio Burbano Criollo
Undersecretary of Climate Change

Attach to:
Miss
Diana Larrea Martucci Priscila
General Coordinator of Environmental Planning

Mr. MAr
Diego Figueroa Gustavo Guzman
National Director of Climate Change Adaptation

Mr. MA

Jorge Nuñez Rodrigo Jara
Vulnerability and Adaptation Specialist-UNDP Project Third National Communication-

Miss BS
Valeska Yanez Soledad Bravo
Analist Planning 1

Mm / dg / v / tp

TODOS POR UN NUEVO PAÍS
PAZ EQUIDAD EDUCACIÓN

MINAMBIENTE

Al contestar por favor cite estos datos:

OAI-8150 **Fecha: 17 de junio de 2016 16:50** **Nº Reg. Salida: OAI-8150-E2-2016-014143**
Folios: **Anexos: 0**

Bogotá D.C.

Señor
Rene Gomez- Garcia,
Punto Focal GEF
CAF

Referencia: Proyecto Adaptación del Cambio Climático sobre el Agua – AICCA. Selección de CONDESAN como Agencia Ejecutora del proyecto GEF 5384

Estimado Señor Goméz-Garcia,

En mi calidad de Punto Focal Operativo para Colombia del GEF, avalo la contratación de la firma CONDENSAN como Agencia Ejecutora del **Proyecto GEF AICCA - "Adaptación al Impacto del Cambio Climático sobre el Agua".**

La selección de la firma CONDENSAN se aprueba sobre la base que fue realizada a través de un proceso competitivo realizado por CAF y evaluado por cada uno de los países participantes del proyecto.

Saludos cordiales,

Firmado por: MARIA VASQUEZ MARAZZANI
JEFE DE OFICINA 0137 GRADO 21 **Fecha firma: 17/06/2016 16:28:27**

CLAUDIA VÁSQUEZ MARAZZANI
Jefe Oficina de Asuntos Internacionales
Punto Focal GEF
Ministerio de Ambiente y Desarrollo Sostenible de Colombia

Copia a: Maria Laura Rojas Vallejo / GEF Political Focal Point – Ministry of Foreign Affairs
Pablo Vieira Samper / Viceminister of Environment and Sustainable Development
Rodrigo Suarez Castaño / Director of Climate Change- MADS
Omar Franco/Director- IDEAM

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Bogotá D.C.,

Mr.
Rene Gomez-Garcia
Focal Point GEF
CAF

Reference: Adaptation of Climate Change on Water-AICCA Project. CONDESAN selection as GEF 5384 Project Executing Agency.

Dear Mr.Gómez.García,

In my role of Operational Focal Point for GEF Colombia, I guarantee the contract with CONDENSAN Company as Project Executing Agency GEF AICCA- "Adaptation to the Impact of Climate Change on Water".

The selection of CONDENSAN Company is approved on the basis that it was selected through a competitive process conducted by CAF and evaluated by each of the participating countries of the project.

Best regards,

Signed by: **Maria Vasquez Marazzani**
Head office 0137 Grade 32 Signature date: 06/17/2016 16:28:27

CC.
Claudia Vasquez Marazzani
Head Office of International Affairs
Focal Point GEF
Ministry of Environment and Sustainable Development of Colombia

Attach to: Maria Laura Rojas Vallejo / GEF Political Focal Point-Ministry of Foreign Affairs
Pablo Vieira Samper / Vice minister of Environment and Sustainable Development
Rodrigo Suarez Brown / Director of Climate Change-MADS
Omar Franco / director-IDEAM

Estado Plurinacional de Bolivia

MEDIO AMBIENTE Y AGUA

La Paz, 22 JUN 2016
MMAyA/VMABCCGDF Nº 1156 /2016

Señor
René Gómez García
PUNTO FOCAL GEF
BANCO DE DESARROLLO DE AMÉRICA LATINA (CAF)
Lima, Peru.-

REF.: **SELECCIÓN DE CONDESAN COMO AGENCIA EJECUTORA REGIONAL DEL PROYECTO GEF-5384 "ADAPTACION DEL CAMBIO CLIMATICO SOBRE EL AGUA (AICCA)"**

De mi consideración:

A tiempo de expresar un cordial saludo, y en referencia al proceso de selección de la Firma CONDESAN realizada a través de un proceso competitivo promovido por el Banco de Desarrollo de América Latina (CAF) y que contó con la evaluación por parte de cada uno de los países participantes del proyecto. En este sentido, en calidad de Punto Focal Operativo GEF del Estado Plurinacional de Bolivia, expreso el aval a la contratación de la Firma CONDESAN como Agencia Ejecutora Regional del Proyecto GEF-5384 "ADAPTACION DEL CAMBIO CLIMATICO SOBRE EL AGUA (AICCA)".

Cabe recalcar y según las comunicaciones previas, que es imprescindible que CONDESAN gestione, ante el Ministerio de Relaciones Exteriores de Bolivia, la autorización de su personería jurídica para el desarrollo de programas, proyectos o actividades en nuestro país. Asimismo, la institución seleccionada deberá coordinar estrechamente con el Viceministerio de Agua Potable y Saneamiento Básico, instancia rectora del sector de agua potable y saneamiento básico (Incluyendo protección de fuentes de abastecimiento de agua, drenaje pluvial y gestión integral de residuos sólidos); como también realizar la gestiones correspondientes para la articulación con la entidades ejecutoras nacionales dependientes del Ministerio de Medio Ambiente y Agua.

Con este motivo, aprovecho la oportunidad para reiterar las seguridades de mi distinguida consideración.

Lic. Gonzalo Rodríguez Camara
VICEMINISTRO DE MEDIO AMBIENTE, BIODIVERSIDAD, CAMBIOS CLIMÁTICOS Y DE GESTIÓN Y DESARROLLO FORESTAL
MMAyA

Cc: Archivo
Rene Orellana, Punto Focal Político - Ministro de Planificación del Desarrollo
David Choquehuanca, Ministerio de Relaciones Exteriores
Rubén Méndez, Viceministro de Agua Potable y Saneamiento Básico