ADAPTATION FUND

Letter of Endorsement by Government

Climate Change Office
Ministry of Environment and Energy of Costa Rica

4th of August, 2014

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for **REDUCING THE VULNERABILITY BY FOCUSING ON CRITICAL SECTORS (AGRICULTURE, WATER RESOURCES, AND COASTLINES) IN ORDER TO REDUCE THE NEGATIVE IMPACTS OF CLIMATE CHANGE AND IMPROVE THE RESILIENCE OF THESE SECTORS**

In my capacity as designated authority for the Adaptation Fund in Costa Rica, I confirm that the above national programme proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Costa Rica

Accordingly, I am pleased to endorse the above project/programme proposal with support from the Adaptation Fund. If approved, the programme will be implemented by Fundecooperación para el Desarrollo Sostenible and executed by several organizations at National/local level as indicated in the proposal document.

MINISTERIO DE AMBIENTE, ENERGIA Y TELECOMUNICACIONES
MINAET
DIRECCION DE CAMBIO CLIMATICO
COSTA RICA

Sincerely,

William Alpízar
Climate Change office Director
Ministry of Environment and Energy
Costa Rica

REQUEST FOR PROJECT/PROGRAMME FUNDING FROM THE ADAPTATION FUND

The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email or fax.

Please type in the responses using the template provided. The instructions attached to the form provide guidance to filling out the template.

Please note that a project/programme must be fully prepared (i.e., fully appraised for feasibility) when the request is submitted. The final project/programme document resulting from the appraisal process should be attached to this request for funding.

Complete documentation should be sent to:

The Adaptation Fund Board Secretariat
1818 H Street NW
MSN P4-400
Washington, D.C., 20433
U.S.A
Fax: +1 (202) 522-3240/5
Email: afbsec@adaptation-fund.org

ADAPTATION FUND

PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category:	**REGULAR SIZE**
Country/ies:	**COSTA RICA**
Title of Project/Programme:	**REDUCING THE VULNERABILITY BY FOCUSING ON CRITICAL SECTORS (AGRICULTURE, WATER RESOURCES, AND COASTLINES) IN ORDER TO REDUCE THE NEGATIVE IMPACTS OF CLIMATE CHANGE AND IMPROVE THE RESILIENCE OF THESE SECTORS**
Type of Implementing Entity:	**NATIONAL IMPLEMENTING ENTITY**
Implementing Entity:	**FUNDECOOPERACIÓN PARA EL DESARROLLO SOSTENIBLE**
Executing Entity/ies:	**NATIONAL MINISTRY OF ENVIRONMENT AND ENERGY (MINAE), MINISTRY OF AGRICULTURE (MAG), NATIONAL SERVICE OF GROUNDWATER, IRRIGATION AND DRAINAGE (SENARA), ENGINEERS PROFESSIONAL ASSOCIATION, ACADEMIA, NGO'S, OTHERS.**
Amount of Financing Requested:	**US$ 9.97 MILLION**[1] (in U.S Dollars Equivalent)

[1] The amount requested to the Adaptation Fund (AF) is a total of US$10 Million (US dollar Equivalent). The amount of US$9.97 Million excludes the $30.000 already disbursed by the AF as grant Project Formulation Grant..

Table of Contents

1. Country Context 6
1.1 Economic Impact of Extreme Climate Events 8
1.2 Current and Future Vulnerability 12
1.3 Socioeconomic Vulnerability 18
1.4 Expected impacts of climate change-Challenges to be addressed 22
2. Adaptation 26
2.1 Intervention Component: Agriculture 27
2.2 Intervention Component: Water Resource-Coastlines 32
Annex 1. Programme Screening Methodology 181
Phase 1 – Regional Prioritization 181
Phase II - In-depth Analysis 186
Annex 2. Consultation Process 188
Annex 3. Final Technical Review (Response Sheet) 217

INDEX OF TABLES

Table 1 Global losses per economic activities attributed to the impact of extreme events. 1988-2009. (In US millions dollars by 2006) 8
Table 2 Types of Events and their Absolute and Relative Participation in Global Losses 1988-2009..... 9
Table 3 Accumulated Losses by Sector, 2005-2011 -millions of constant dollars of 2011 and percentages- 9
Table 4 Percentage distribution of accumulated losses caused by hydrometeorological events per province between 2005-2010. 10
Table 5: Climate Risk Scenario for Costa Rica 22
Table 6 Priority per region based on social, economic and environmental vulnerability..... 25
Table 7 Population Employed according to the Type of Activity. 2009-2011. (In number of people)..... 29
Table 8 Priority regions for component 1 45
Table 9 Technical options in agriculture and how it enhances climate resilience..... 48
Table 10 Component 2 Priority Region(s)..... 61
Table 11 Technical options in water-coastal sector and how it enhances climate resilience 72
Table 12 Synthesis of activities, including contribution to climate resilience and beneficiaries . 78
Table 13 Costa Rica's Legal Framework, policies and strategies-Alignment with Costa Rica Full Proposal..... 103
Table 14 Initiatives on Climate Change..... 121
Table 15 Participating Organizations for Climate Change 123
Table 16 Central America: Initial Estimation of the Accumulated Costs of the Impact of Climate Change in the Agricultural Sector by 2100 (in percentage of the GDP for 2008 at current net value)..... 126
Table 17 Central America: Initial Estimation of the Accumulated Costs of the Impact of Climate Change in the Farming Sector by 2100 (in percentage of the GDP for 2008 at current net value) 126
Table 18 Central America: Initial Estimation of the Accumulated Costs of the Impact of Climate Change in the Farming Sector by 2100 (in percentage of the GDP for 2008 at current net value) 127
Table 19 Monitoring and reporting and its procedures:..... 160
Table 20 Monitoring-evaluation plan and budget needed at the NIE level. 161
Table 21 Breakdown of NIE estimated costs. 175
Table 22 Stakeholders involved in the consultation process 192

INDEX OF FIGURES

Figure 1 Costa Rica-Disaster Risk Profile according to the World Bank..... 7
Figure 2 Losses caused by Hydrometeorological Events in the Agricultural Sector by Type-millions of constant dollars of 2011 and percentages-..... 11
Figure 3 Current Vulnerability Map 12
Figure 4 Future Vulnerability Map: 2030 13
Figure 5Percentage variation of annual rainfall in a climate change scenario. Comparison between the 1961-1990 period and the 2081-2100 period..... 13

Figure 6: Variation of average temperature in a climate change scenario. Comparison between the 1961-1990 period and the 2081-2100 period 13
Figure 7 Climate Hazards in Case of Extreme Dry Events 15
Figure 8 Climate Hazard in Case of Extreme Rainy Events 16
Figure 9 Chart of Households in Poverty according to the planning region 19
Figure 10 Human Development Index per Canton 2011 20
Figure 11: Species Richness in Costa Rica 21
Figure 12 Climate Change Severity Index for Costa Rica (Towards the 2020s) 22
Figure 13 Costa Rica: Percentage Distribution of Losses per Sector due to Droughts (1993-94, 1997-98, 2001-2002, and 2009-2010) 28
Figure 14: Percentage Distribution of Losses per Sector due to Droughts (1993- 94, 1997-98, 2001-2002, and 2009-2010) 30
Figure 15: Percentage Distribution of Uses for water flow granted under concession at a national level. 32
Figure 16: Losses caused by Hydrometeorological Events in the Aqueducts and Sewage System Sector at National Level, per Component. 33
Figure 17 Image of Puntarenas: scenario a 2010 - 2100 36
Figure 18: Organization Chart for Implementing the Strategy 83
Figure 19 Local decision-making and community participation 84
Figure 20 Organization Chart for Implementing the Strategy 145
Figure 21 Participative decision-making process 188
Figure 22 Consultation workshops and meetings with stakeholders 189
Figure 23 Public announcement 190
Figure 24 Public launch of the Call for Proposals through informative sessions and media 191

Project / Programme Background and Context:

Provide brief information on the problem the proposed project/programme is aiming to solve. Outline the economic social, development and environmental context in which the project would operate.

1. Country Context

1. Costa Rica is particularly vulnerable to extreme weather events. The country *"is located on a multi-hazard region such as Central America; it is affected with variable recurrence of seismic and volcanic phenomena. It is also seasonally and frequently affected by hydrometeorological situations*." (Alfaro Maykall, 2011)

2. The country's topography and geomorphology are very diversified. It includes coastal plains, islands, mountain ranges and more than 100 volcanic cones. Costa Rica also comprises several islands. Cocos Island (24 square kilometres or 9.3 square miles) stands out because of its distance from the continental landmass, 300 miles (480 km) from Puntarenas. Calero Island is the largest island of the country (151.6 square kilometres or 58.5 square miles).

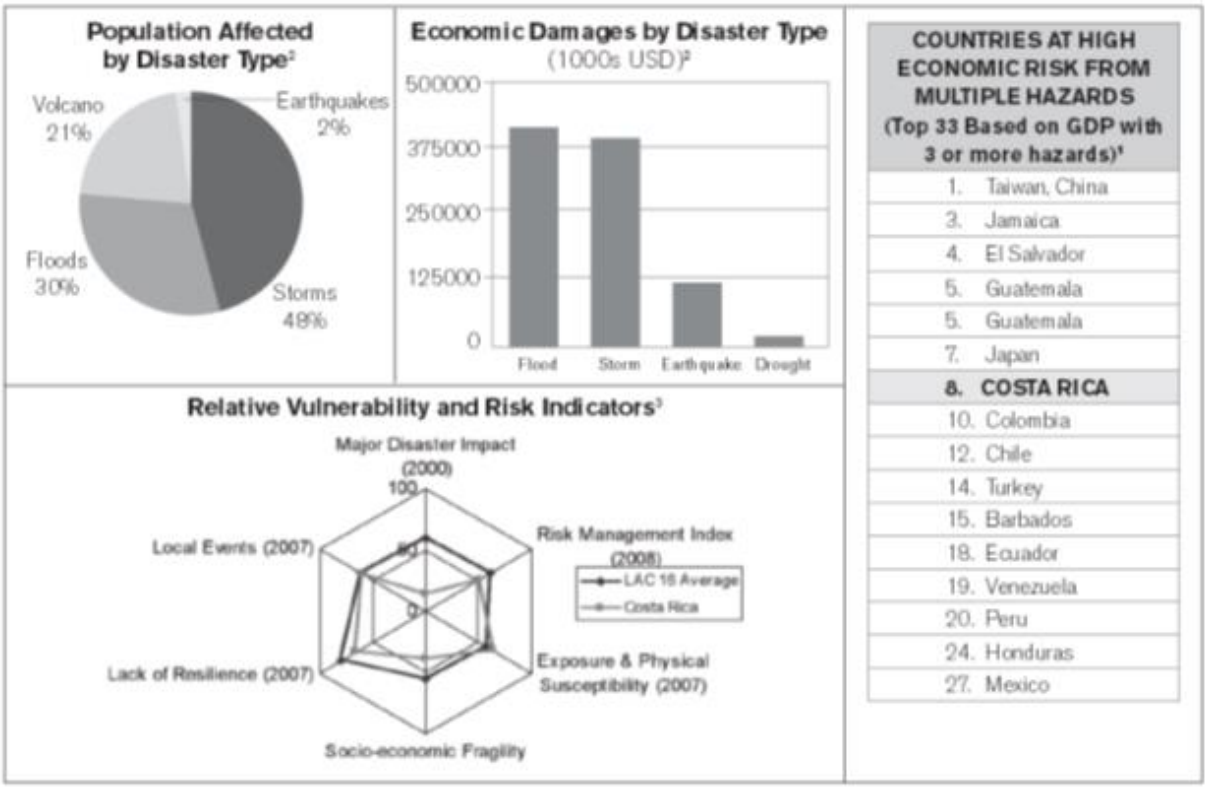
3. Costa Rica is also home to a rich variety of plants and animals, representing nearly 5% of the total types of species identified worldwide, while the country has only about 0.1% of the world's landmass. More than 26% of the country's land area is protected, which represents the largest percentage of protected areas in the world (developing world average 13%, developed world average 8%).

4. The country's climate vulnerability is mainly due to a combination of its geographical situation and economic factors. *"The country's vulnerability has to do with the presence of populations on zones that are prone to volcanic eruptions and unstable lands – eroded by extensive livestock and poorly planned settlements prone to landslides and floods, among others."* (The World Bank Group, 2011)

5. According to the World Bank's report "Natural disaster hot spot", which presents a global view of disaster risks associated with major natural hazards (drought, floods, cyclones,

earthquakes, etc.), Costa Rica is the world's second most exposed country to multiple hazards[2] based on the total land area. According to the report, a total of 36.8% of the total land area is exposed to three or more hazards. The report also places the country in the eighth position of the countries having the highest probability of experiencing economic risks as a result of a greater exposure to three or more natural disasters. Moreover, *"it is estimated that 77.9% of the Costa Rican population and 80.1% of the Gross Domestic Product (GDP) of the country reside in multiple-hazard areas – this is, risks of experiencing three or more natural disasters)"* (World Bank, 2005).

Figure 1 Costa Rica-Disaster Risk Profile according to the World Bank



Source: World Bank, 2005.

6. The *Instituto Meteorológico Nacional – IMN* (National Meteorological Service), which is in charge of national communications to the UNFCCC[3], has made a special effort to contribute

[2] Geophysical hazards include earthquakes and volcanoes; hydrological hazards include floods, cyclones, and landslides.
[3] So far the communications for 2000 and 2005 have been submitted.

to the scientific documentation that supports the decision-making process regarding climate change. Vulnerability studies have been performed regarding the country's coastal zone, water resources, agriculture and ecosystem, for both communications mentioned above, as well as for the third communication currently being developed. These studies show how extreme hydrometeorological conditions have caused damages and disasters in different socioeconomic sectors of the country.

1.1 Economic Impact of Extreme Climate Events

Table 1 Global losses per economic activities attributed to the impact of extreme events. 1988-2009. (In US millions dollars by 2006)

Sector	Total USD millions	Distribution %
Public Works and Transportation	696.9	38.22
Agriculture	396.9	21.77
Energy	329.1	18.05
Housing	206.5	11.33
Environment	54.3	2.98
Water and sewage	45.4	2.49
Emergency attention	35.5	1.95
Health	28.9	1.59
Education	18.5	1.02
Social	6.2	0.34
Public Infrastructure	2.5	0.14
Industry	1.2	0.07
Railroads	0.8	0.05
Private works	0.098	0.01
Total	**1 823.3**	**100.00**

7. *"For the period 1988 - 2009, Costa Rica experienced losses for a total of 1,823.3 million dollars of 2006. Hydrometeorological events are those with greater recurrence, causing significant damages during this period–representing 34 events (82.9% of the total number of registered events). From those events, 32 correspond to excessive rainfall and two of them to a lack of rain (drought). Five potentially destructive earthquakes have occurred along the study period, representing 12.2% of the period events. In economic terms, the greatest absolute contribution regarding the global amount of losses is represented by hydrometeorological events, with 1,161.4 million dollars and 63.7% of relative participation. From these types of natural phenomena, excessive rainfall caused losses for 1,053 million*

dollars, which equals 57.8 % of the total. Drought events affected, in absolute terms, with losses for 107.5 million dollars, which, in relative value, represent 5.9%. Socio-natural events caused losses for 2.7 million dollars, which represented 0.15% of the total." (Ministerio de Planificación Nacional y Política Económica, 2012)

Table 2 Types of Events and their Absolute and Relative Participation in Global Losses 1988-2009

Type of events	Number of events	% events	Amount USD (2006)	%
Hydrometeorological	34	82.9*	1,161,422,141	63.7
Excessive rainfall	32	78.4	1,053,868,315	57.8
Drought	2	4.9	107,553,826	5.9
Earthquakes	5	12.2*	659,218,786	36.1
Others	2	4.9*	2,677,404	0.1
TOTAL	**41**	**100***	**1,823,318,331**	**100**

***Sum of total Hydrometeorological events, Earthquakes and Others.**

Source: Department of Public Investments from the *Ministerio de Planificación Económica y Política Económica* (Ministry of Planning and Economic Policy)

8. An increasing trend in the number of extreme events in the last years (2005-2009) is highlighted in the aforementioned studies, as 40% of the events identified occurred during this period of time. Additionally, losses corresponding to that period total 187 million dollars (52.4%).
9. During the 2005-2011 period, Costa Rica has registered a total loss of US$ 101.5 millions/year (Flores Verdejo, 2012).

Table 3 Accumulated Losses by Sector, 2005-2011
-millions of constant dollars of 2011 and percentages-

Impacted Sector	Total	%
Road Infrastructure	367.41	51.70
Agriculture	118.95	16.74
Rivers and Streams (Dikes and Dredging)	91.41	12.86
Housing	86.88	12.22
Emergency Response	13.49	1.90
Aqueducts and Sewage Systems	9.49	1.34
Aerodrome	7.70	1.08
Education	5.14	0.72
Airport	2.65	0.37
Health	2.59	0.36
Public and Private Buildings	2.30	0.32
Rail Transport	1.05	0.15
Dock	0.55	0.08
Electrical System	0.47	0.07

Environment	0.34	0.05
Telecommunications	0.22	0.03
TOTAL	**710.65**	**100.00**

Source: Flores Verdejo, R. (2012). *Technical Forum: Gestión de Riesgos Asociados con el Cambio Climático.* San José, Costa Rica: MAG-MIDEPLAN.

10. The following table details the percentage distribution of US$745,926,337.69, which represents the total accumulated losses caused by hydrometeorological events per province between 2005-2010:

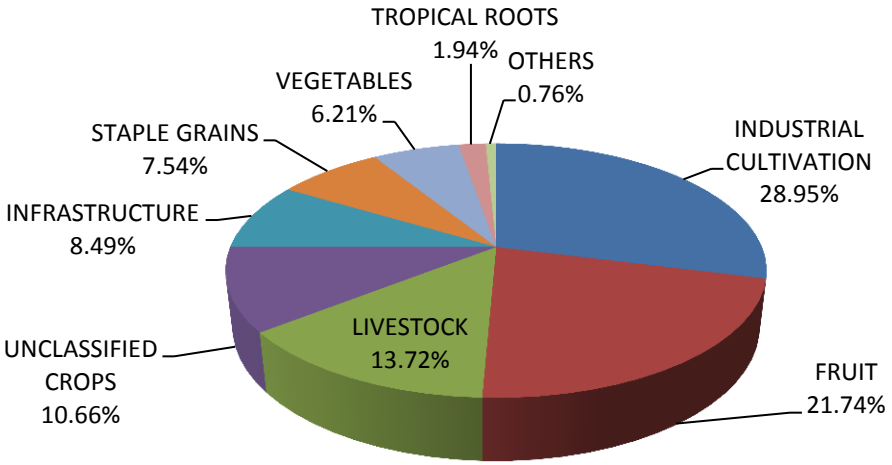
Table 4 Percentage distribution of accumulated losses caused by hydrometeorological events per province between 2005-2010.

Province	Loss Percentage
Puntarenas	23.33%
San José	20.57%
Guanacaste	19.53%
Limón	16.94%
Alajuela	6.87%
Heredia	5.23%
Cartago	4.56%
Without defined territorial location	2.97%

Source: Flores Verdejo, R. (2012). *Technical Forum: Gestión de Riesgos Asociados con el Cambio Climático.* San José, Costa Rica: MAG-MIDEPLAN.

11. The agricultural sector has been one of the most severely affected due to its high vulnerability to weather-related events. The sector has lost more than 300 million dollars as a result of the impact of extreme events –about 21% of the total loss from 1988-2009. In terms of food security, it is important to mention that *"countries located in the tropics share the feature that most food crops are in the upper limit of the optimal production temperature, which means that little increases in the average temperature will result in a high* ***decline in crop yields****. Additionally, the* ***occurrence of plagues and diseases, the threat to biodiversity and the modification of biophysical conditions (variations in atmospheric temperature, humidity, rainfall, wind, and atmospheric pressure) to different altitudinal layers, are also consequences of global changes that are affecting the weather"*** (*Ministerio de Agricultura y Ganadería* (Ministry of Agriculture and Livestock), 2011, quoting Montenegro, 2011).

Figure 2 Losses caused by Hydrometeorological Events in the Agricultural Sector by Type-millions of constant dollars of 2011 and percentages-



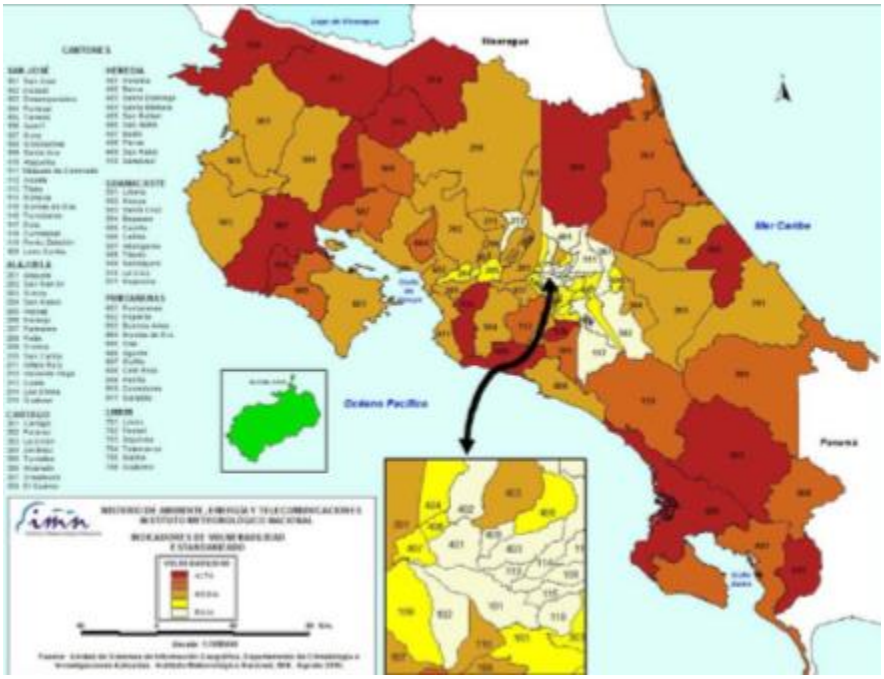
Source: Flores Verdejo, R. (2012). *Technical Forum: Gestión de Riesgos Asociados con el Cambio Climático.* San José, Costa Rica: MAG-MIDEPLAN.

12. On the other hand, the Water Resource in Costa Rica play different key functions for the country's development: hydroelectric power generation (a contribution of 18.5% of total energy consumed), drinking water supply (2.49% for the country's aqueducts and sewage systems), irrigation and drainage, among others, have been affected by extreme events. Due to the increase in the average sea level, coastal areas are subject to flooding, groundwater salinization and the deterioration of freshwater ecosystems. By 2100, the sea level is expected to increase between 9 and 88 cm due to the melting of Greenland, the Antarctic, glaciers and ice caps, which will directly affect Costa Rica due to the disappearance of Puntarenas, a coastal city of 60,000 inhabitants.

1.2 Current and Future Vulnerability

13. Regarding the country's most vulnerable regions, Costa Rica's National Meteorological Institute (IMN) has completed the characterization of the current and future vulnerability for the different regions of the country, by taking into account the relation between their high vulnerability and their low human development index. (Echeverría Bonilla, 2011, pág. 22)

Figure 3 Current Vulnerability Map

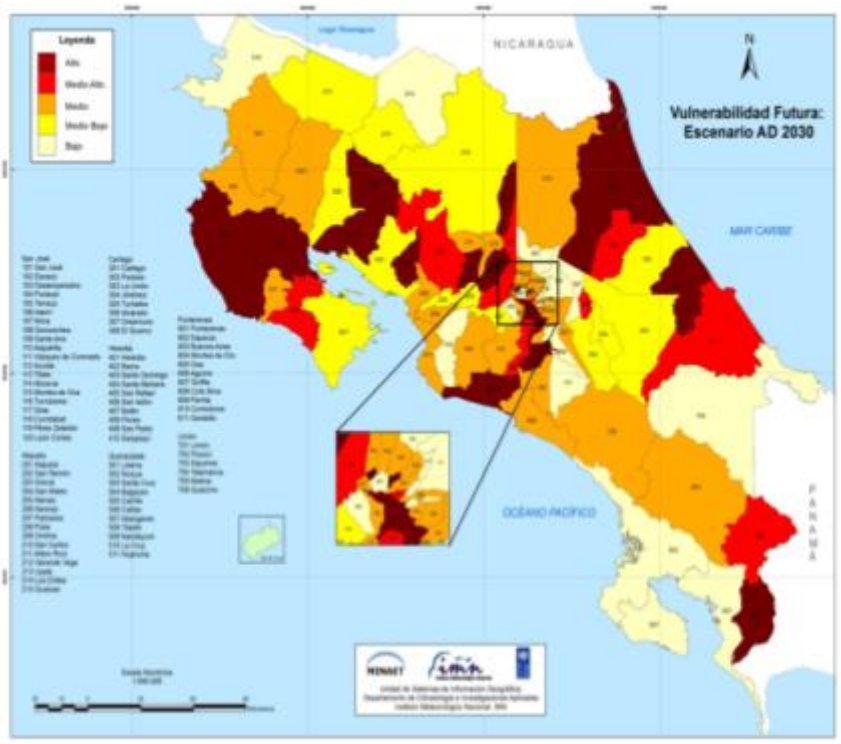


Source: *Instituto Meteorológico Nacional* (National Meteorological Service), 2011

14. By using color coding, both figures (Figure 3 and Figure 4) "*indicate different levels of vulnerability (dark red represents the most vulnerable districts (cantones), red indicates districts with medium-high vulnerability, orange represents those districts with medium-level vulnerability, dark yellow represents those districts with medium-low vulnerability, and finally, light yellow indicates those least vulnerable districts)*" (MINAE, 2009).

15. The factors that determine this vulnerability are mostly socioeconomic and institutional because they are related to the resilience of population in case of different types of events (not only hydrometeorological events). (Echeverría Bonilla, 2011)

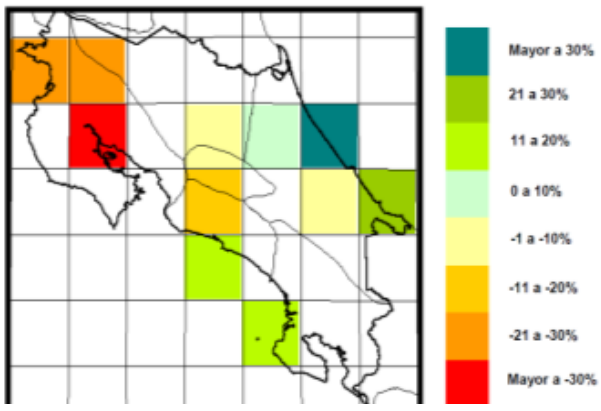
Figure 4 Future Vulnerability Map: 2030



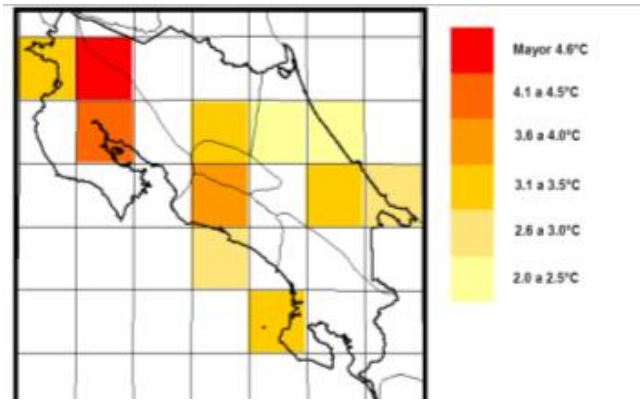
Source: *Instituto Meteorológico Nacional* (National Meteorological Service), 2011

Figure 5Percentage variation of annual rainfall in a climate change scenario. Comparison between the 1961-1990 period and the 2081-2100 period

Figure 6: Variation of average temperature in a climate change scenario. Comparison between the 1961-1990 period and the 2081-2100 period



Source: IMN.

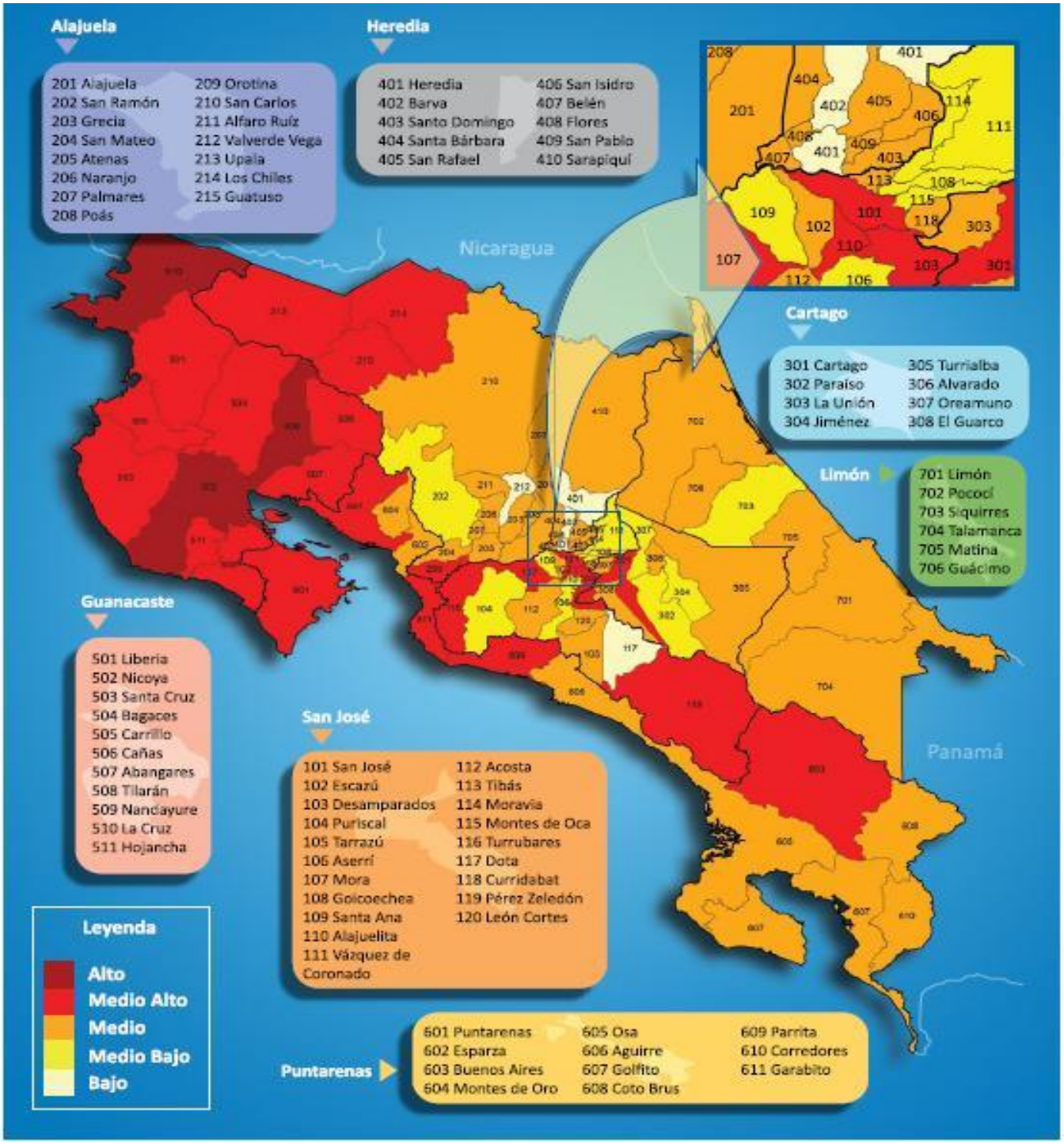


Source: IMN

16. In general terms, based on figures 5 and 6, it can be concluded that projected decreases and increases of annual rainfall indicate drier summers and more humid winters. Normally, for

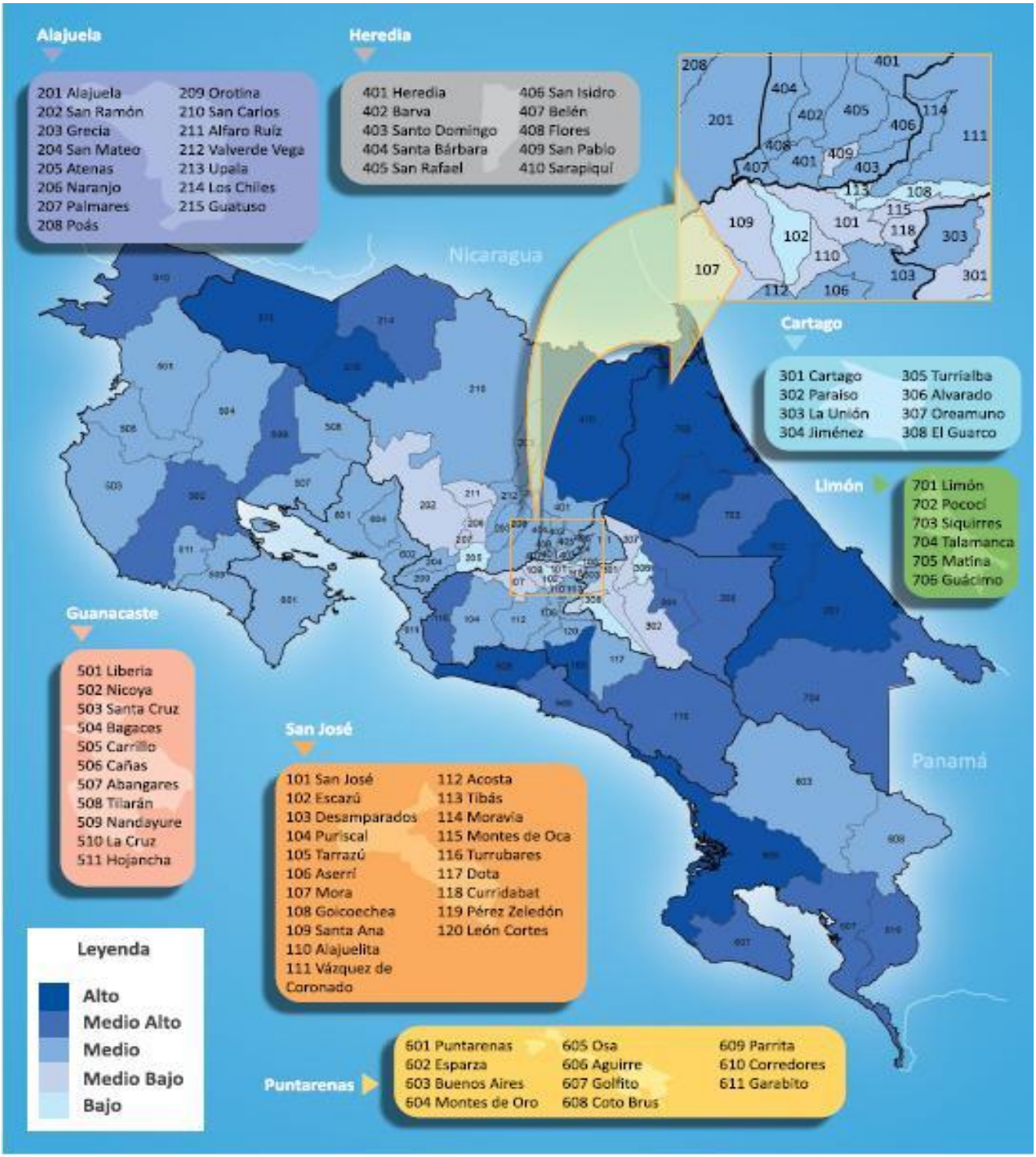
the summer period, in those places where a greater increase in temperature is projected, a decrease in rainfall is expected. On the other hand, an increase in evaporation due to warm temperature episodes during winter months is likely to lead to more intense rainfall even when the annual rainfall volumes decrease.

Figure 7 Climate Hazards in Case of Extreme Dry Events



Source: Final Report: *Mejoramiento de las capacidades nacionales para la evaluación de la vulnerabilidad y adaptación del sistema hídrico al cambio climático en Costa Rica, como mecanismo para disminuir el riesgo al cambio climático y aumentar el IDH* (*Ministerio de Ambiente, Energía y Telecomunicaciones & Instituto Meteorológico Nacional* (Ministry of Environment, Energy and Telecommunications & National Weather Service), 2012)

Figure 8 Climate Hazard in Case of Extreme Rainy Events



Source: Final Report: Mejoramiento de las capacidades nacionales para la evaluación de la vulnerabilidad y adaptación del sistema hídrico al cambio climático en Costa Rica, como mecanismo para disminuir el riesgo al cambio climático y aumentar el IDH (*Ministerio de Ambiente, Energía y Telecomunicaciones & Instituto Meteorológico Nacional* (Ministry of Environment, Energy and Telecommunications & National Weather Service), 2012)

Current Scenarios:

17. An analysis of temperature and rainfall reveals several changes in the extreme values of these variables during the period between 1961 and 2003 in Costa Rica (Jara., 2010):

- ✓ *Temperatures have increased between 0.2 and 0.3 ° C per decade, with a prolonged dry and hot season, the number of hot days increased 2.5% and cold days increased 1.7%, while the number of cold nights and days decreased -2.2% and -2.4% per decade*
- ✓ *Extreme temperatures increased between 0.2 and 0.3 ° C per decade;*
- ✓ *Although most climate data show positive trends (increase of rainfall), the general average annual rainfall in the region and the number of consecutive days of rain do not show significant changes. However, there has been a slight increase of its intensity and extreme rainfall has significantly increased, which is often correlated with the temperature of the tropical Atlantic Ocean. The latter indicates that the periods of prolonged rainfall are related to warm waters in this ocean basin.*
- ✓ *The observed trend over the last 40 years suggests a strengthening of the water cycle, with more intense rainfall for shorter periods that cause more average rainfall per episode.*

Future Scenarios:

- ✓ It is anticipated that temperatures will increase between 2 and 4 ° C higher by 2100 (World Bank, 2005).
- ✓ *Future climate variability will be more severe in higher elevations than in lowlands.* The variations mentioned before have *"negative implications for ecosystems and endemic species that are used to a specific "comfort zone" and reveal a future with more water stress due to the increase in temperatures and the decrease of rainfall"* (Kamalkar, Bradley, & Diaz, 2008).

18. A greater frequency and intensity of extreme phenomena such as flooding and droughts are expected. *This suggests evident impacts on production, the agricultural and forest soils, and water conservation and availability - all of them already showing signs of stress and vulnerability* (Jara., 2010).

1.3 SOCIOECONOMIC VULNERABILITY

19. According to an analysis published by United Nations Economic Commission for Latin America and the Caribbean (UN-ECLAC) in its technical report called "La economía del cambio climático en Centroamérica" ("The Economy of Climate Change in Central America"), *"the socioeconomic vulnerabilities of the region are exacerbated by its geoclimatic location on a narrow isthmus between two continents and between the Pacific and Atlantic oceans".* Central America poor populations suffer more negative impacts due to natural threats or extreme climate events. According to the *Instituto Nacional de Estadística y Censos* –INEC (National Institute of Statistics and Census) for 2011, 21.6 % of the country's total population lives in poverty. The *Centro Internacional de Investigaciones para el Desarrollo* –IDRC (International Development Research Center) has published a study on the inter-relations between climate change and poverty for Latin America and the Caribbean: the study showed that among the 100 countries at greater risk due to climate change, Costa Rica ranks 38.

Región	Total	No Pobres	Pobres		
			Total	Pobreza no extrema	Pobreza extrema
Total País	**100,0**	**78,4**	**21,6**	**15,2**	**6,4**
Central	100,0	82,3	17,7	13,5	4,2
Chorotega	100,0	68,4	31,6	20,1	11,5
Pacífico Central	100,0	76,4	23,6	13,7	9,8
Brunca	100,0	67,3	32,7	19,0	13,7
Huetar Atlántica	100,0	70,7	29,3	19,4	9,9
Huetar Norte	100,0	72,2	27,8	18,2	9,6

Source: Instituto Nacional de Estadística y Censos –INEC (National Institute of

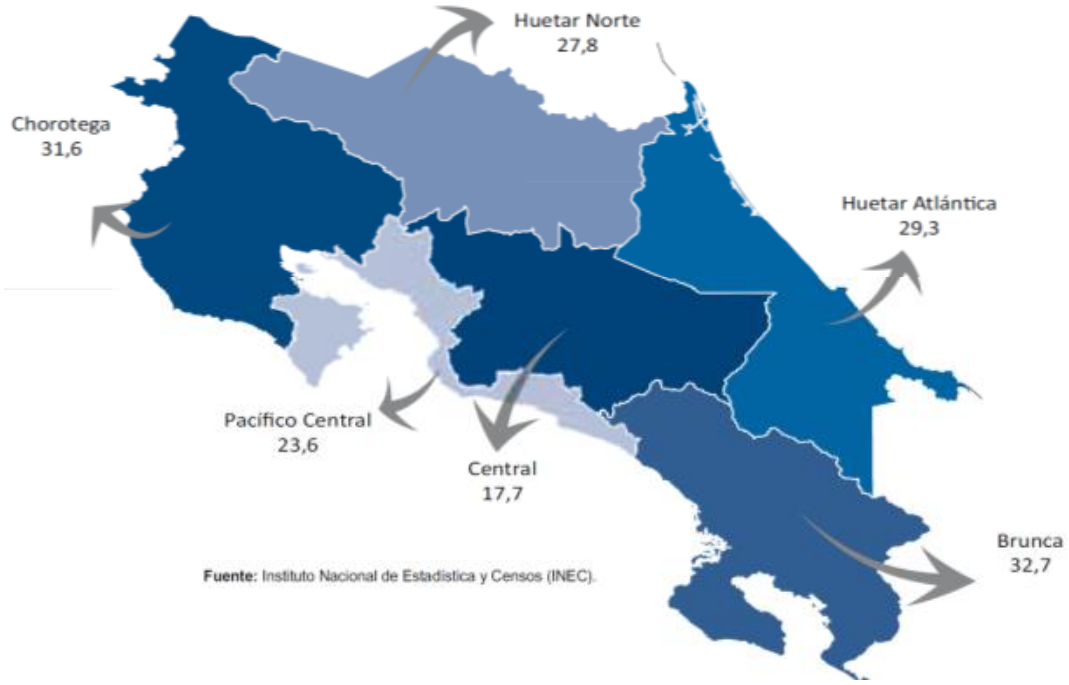
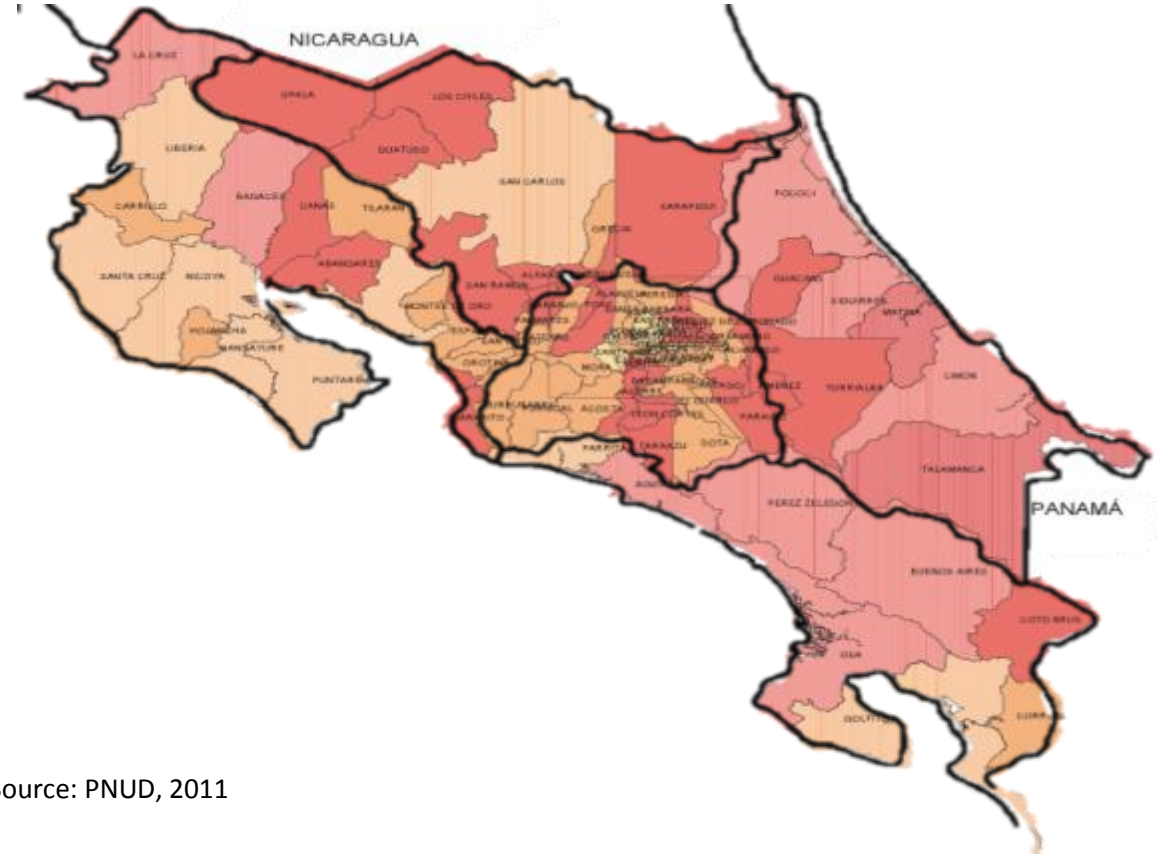


Figure 9 Chart of Households in Poverty according to the planning region

20. For 2011, Costa Rica ranked 69 in the Human Development Index, considered of high development. However, despite the country's progress regarding development, the 2011 Report indicates that environmental threats may eclipse the achievements reached by the country and the region, thus preventing Costa Rica from pursuing its current trend trough development.

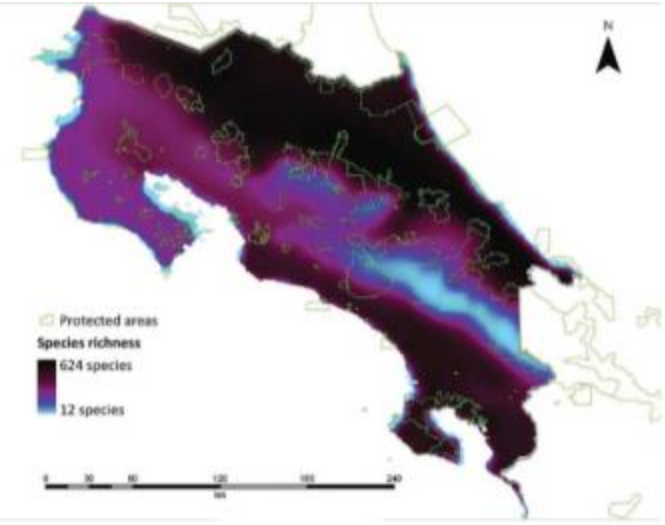
Figure 10 Human Development Index per Canton 2011



Source: PNUD, 2011

21. This socioeconomic vulnerability of Central America is intensified due to its geoclimatic location in an isthmus that serves as bridge between two continents, that is rich in biodiversity and variety of ecosystems, located between two oceans: the Pacific and the Atlantic, with their corresponding climate processes. (CEPAL, 2011). Central America and specifically Costa Rica are 'hot-spots" for the possible impacts of climate change on the environment.

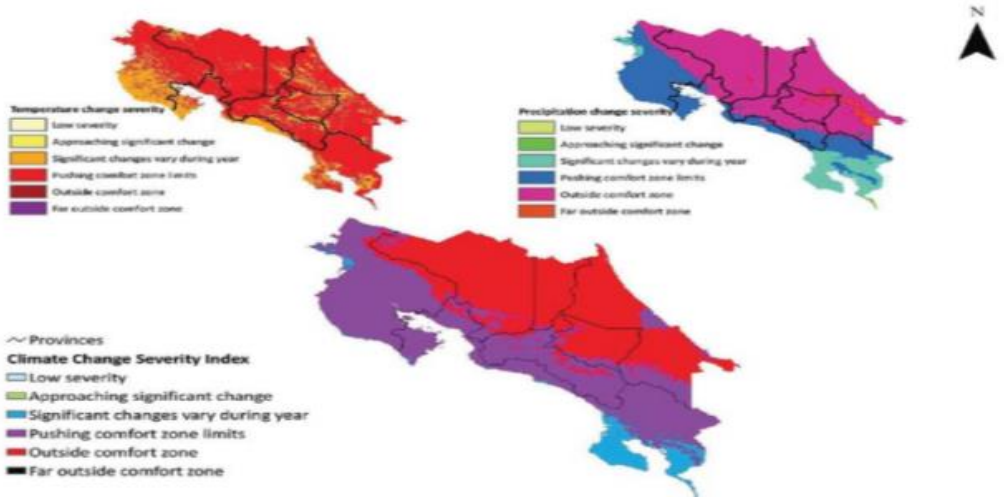
Figure 11: Species Richness in Costa Rica



Source: Potential Impacts of Climate Change on Biodiversity in Central America, Mexico, and the Dominican Republic, 2008

22. The variability of rainfall suggests a significant threat for the unique biodiversity of the region. Biological changes related to climate impacts have already been identified at the *Reserva Biológica del Bosque Nuboso Monteverde* – MCFR (Monteverde Cloud Forest Biological Reserve) and other forests in the country. The greatest concentration of species occurs in the *Brunca Region*, *Huetar Norte Region* and *Huetar Atántica Region*. The index of species richness showed in the study called "Impactos potenciales del Cambio Climático en la Biodiversidad" ("Possible Impacts of Climate Change in Biodiversity"), shows that, by 2020, those regions with a significant number of species will be out of their "comfort zone" (Anderson, 2008).

Figure 12 Climate Change Severity Index for Costa Rica (Towards the 2020s)



Source: Potential Impacts of Climate Change on Biodiversity in Central America, Mexico, and the Dominican Republic, 2008

1.4 EXPECTED IMPACTS OF CLIMATE CHANGE-CHALLENGES TO BE ADDRESSED

23. A series of studies published by the National Meteorological Institute explained that "climate change will lead to extreme weather phenomena in Costa Rica, likely leading to 35% to 75% more rainfall on the Caribbean slope during some months of the year while reducing precipitation by 15% in the northern Pacific and central regions. *"The climate risk, then, differs by region and scenario. It is to be expected that the most vulnerable groups will face serious problems in handling extreme weather impacts."* (PNUD, 2012)

Table 5: Climate Risk Scenario for Costa Rica

Region	Risks
Central Region	Prolonged dry periods and high daytime temperatures put at risk the most populated cantons with low human development index (HDIs) and dependent groups. Water resources are being pressured by the change in the natural water supply and growing demand. High risk of urban flooding, even without extremes of rainfall.
Chorotega Region	The Chorotega Region has the most dependent population, with high water needs that require to be addressed. Higher daytime temperatures along with the driest months of the year put dependent vulnerable groups at risk (children and senior citizens), due to high population density. Water resources are under pressure along with agricultural sectors of traditional products in Costa Rica.

Central Pacific Region	The region is at risk due to extended droughts or severe dry periods and their low HDI.
Brunca Region	The cantons could be impacted by droughts and high daytime and nighttime temperatures during drought periods, putting low HDI and citizens groups at risk.
Huetar Atlantica Region	All the cantons have low HDIs. During several months the region is at risk of facing frequency of flooding, putting at risk the entire population. Reduced seasonal rainfall, along with reduced cold front activity, could diminish the water supply.
Huetar Norte Region	The border cantons have low HDIs that make their population vulnerable in extreme events. Moreover, border cantons have high risk of being impacted by more frequent droughts with limited response capacity to extreme rainy events. It is also expected prolonged dry periods affecting poor cantons with low HDIs such as the border cantons.

24. As a result of these climate changes, the following productive sectors selected for the proposal will experience changes and, in most regions, increased vulnerability. They are described as follows:

- Agriculture[4]:
    - Under current climate change scenarios it is urgent to avoid crop yield reductions and to maintain agricultural productivity in order to keep the current trends in food production. “This, coupled with large-scale land, soil, and water degradation, will challenge the long-term and sustainable production of agricultural resources that promote food security and sustainable livelihoods. Traditional mechanisms, including conventional agroecosystem management practices, are not economically feasible and long-term sustainable adaptation strategies, especially for those communities already experiencing food security related issues.” (Oelbermann & E. Smith, 2010).
    - Changes in climate may alter the nutritional quality of crops, which may require changes in the composition and application rate of inorganic fertilizers and use of mineral supplements in livestock.
    - The demand of water for irrigation is a critical element to maintain important crops along the country. This will be important for Costa Rica’s food security agenda.
    - Implementation, improvement and refinement of sustainable land management practices. Sustainable agro ecosystem land management practices including the

[4] For the purpose of the proposed programme, “agriculture” is defined as the practice of farming, including cultivation of the soil for crops and the rearing of animals to provide food, wool or other products.

establishment of seed banks for the long-term storage of agricultural seeds, improved livestock forage quality, and agroforestry practices are crucial.

- Coastal and water resources
    - Increased temperatures and rising ocean levels will negatively affect mangroves and coral reefs, which serve as protective barriers to coastal communities. Mangroves and coral reefs are also crucial habitats for marine life – commercially important fish species reproduce and grow in mangroves, and reefs are hotspots of marine biodiversity.
    - Small-scale fishermen in vulnerable coastal communities depend on local fisheries, which need reefs and mangroves to regenerate populations to feed their families.
    - Increase in demand and the potential reduction of supply due to climatic change, together with the effects of extreme climatic events, places the coastal and water resources of the country in a state of high vulnerability.

Table 6 Priority per region based on social, economic and environmental vulnerability

PRIORITY	Current Vulnerability	Future Vulnerability	Biodiversity	Significant Agricultural Areas	Energy-producing Areas	Vulnerable Coastal Areas	Poverty	Population	HDI
Chorotega Region									
Guanacaste Province: Liberia, Nicoya, Santa Cruz. Bagaces, Carrillo, Cañas, Abangares, Tilarán, Nandayure, La Cruz, Hojancha. Alajuela Province: Upala.	High	High	Medium	Rice- Beans-Corn	Arenal, Corobicí, Sandillal,	High: Nicoya, La cruz Medium-high: Liberia, Carrillo, Santa Cruz, Hojancha, Nandajure	31.6	7,6	Medium-high
Central Region									
San Jose Province: San José, Escazú, Desamparados, Puriscal, Aserrí, Mora, Tarrazú, Goicoechea, Santa Ana, Alajuelita, Vásquez de Coronado, Acosta, Moravia, Tibás, Montes de Oca, Dota, Curridabat, León Cortés, Turrubares. Alajuela Province: Alajuela (except Sarapiquí), San Ramón (except San Isidro de Peñas Blancas), Grecia (except Río Cuarto), Atenas, Naranjo, Palmares, Poás, Zarcero, Valverde Vega. Cartago Province: Cartago, Paraíso, La Unión, Jiménez, Turrialba, Alvarado, Oreamuno, El Guarco. Heredia Province: Heredia, Barva, Santo Domingo, Santa Bárbara, San Rafael, San Isidro, Belén, Flores, San Pablo.	Medium-low	Medium-high	Low	Coffee - vegetables - sugar cane	La Garita, Rio Macho, Cachí, Alberto Echandi, Toro I, Angostura, Peñas Blancas	No coastlines	17.7	63,90%	Medium-high
Huetar Atlántica Region									
Limón Province: Limón, Pococí, Siquirres, Talamanca, Matina and Guácimo. Heredia Province: Horquetas in the district of Sarapiquí.	Medium-high	Medium-high	High	Banana	No main power plants	High: Siquirres Medium-high: Limón, Pococí, Siquirres, Talamanca and Matina	29.3	10,3	Low
Central Pacific Region									
Puntarenas Province: Puntarenas, Esparza, Montes de Oro, Aguirre, Parrita and Garabito. Alajuela Province: San Mateo and Orotina	Medium-high	Medium-high	Medium-high	Quite insignificant agricultural production	No main power plants	High: Parrita Medium-high: Puntarenas Province: Puntarenas, Aguirre, Esparza, and Garabito.	23.6	5,3	Medium-high
Brunca Region									
San Jose Province: Pérez Zeledón. Puntarenas Province: Buenos Aires, Osa, Golfito, Coto Brus and Corredores.	High	Medium	High	Rice - Beans - Corn - Banana	No main power plants	High: Osa Medium-high: Golfito	32.7	7,5	Medium-low
Huetar Norte Region									
Alajuela Province: San Carlos, Los Chiles, Guatuso, Sarapiquí in the district of Alajuela, Río Cuarto in the district of Grecia, San Isidro de Peñas Blancas in the district of San Ramón. Heredia Province: Puerto Viejo and La Virgen, in the district of Sarapiquí	High	Medium-low	High	Rice - Beans - Corn	Toro II	No coastlines	27.8	5,5	Low
Source:	IMN[5]	IMN[3]	CATHALAC[6]	MAG[7]		IMN[8]	INEC[9]	INEC[7]	HDI[10]

Source: Own Creation.

[5] According to the *Instituto Meteorológico Nacional* (National Meteorological Service), 2011
[6] Based on the Report-"Possible Impacts of Climate Change in Biodiversity"
[7] According to Regional Statistics made by MIDEPLAN and MAG.
[8] According to the *Instituto Meteorológico Nacional* (National Meteorological Service), 2011
[9] According to the *Instituto Nacional de Estadística y Censos* –INEC (National Institute of Statistics and Census)
[10] According to the *Human Development Index*-2011 Report

2. Adaptation

25. Currently the country has worked hard on mitigation efforts (e.g., carbon neutral commitment for 2021[11]), but this goal has to go hand in hand with a vision of low-carbon development and adaptation to climate change impacts.

26. Due to current impacts and forecasts of possible effects of Climate Change in the country, the adaptation approach has been internalized by governmental and non-governmental institutions in order to guide joint efforts. *"Adaptation is a strategic agenda for the country, as diverse studies show that the impacts of extreme hydrometeorological phenomena annually range between 0.5% and 1.5% from the GDP"* (MINAET/EPYPSA, 2012). Based on the aforementioned observation, Fundecooperación, conformed by a Board of Directors that represents all the sectors of society, has led significant efforts to achieve, through public-private partnerships, the implementation of programs that have both global-national importance and great impact at the local level. It is worth noting this is a crucial condition for the implementation of the proposed programme.

27. Since Climate Change has somehow affected the entire country –a country with only 51,000 km^2, specific adaptation measures are needed by prioritizing by problematic (e.g. water resources) rather than by geographical area.

[11] http://www.minae.go.cr/index.php/actualidad/anuncios/54-cneutral

2.1 Intervention Component: Agriculture

Component name: Increasing the adaptation capacity to climate change in the agricultural sector[12]

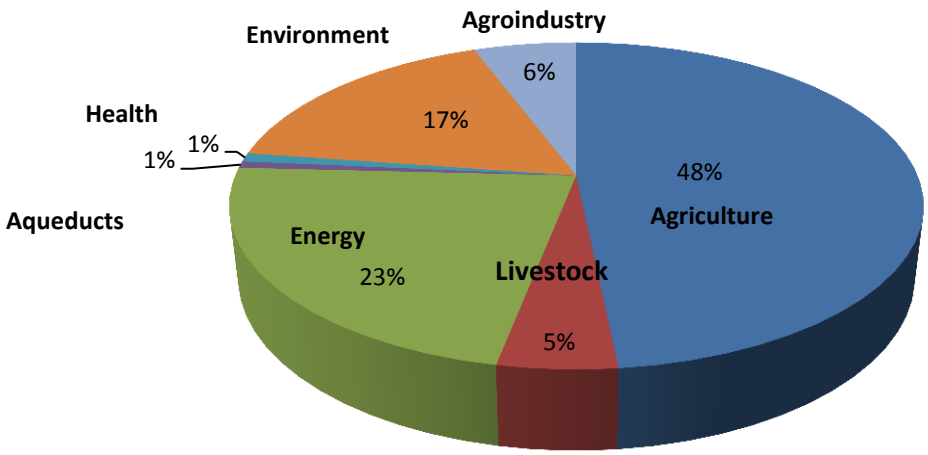
28. As established by the *Agenda Agroalimentaria, Cambio Climático y Carbono Neutralidad en el sector Agroalimentario de Costa Rica* (Agenda on Food and Agriculture, Climate Change and Carbon Neutrality in the Food and Agriculture Sector in Costa Rica 2010-2021) pests and diseases, direct threats to biodiversity and the modification of meteorological conditions such as atmospheric temperature, humidity, rainfall, winds and atmospheric pressure, are all consequences of global changes that affect the weather and everything directly related to it. (Ministerio de Agricultura y Ganadería, 2011) Regarding the effects of hydrometeorological conditions and their fluctuations in Costa Rica, it is important to mention the following:

    > *"In approximately 1,302,053 hectares (25%) of the national territory, there are projections of reductions of more than 1000mm a year in rainfall. When comparing these areas with the crop areas sensitive to the availability of rain water, 133,011 hectares of vulnerable agricultural use have been identified."* (GFA Consulting Group S.A. , 2010)

29. These atmospheric phenomena, which are difficult to forecast and control in the agricultural sector, represent losses in times of drought. Likewise, there can be losses due to the extreme increase in rainfall, thus causing flooding and loss of soil.

[12] As previously defined, the agricultural sector encompasses the cultivation of soil as well as the rearing of animals (livestock) for food production or other products (e.g. wool).

Figure 13 Costa Rica: Percentage Distribution of Losses per Sector due to Droughts (1993-94, 1997-98, 2001-2002, and 2009-2010)



Source: Flores Verdejo, R. (2012). *Technical Forum: Gestión de Riesgos Asociados con el Cambio Climático.* San José, Costa Rica: MAG-MIDEPLAN.

30. The agricultural sector is a highly important sector for the country since it covers economic, social, commercial, environmental and cultural activities. Moreover, it includes key fields for the development such as food safety, foreign trade and environmentally sustainable production. *In 2010, the added agricultural value was 1,241,469,000,000 colones* (US $2.458.354.455,45), *which represented 7.1% of the GDP. During that year, the value added for agribusiness was 1,161,594,000.000 colones* (US $ 2.300.186,14) *or 6.7% of the GDP. Therefore, the food and agricultural added value (agricultural plus agribusiness) corresponded to 13.8% of the PIB* (SEPSA, 2012)

31. The sector has been consolidated as one of the key drivers for the country's economic growth and social progress. Therefore, it should be mentioned that, regarding trading, Costa Rica is a clear agricultural exporting country, the commercial balance of this sector keeps a surplus condition – balance that reached US$1964.9 millions in 2010 (Ministerio de Agricultura y Ganadería, 2011)

32. When referring to the Costa Rican workforce, the agricultural sector is the second sector with the largest number of employed workers, with 14.1% active workers coming from activities such as agriculture, livestock, and fishing (SEPSA, 2012, pág. 171). Additionally, "*it is estimated that about 100,000 Costa Rican families directly depend on family agricultural system.*" (MAG-Fundecooperación- ACICAFOC- INTA, 2012) By having that number of people employed and dependent families, it is crucial to implement measures and actions aiming at promoting the sector's activities, while mitigating the causes that directly or indirectly affect it. It is highly important to count on risk management and mitigation plans in order to increase resilience related to the effects of natural disasters.

Table 7 Population Employed according to the Type of Activity. 2009-2011. (In number of people)

Rama de actividad 1/	2009	2010	2011	Variación % 2011/2010	Participación % 2011
Comercio y reparación	358.436	347.768	378.843	8,9	19,0
Agricultura, ganadería y pesca	281.070	285.076	280.301	-1,7	14,1
Industrias manufactureras /2	221.050	229.865	234.945	2,2	11,8
Hogares con servicios doméstico	131.371	135.512	150.084	10,8	7,5
Actividades inmobiliarias y empresariales	127.887	127.421	136.919	7,5	6,9
Enseñanza	119.846	126.942	118.289	-6,8	5,9
Transporte, almacenamiento y comunicación	122.636	119.346	129.994	8,9	6,5
Construcción	116.140	104.584	123.777	18,4	6,2
Hoteles y restaurantes	95.958	96.328	86.137	-10,6	4,3
Administración pública	90.907	92.823	110.484	19,0	5,6
Servicios comunitarios y personales	66.523	69.604	75.883	9,0	3,8
Salud y atención social	71.866	63.953	70.077	9,6	3,5
Intermediación financiera	37.531	48.979	50.035	2,2	2,5
Electricidad, gas y agua	27.852	35.675	33.216	-6,9	1,7
No bien especificadas	8.035	16.138	6.409	-60,3	0,3
Organizaciones extraterritoriales	1.950	2.150	2.656	23,5	0,1
Minas y canteras			1.481		0,1
Total Población Ocupada	**1.879.058**	**1.902.164**	**1.989.530**	**4,6**	**1,0**

1/ Según Clasificación Industrial Internacional Uniforme de actividades económicas (CIIU - 3)

2/ Incluye minas y canteras

Source: *Secretaría Ejecutiva de Planificación Sectorial Agropecuaria* – SEPSA (Executive Secretariat of Agricultural Sectorial Planning), 2012.

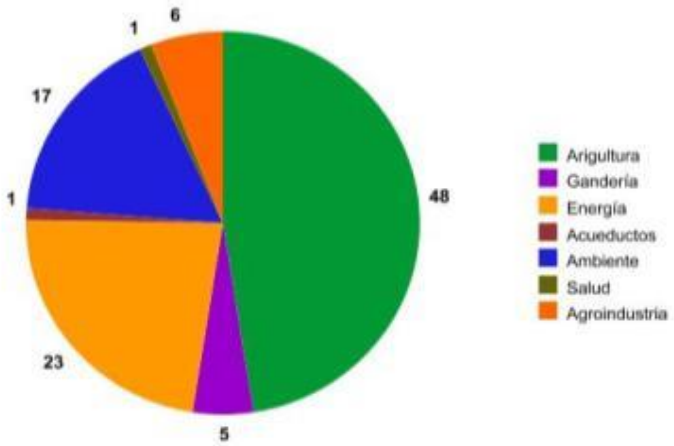
33. Agriculture is distributed according to the properties and purpose of each type of soil. For example, it is possible to find the production of staple grains in the Chorotega Region in the west of the country, Huetar Norte Region in the north of the country, and the Brunca Region in the southeast of the country. Moreover, in the east – in the Atlantic Region, the crop that prevails over the others is the banana crop as export fruit. On the other hand, the Central Valley, which is located at higher altitude than the regions mentioned above, has a type of soil dedicated to the industrial production of agriculture such as coffee plantations.

(SEPSA, 2012) The national territory is divided in different agricultural practices depending on the richness of the soil and the different minerals that compose it, the climate differences and the culture of each region.

34. Based on this, when referring to the decrease of rainfall, the Chorotega Region is considered as the region most exposed to climate risk related to droughts. (Ministerio de Ambiente y Energía e Instituto Meteorológico Nacional, 2012). It is important to emphasize that in the case of the Chorotega Region, the high probability of experiencing drought periods as a result of climate change increases the risk of experiencing losses in crops of staple grains. This region assigns its soils to the production of more than 18 crop types including rice, sugar cane, beans, etc. Therefore, the region plays an important role in supporting the country's Food Safety, while contributing to the employment in the agricultural sector.

35. In order to consider different situations that trigger the adverse effects of climate change, below is a chart obtained from the *Foro Técnico de Gestión de Riesgos Asociados con el Cambio Climático del Convenio MAG-MIDEPLAN* (Technical Forum on Management of Risks related to Climate Change from the MAG-MIDEPLAN Agreement), where it is possible to estimate the percentage of losses per sector due to drought phenomena:

Figure 14: Percentage Distribution of Losses per Sector due to Droughts (1993- 94, 1997-98, 2001-2002, and 2009-2010)



Source: Roberto Flores Verdejo (2012) Foro técnico: Gestión de riesgos asociados con el Cambio Climático. San José. Costa Rica. MAG-

36. Figure 14 shows that the most affected sectors are the agricultural, energy and environmental sectors. In each of those cases, drought constitutes the main risk factor. On the other hand, regarding risks due to extreme rainfall and flooding, it is important to highlight that the regions indicated in Figure 14, at most risk of experiencing losses due to these types of phenomena, all have a significant level of agricultural activity for the country. In the Huetar Norte Region, staple grains are cultivated, while export products such as bananas are cultivated in the Huetar Atlántica Region. Therefore, it is possible to estimate that the negative effects of extreme rainfall and flooding will not only affect the work of farmers, but they will also affect the commercial balance due to potential decreases in export products, while representing a threat to food safety.

37. This leads to a key discussion when covering the topic of agriculture: food and nutritional security. As presented by Barahona (2011) in the publication called *Cambio Climático y Seguridad Alimentaria: Ejes Transversales de las Políticas Agrícolas* (Climate Change and Food Safety: Cross-cutting Themes of Agricultural Policies), there are different principles that must be combine in order to fully promote food safety, including: availability, access, and use of food, as well as the stability of access to food. At the same time, these four conditions depend on two factors directly related to the effects of climate change.

38. *"Complying with the principles of food and nutritional security has been complicated due to the limitation of food supply as a consequence of climate change in crops –mainly due to flooding, drought, fires and changes in temperature that affect crops and decrease the quality and security of food supply. Besides, another aspect to take into account is the decrease in purchasing power to obtain foods. The costs for facing natural phenomena and the replacement of affected crops limit the capital destined to improving the productive capacities and decrease the consumption as a result of the increase in the prices of food as a measure to counteract losses." (Barahona, 2011)*

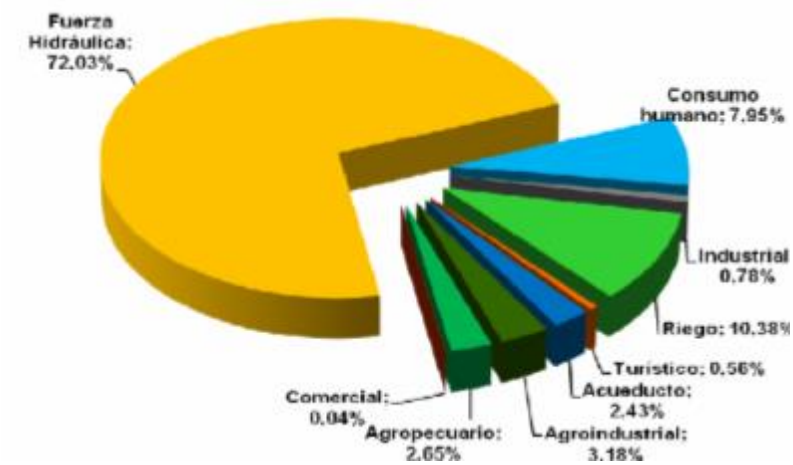
39. Several factors prove the relevance and importance of the agricultural sector in Costa Rica: the economic value – based on the value of the production and income at a national level;

the labour force – with the number of workers and families that depend on this income; the social and nutritional field –Costa Rican food safety; and the environmental pertinence – due to the relevance of the environment where the agricultural production is developed and the adverse effects of climate change that threaten it.

2.2 Intervention Component: Water Resource-Coastlines

40. In order to fully illustrate the importance of this resource, the following graph illustrates the uses of the water flow in Costa Rica.
41. **Component name: Improving water resources management in order to increase resilience in coastal communities that are more vulnerable to climate change**

Figure 15: Percentage Distribution of Uses for water flow granted under concession at a national level.

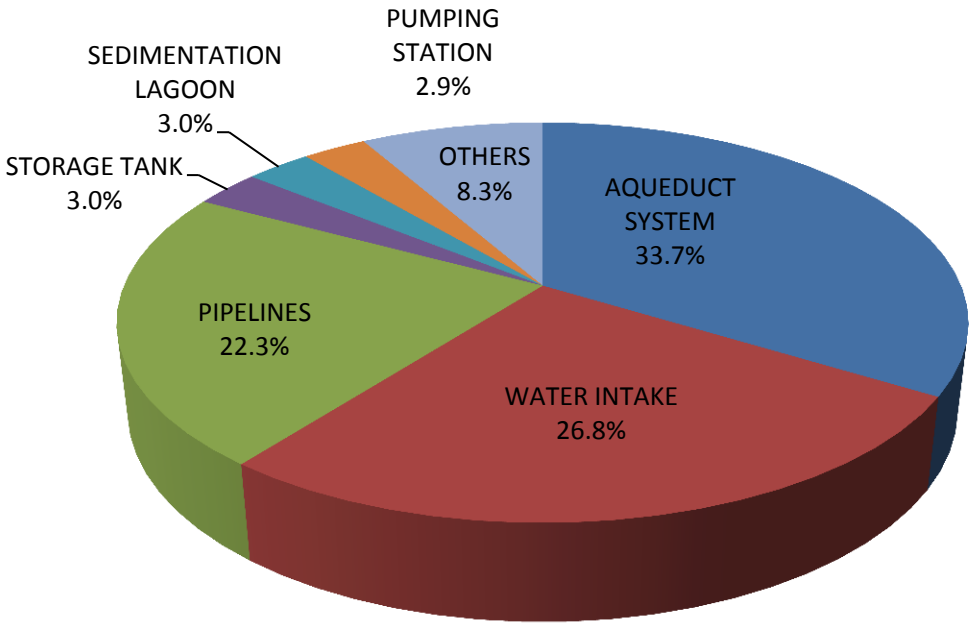


Source: Water Department from MINAE. Created by H. Zúñiga and Y. Astorga.

42. Based on Figure 15, it can be affirmed that the water within the Costa Rican territory is destined to fulfill established needs. Therefore, due to the negative effects resulting from climate change, the disproportionate decrease or increase of the water flow may generate economic losses, health problems and/or shortage of hydroelectric power. Moreover, the

impacts will also be reflected in the use of water resources for irrigation, aqueducts and sewage systems.

Figure 16: Losses caused by Hydrometeorological Events in the Aqueducts and Sewage System Sector at National Level, per Component.



Note: The category defined as "Others" includes: Purification plant, Treatment plant, Distribution lines, Wells, Headrace pipelines, Sewage Systems, Sand remover, and Submersible pump

Source: Flores Verdejo, R. (2012). *Technical Forum: Gestión de Riesgos Asociados con el Cambio Climático.* San José, Costa Rica: MAG-MIDEPLAN.

***Water Resources Management:**

43. Despite the fact that the availability of water is not currently a problem, the needs of the population for the supply of clean and safe water are not fully fulfilled due to the lack of comprehensive water management policies. Due to this problem, the Food and Agriculture Organization (FAO) created a methodology that estimates the availability of water resources according to the total renewable resource. "*Costa Rica moved from a water capital of 27,932m3 per year per capita in 2000 to 26,450 m3 per year per capita in 2005. From those, 67% is surface waters and 33% is groundwater*." (Ministerio de Ambiente, Energía y Telecomunicaciones, 2008, pág. 5) This data represents a latent problem regarding the decrease in the availability of water resources, which leads to negative effects in the sectors that depend on water resources.

44. Within this context, it is important to emphasize that the ASADAS (Managing Associations for Community Aqueducts) have a significant role in their territory:

45. *"(…) the service they render impacts a series of conditions that make them key organizations to succeed in the comprehensive and sustainable development of the areas where they belong, with a direct impact on the inhabitants' health, on the socioeconomic development of the area, on the development of tourism and on the comprehensive management of water resources and the environment."* (*Instituto Costarricense de Acueductos y Alcantarillados* (Costa Rican Institute for Aqueducts and Sewage Systems), 2012, Sizing of ZMT)

46. A study made by *AyA* in October 2012 assessed the management of the ASADAS in the *Zona Marítimo Costera del Litoral Pacífico* (Pacific Coastal-Maritime Zone). The methodology allowed indicating the category for which the management of each ASADA can be placed at the technical, environmental and administrative levels. Among the categories, we can find the three following: A) Consolidated, B) Developing and C) Weak. Based on the results obtained, none of them ranked better than Category C) Weak. Therefore, it can be concluded that the water resource management is deficient.

47. Some variations have been also registered in rainfall per region. This is directly related to the previously mentioned water availability problem. Each region in the country has suffered differently due to different changes in water availability, as it can be observed in the following reference:

48. "The intensity of droughts is greater in the north and the northeast of the country –in the border area with Nicaragua and near the Lake. Reductions exceed 32% per year. The Tempisque lowlands and plains (Guanacaste pampa) is the second area regarding the intensity of droughts. A third area to take into account is located in the rest of the North Pacific, Central Pacific and the Caribbean to the south where average reductions are about 28%. In the Central Valley and the North and Caribbean lowlands, average reductions of 25% may occur, which are considered as extreme events. The rest of the country, especially in the

mountain areas, the reductions are lower (22%). The lowest average reductions during drought periods occur towards El General Valley and the entire depression of Térraba River." (Ministerio de Ambiente, Energía y Telecomunicaciones, 2008, págs. 50-51)

49. Regarding the aforementioned quote, it is important to mention the presence of this phenomenon in the country, despite the regional variability. Although the rainfall reduction vary in terms of percentage, in most regions the effect of this reduction is significant when taking into account the economic activities that are developed there. Therefore, it is required to emphasize the importance of consolidating a comprehensive management of water resources.

Coastlines and fishing areas

50. Costa Rican coastlines cover more than 1,100 km along the Pacific Ocean and 200 km along the Caribbean Sea. Under the future climate trends, according to reports and observations from the *Instituto Meteorológico Nacional* (IMN) and the International Ocean Institute –a world organization that has an office at the National University of Costa Rica, in this century the ocean levels may progressively increase until they reach more than one meter of their current level.

51. *"In Puntarenas –with a one-meter elevation, the water in high tides would break into the shores about 500 meters in average, and will flood about 300 hectares that are currently dry. In the most optimistic scenario, the increase of waters would be 30 centimeters. This would affect 105 hectares and 60% of the current residential sector in this port would be under water."*

52. Coastal communities greatly depend on fishing and tourism. Therefore, the future elevation of the sea level threatens the long-term sustainability of these populations. Table 7 also illustrates the importance of fisheries areas in terms of labor force along with agriculture, around 14% of GDP.

Figure 17 Image of Puntarenas: scenario a 2010 - 2100

Source: IMN, 2005

53. Another important example of climate change impact has been in Damas Islands: *"fifthy years of geomorphologic change in Damas Island, Quepos, Costa Rica, were studied from a photographic record that is available since 1947. Coastal dynamics were accelerated by the El Niño Phenomenon in 1997, which was simultaneous with the August-September astronomical tide, one of the highest in the 4-5 year cycle. Additionally, waves with high energy were present in some periods during these months. Processes were enough to break the island in two blocks and to initialize erosion and transport sediment that continues to date. The frequency of tropical storms and the wave energy will be greater in the next years, thus increasing sediment instability processes in several locations of the island. Two topographic profiles have shown that the island is not in equilibrium and that adding all the possible mareographic components it will be prone to continued erosion. The marine habitats around the island should be changing because the fresh and salt water input has been modified, especially because of the alteration in the Parrita and Paquita hydrological river basins, and its effects on the sediments."*

54. As a conclusion, it is important to highlight the importance of the water resource in Costa Rica as a driving force of development in different significant sectors. For the society, its importance lies in its contribution to health and the consumption of drinking water, among others. For the environmental sector, it gives life to dependent ecosystems; in the agricultural sector, it provides irrigation to crops; and in the energy sector, an important part of the electricity make-up in from hydropower (80%).

55. Each social sector is directly affected by the extreme alterations of rainfall as a result of climate change. This and the variations of temperature affects the most fragile activities such as agriculture and therefore, it directly affect the country's food and nutritional safety. Likewise, the lack of production impacts the economic income of producing families, which is reflected in a country's economy. Additionally, the amount of crops or the poor quality of export crops affects the business relationships.

56. On the other hand, negative effects of climate change directly affects daily activities. Since Costa Rica is a country that highly depends on hydropower to generate electricity, the alterations in the amount of water available may lead to continuous blackouts. Moreover, the population's health and basic needs are directly related to the access to this resource; therefore, the wellbeing of several people depends on the water resource availability, both quality and quantity.

57. Within the framework described above and, based on the guidelines of the *Estrategia Nacional de Cambio Climático* (National Strategy on Climate Change), the programme proposal aims at solving the climate change related issues with a national approach that requires a strong action, participation, and ownership of the different participants and sectors of the country. Fundecooperacion has the right focus (as illustrated by its Board members) and experience to link community-based experience to local, national and policy-making level.

58. In a nutshell, Fundecooperacion's approach is the following: all the initiatives funded and promoted must directly benefit the target population and improve their economic, environmental, social and gender conditions. The implemented initiatives must contribute as much as possible to alleviating and eliminating the poverty that persists in the country, especially in rural areas. In this sense, the programme was structured according to three main aspects: economic growth, social progress, and environmental protection to reach a better quality of life for Costa Ricans.

59. The main strategies and approaches of the programme consist in the following:

- The programme will focus on the most vulnerable population to promote its capacity and participation. Technologies, methodologies, and tools that can be applied to other small-sized producers and beneficiaries, regions and sectors will be developed, assessed and validated through the programme as a mean to reduce vulnerability and increase the national resilience in the medium and long term.

- The intervention will be focused on communities (bottom-up approach) in order to have a meaningful impact on the territory and be able to fulfill the needs and actions identified at the local level.

- A comprehensive and sustainable management of available resources (biodiversity of soil, water, coastal and agriculture areas) is promoted within an adaptation approach that looks, among others, for a climatically intelligent agriculture, improvements in the use of water services, resilience of coastal areas, and that is able of promoting innovation and knowledge management, learning from experience, exchanging knowledge, and guiding the transformation and replicable process.

- Capacity building activities will be focused on strategic local needs for building resilience to climate change, including adaptation measures and best practices, management, organization capacity, and innovative ways to communicate and address climate hazards.

- The programme will be an integral part of the *Plan de Acción de la Estrategia Nacional de Cambio Climático* (Action Plan for the National Strategy on Climate Change) approved in 2012, and it will be governed by the general acting principles that improve sustainable development, awareness, equity, participation and consultation. Lessons learned will be used for feedback and improvement opportunities to strengthen the National Strategy and its Action Plan.

Project / Programme Objectives:

List the main objectives of the project/programme.

Support the development of Costa Ricas's adaptation capacity in line with the *Plan Nacional de Acción de la Estrategia Nacional de Cambio Climático* (National Action Plan of the National Strategy on Climate Change)

General Objective:

- Reduce the vulnerability and improve the resilience of the local populations, by focusing on critical sectors (agriculture, water resources and coastal zones) in order to reduce the negative impacts of climate change,

The three components of the programme are defined as follows:

1. Increasing the adaptation capacity to climate change in the agricultural sector (including agriculture and livestock).
2. Improving water resources management in order to increase resilience in coastal communities that are more vulnerable to climate change.
3. Improving the capacity of communities, producers, institutions, and other relevant stakeholders regarding adaptation to climate change.

Project / Programme Components and Financing:

Fill in the table presenting the relationships among project components, activities, expected concrete outputs, and the corresponding budgets. If necessary, please refer to the attached instructions for a detailed description of each term.
For the case of a programme, individual components are likely to refer to specific sub-sets of stakeholders, regions and/or sectors that can be addressed through a set of well defined interventions / projects.

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
1. Component 1: Agriculture Sector Objective: Increasing the adaptation capacity to climate change in the agricultural sector (including agriculture and livestock)	1.1. A variety of technical options and methods resilient to the effects of Climate Change -developed, validated, and implemented in the agricultural sector according to the area. 1.2. Technical financial support promoted for adopting technical options generated in local communities.	Strengthened farming productivity in response to climate change, in order to reduce loss of soil and improve water management.	3
2. Component 2: Coastal Zones – Water Resource Sector Objective: Improving water resources management in order to increase resilience in coastal communities that are more vulnerable to climate change.	2.1 Developed and implemented Water Safety Plans 2.2 Efficient and effective comprehensive water resource management 2.3 Comprehensive management in the coastal area established and on-going	The availability of water resources for human consumption is preserved and the vulnerability of coastal communities is reduced through the participation of communities in protecting critical ecosystems (For example: mangroves, watersheds and coastal areas).	3,4
3. Component 3: Capacities Objective: Improving the capacity of communities, producers, institutions, and stakeholders regarding adaptation to Climate Change.	3.1 Improved community preparation through the development and consolidation of early warning, risk reduction systems and/or protocols for agriculture, water resources, and coastal areas in regards to climate change	3. Communities, producers, institution and stakeholders improve capacities regarding adaptation to climate change by developing and improving the information, awareness and abilities about related socioeconomic and environmental risks	1,9
6. Project/Programme Execution cost			0.86
7. Total Project/Programme Cost			9.22
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			0.75
Amount of Financing Requested			9.97

PROJECTED CALENDAR:

Indicate the dates of the following milestones for the proposed project/programme

Milestones	Expected Dates
Start of Project/Programme Implementation	March 2015
Mid-term Review (if planned)	September 2017
Project/Programme Closing	March 2020
Terminal Evaluation	September 2020

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Describe the project / programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.

60. The programme aims at increasing resilience and adaptation of the most vulnerable sectors of the country: agricultural sector (component 1), water sector and coastal sector (component 2) by implementing adaptation measures in selected communities –previously determined by the *Instituto Meteorológico Nacional* [IMN] (National Weather Institute) as areas of great climate stress.

61. Moreover, the programme has a third component that covers topics regarding capacity building, awareness, local training, as well as knowledge and information management, in order to collect and share the lessons learned in each selected sector, and share that knowledge with other sectors, communities and countries facing the same climate threats and to facilitate information to strengthen national strategy and policies on climate change adaptation. This component is deemed required for guaranteeing the programme sustainability beyond the programme funding.

62. This program will seek to increase climate resilience by working directly with local stakeholders and anticipated beneficiaries through the implementation of specific projects in each of the geographical areas selected. The Programme Screening

Methodology, presented in Annex I, ensures that the projects within each sub-component (or activity) of all three component will involve actions and technical options that are commensurate in overcoming the climate impacts in the specific areas of intervention. The screening methodology was applied for each project, on a case-by-case basis, which provided the required rigor and depth of analysis in order to make sure that the technical options are appropriate, efficient and feasible with regards to the adaptation needs and the climate risks specific to the local context. Specifically, step #3 of the methodology Phase II (**Adaptation Potential)** consists in the in-depth assessment of the project's potential for the enhancement of climate resilience, which involves an analysis of the actions' appropriateness, based on the local biophysical and socioeconomic context. The application of the screening methodology on a project basis ensures that each and every concrete adaptation action enhances climate resilience in the agricultural sector and on access to clean and safe water.

63. **Investing on Adaptation**: providing comprehensive support to the country's most vulnerable producers, and facilitating the adoption of measures identified in the National Strategic Action Plan on Climate Change. The support will consist on investment in interventions, technical assistance, and training related to this plan.

Components:

64. **Component 1. Increasing the adaptation capacity to climate change in the agricultural sector.**

65. Agriculture: addressed to all micro, small and medium producers located in areas that are highly vulnerable to extreme hydrometeorological events and to gradual climate change effects. This component emphasizes in the importance of local capacity building (authorities, farmer associations, civil society organizations, and the private sector) in climate risk management, through community based adaptation and empowerment of local producers, to increase their capacity to deal effectively with the impacts of climate change.
66. The programme will reduce the climate change effects in agriculture, through the following outcomes:

67. **OUTCOME 1:** Strengthened farming productivity in response to climate change, through the reduction of soil losses and improved water management.

68. Regarding the farming sector, there is a great adaptation potential that allows enhancing the productivity and efficiency in managing the services of productive ecosystems and reducing risks and/or losses. These enhancements will be achieved by implementing activities aimed at generating, sharing and adopting technical options that reduce the vulnerability of productive units and strengthen the response to climate change. The aim is to reduce the vulnerability through sustainable and low-cost production technical options, and their validation at field level. In this way, it is expected that, through the adaptation fund, the adoption of this type of technical options in the selected vulnerable areas is achieved and therefore risks are reduced.

69. **Geographical scope:** Among the selection criteria, one will be based on the project's location. Specifically, the project's location was analyzed based on:

(1) Its relevancy with the proposed outcome. (e.g. is the problematic/risk significant in the region/district/township?)
(2) The location's priority rank at the country level. (e.g. is the proposed location consistent with country vulnerability priorities as shown in Table 8)
(3) An analysis of the adaptation capacity[13]

70. For all the activities included in OUTCOME 1 - Strengthened farming productivity in response to climate change - priority regions have been identified as follows:

[13] An analysis base on the 5 main criteria's established by Wongbusarakum & Loper (2011) y Adger et al. (2004) such as poverty, provision of basic services, aspects of productive activities, access to information and organizational skills.

Table 8 Priority regions for component 1

Component 1					
Priority	**Current Vulnerability**	**Future Vulnerability**	**Agricultural Importance**	**Population**	**HDI**
Central Region	Medium-low	Medium-high	High	High	Medium-high
Huetar Norte Region	High	Medium-high	High	Low	Low
Chorotega Region	High	High	Medium-low	Low	Medium-high
Brunca Region	High	Medium	Medium-low	Low	Medium-low
Huetar Atlántica Region	Medium-high	Medium-high	Medium	Low	Low
Central Pacific Region	Medium-high	Medium-high	Medium-low	Low	Medium-high
Source:	IMN[14]	IMN	MAG[15]	INEC[16]	HDI[17]

71. This is a general prioritization table at the regional level. The smallest communities in the selected geographical regions have high vulnerability conditions, which is not reflected at the regional level.

72. Considering criterion as indicated in Table 8, authorities from the Ministry of Agriculture and the Costa-Rica Institute of Aqueducts and Wastewater Treatment and SENARA – National Service of Groundwater, Irrigation and Drainage, have both identified the Central and Huetar Norte Region has the priority region for the activities included in Component 1.

73. On the one hand, Central Region is one of the most important agricultural hubs in Costa-Rica and it is the first in terms of population density. Hence both the economical and ecological risks associated with climate vulnerability are higher than other regions. On the other hand, Central Region has a lot of small producers, which is aligned with the proposed programme's eligibility criterion #1.1 (see Annex 1). Moreover, Central Region concentrates the vast majority of the products sold on the national market (national diet products), which is aligned with the proposed programme's eligibility criterion #1.2 (see Annex 1).

[14] According to the *Instituto Meteorológico Nacional* (National Meteorological Service), 2011
[15] According to Regional Statistics made by MIDEPLAN and MAG.
[16] According to the *Instituto Nacional de Estadística y Censos* –INEC (National Institute of Statistics and Census)
[17] According to the Human Development Index-2011 Report

74. Within the selected region, an even more specific geographical scope (e.g. cantons, communities) was selected with the Ministry of Agriculture and the Costa-Rica Institute of Aqueducts and Wastewater Treatment, in order to prioritize and to target as much as possible the interventions needed.

75. The Huetar Norte Region, specifically Upala, Los Chiles, Guatuso and other low-income borderline communities, was selected as a priority area, as it comprises a lot of small producers, which is aligned with the proposed programme's eligibility criterion #1.1 (see Annex 1) and other of the criterion mentioned.

76. **OUTPUT 1.1.: A variety of technical options and methods resilient to the effects of climate change are developed, validated, and implemented in the agricultural sector according to the area.** The reduction of the risk of the sector to the impacts of climate change at local level is required: through a greater adaptation of productive systems and a reduction of their sensitivity to climate changes, including a lower impact on the system, with better recovery capacity after impacts. At the same time, both actions should be translated into less variability in production, specifically regarding losses due to climate variations, except catastrophic events such as hurricanes, and others. Due to the differences in the selected areas, it is important to assess and validate the technical options for each area in the country considered as vulnerable. Among the activities, we find the following and the description of how those activities link with or contribute to address climate resilience issues.

1.1.1. Implementation of new Agro-ecological zoning (ZAE) scenarios in the selected communities according to vulnerability

77. **Contribution to climate resilience:** In Costa-Rica, the agricultural zones have been historically selected based on various criteria that were not directly related to climate resilience. Examples of existing criteria include the land productivity, the availability of the land area as well as the topography. Other criteria such as the areas under water stress, the crop suitability (actual, future projection) or climate risks analysis have typically never been taken into account in the selection of agricultural zones.

78. The integration of climate vulnerability as a criterion to define new agro-ecological zoning scenarios will contribute to building resilience to current climate variability or future climate change scenarios, as the land-use planning will be based on the available vulnerability indicators. The climate vulnerability diagnostic per zone will allow the zone modification or displacement of land-use activities, primarily in the most exposed agricultural zones. Currently, the country does not have agricultural zone up to date. The last one was done in the 1980´s on a scale of 1:200.000, which is obsolete as such large scale does not allow to focus on specific adaptation actions. This programme intends to develop the agro-ecological zoning (ZAE) of the Central Region on a 1:50.000 scale. Such zoning will be useful to the farmer since it will provide more specific information on climate risks and land limitations. Its application is a process in which producers, organizations, researchers and technology providers have to consider its result in the decision making process.

79. **How the proposed activity is designed to be commensurate in overcoming the climate impacts in the areas of intervention, in the context of climate change in Costa Rica:** Climate impacts in agriculture highly depends on the land location and its exposure to climate variability. The climate impacts are directly proportional to the land exposure to climate risks. The integration of climate data into land-use planning will allow minimizing the exposure of agriculture activities to climate variability, thereby enhancing the sector's climate resilience. As a result of such planning, agriculture activities located in the selected areas could be displaced in less exposed zones. Appropriate climate indicators and statistics are going to be used in order to support the decision-making process, thus ensuring a commensurate response in overcoming the climate impacts in the areas of intervention.

80. In order to ensure its effective implementation and use, this ZAE has to be complemented with capacity building for technicians and producers, including the technological options that allow the production systems to adapt and be more resilient. For this, digital databases including information such as land, land use capacity, sun light exposure, etc. will generate different scenarios of ZAE for the most important crops of the areas selected, which are coffee, sugar cane, vegetables and

fruits. Four technological showcases will be implemented in order to train technicians and producers on how to use ZAE, as well as to demonstrate the practices and technologies that can be adapted to improve their lands' capacity and its sustainability.

1.1.2. Identification of farming technical options that can be adapted or implemented in order to enhance the resilience to Climate Change (droughts, heat, intensive rain, plagues, and others) and validation of technical options by areas.

81. **Contribution to climate resilience:** Even if activity 1.1.1 will contribute to reduce the exposition to climate variation by integrating the climate vulnerability in the criteria applied to define the farming zones, some zones will certainly remain partly exposed due to the intrinsic climate risk profile of the country. This residual risk can be further mitigated through the identification of new technical options (measures), based on their potential to enhance climate resilience. Before implementation (activity 1.1.3), those measures will be validated based on their pertinence and appropriateness at the local level.

82. The technical options for adaptation first includes understanding the patterns of variability of current and projected climate and seasonal forecasts, an analysis of each technical option in order to avoid maladaptation, but it also implies the implementation of hazard impact mitigation methods, land-use planning, risk management and the use of resource management tools. Indicative examples of technical options (methods and tools) that enhance resilience to climate variability are include in the following table, including the detailed explanation of how it enhances climate resilience.

Table 9 Technical options in agriculture and how it enhances climate resilience

Technical options	How it enhances climate resilience
Weather-based yield index for crop insurance	Weather-based index allows for the integration of climate risk into the insurance schemes, which contributes to enhance the farmers' response capacity in case of extreme weather event. Therefore, adaptation efforts will mean money savings for farmers when paying for insurance.
Length of growing season (actual, future projection)	The development of modeling tools including projections of future

	growing trends versus actual will allow the farmers to foresee the climate variability on the long-term, which will facilitate the transition and adaptation to the new biophysical conditions.
Crop intensification	Sustainable agricultural intensification approaches can build climate resilience through managing competing land-use systems, while at the same time reducing poverty, enhancing biodiversity, increasing yields and lowering greenhouse gas emissions.
Water use efficiency	More efficient use of existing water supplies can delay the need for new additional water supply options in case of extreme climate event, and minimize the environmental impacts and costs associated with developing new supplies.
Enhancing agro-biodiversity through diversification of production	There is abundant scientific literature that demonstrates agrobiodiversity has an important role to play in ensuring the adaptation needed to maintain production. A concrete example is the search and exchange of drought-resistant seeds and other abiotic stress-tolerant crop varieties. Enhanced biodiversity may be achieved through integrated farming, which links all aspects of the farm - for example utilizing manures as fertilizer, poultry use in weeding and pest removal, fish to fertilize rice paddies and more importantly efficiently recycling farm nutrients. Moreover, integrated farming decreases the farmer's dependency towards chemical inputs and energy.
Promotion of agroforestry	Agroforestry is widely recognized has one of the major practices having the potential to increase resilience to climate change. Agroforestry increases nutrient cycling, water redistribution, provides shade, controls erosion, increases carbon stocks, etc.
Water supply and irrigation system	Soil moisture drops in periods of deficient precipitation. Soil moisture is the component of the water cycle that is accessible by the roots of plants, enabling them to grow. Irrigation (or fertigation, when the irrigation system, integrate soil amendments) is the most widely used way to combat the soil water deficiency and, accordingly, by far the prevalent water use in agriculture. For instance, a shift from the traditional gravity irrigation to modern pressurised systems (e.g. drip and sprinkler irrigation) and improved conveyance efficiency provide an opportunity for reduced water demand in irrigation, thus enhancing climate resilience.
Post harvest practices	Post-harvest practices may enhance climate resilience in many ways, including:

	- Prompt harvesting; - Growing and/or storing crops and varieties which are less susceptible to post-harvest pest attack; - Maintenance of the physical storage structures; - Accurate estimation of food stock requirements; - Protection and monitoring of grain to be stored for more than three months; - Understanding and application of basic food safety principles; - Use of early warning seasonal forecasts to project how the climatic conditions might impact on food storage or marketing strategies; - Ensuring plant breeders evaluate post-harvest as well as pre-harvest crop characteristics; - Helping farmers to learn from others' and their own experiments.
Livestock bio-resilience	The impact of climate change is expected to increase the vulnerability of livestock systems and reinforce existing factors that are affecting livestock production systems, especially diseases. Resilience to those impacts can be enhanced through: - The creation or strengthening of animal health services in rural areas to reduce the impact of emerging diseases - The development of livestock diversity by selection of local breeds, which adapt better to climate variations (for instance, droughts) - The diversification of livestock and agricultural activities
Improved water management systems	Improved management of water resources through the introduction of simple techniques for localized irrigation (e.g. drip and sprinkler irrigation), accompanied by infrastructure to harvest and store rainwater, such as tanks connected to the roofs of houses and small surface and underground dams
Production and conservation of fodder	Identification and implementation of technologies and practices for the production and conservation of fodder, which improves the supply of animal feed and reduces malnutrition and mortality in herds.
Capacity building for livestock producers	There is a need to improve the capacity of livestock producers to better understand and deal with climate change increasing their awareness of global changes. Moreover, training in agroecological technologies and practices for the production and conservation of fodder improves the supply of animal feed and reduces malnutrition and mortality in herds.

Improved livestock management systems	Efficient and affordable adaptation practices need to be developed for the rural poor who are unable to afford expensive adaptation technologies. For instance: - Provision of shade and water to reduce heat stress from increased temperature. Given current high energy prices, providing natural (low cost) shade instead of high cost air conditioning is more suitable for rural poor producers - Reduction of livestock numbers – a lower number of more productive animals leads to more efficient production and lower GHG emissions from livestock production - Changes in livestock/herd composition (selection of large animals rather than small)

83. Other more detailed options includes:

- Implementation of growing techniques that help protect soils from erosion and moisture loss (use of vegetation coverage (cover crops), organic fertilizers, and agricultural conservation systems, organic soil enrichment like terra-preta among others).
- Implementation of comprehensive farming production systems, conservation agriculture, agroforestry systems, cattle raising, and sustainable irrigation and percolation technical options. It is important to promote Integrated farming systems that maximize the use of resources by combining crops (food and fodder) with livestock and that will provide farmers with a variety of options to face the uncertain weather conditions associated with increased climate variability.
- Implementation of cattle feeding techniques for critical times (introduction of varieties of grazing resistant to droughts or floods, supplements and forages)
- Creation of water safety plans.
- Investment in small-scale water collection

84. The detailed demonstration of how and why those technical options contribute to enhance the resilience to climate variation has been widely documented throughout the years and relevant documentation is available. For instance, FAO's

Climate-Smart Agriculture[18] report summarizes the options that can be used by farmers and food producers to reduce greenhouse gas emissions, adapt to climate change, and reduce vulnerability.

1.1.3. Implementation of validated technical options for climate resilience enhancement in agriculture

85. **Contribution to climate resilience:** The activity 1.1.2 already summarizes how technical option in agriculture has the potential to enhance climate resilience. Technical and strategic support to farmers will be crucial in order to ensure a smooth transition through those alternative techniques and measures, as well as to facilitate the know-how transfer to the landowners. The implementation phase will also involve the continuous monitoring of the implemented measures, which will allow the identification and implementation of corrective actions that will lead to continuous improvements. Key performance indicators are going to be selected based on the technical performance (e.g. productivity, costs) as well as the results achieved in regards to climate resilience (e.g. reduction of yield losses due to flooding events). Empowering farmers through participatory engagement to make informed decisions will be a constant element of project support to ensure interventions are appropriate to local conditions and to develop local capacities. The implementation of specific projects in the selected geographical areas will allow:

    - Delivering tangible, measurable results that will reduce the climate vulnerabilities of local communities. The proposed technologies were establish along with communities through existing cooperatives and community groups in order to build the capacities of rural communities for community-based decision-making and support them in taking appropriate steps to plan for and enhance their climate resilience
    - Involving beneficiaries in the identification of the interventions. For this reason, initial assessments will be participatory and community-based. This will build the capacity of local farmers to identify specific interventions. The

[18] http://www.fao.org/climatechange/climatesmartpub/en/

participation of local communities in these initial assessments will foster ownership of the findings and planned interventions. It will also ensure that all interventions are appropriate to local conditions and provide an opportunity for dialogue, consensus building and capacity development on climate adaptation.

- Intervention measures will be based on local priorities, needs, knowledge and capacities so that the interactions between future and current climate hazards and development can be managed effectively.

86. **OUTPUT 1.2.: Financially support the adoption of technical options generated in local communities (local communities selected with the proposal and other vulnerable communities).** The interest of this OUTPUT is generating greater financial support to producers regarding the implementation of available technical options and low-cost supplies. Indeed, even with the implementation of the measures described under the output 1.1, a residual climate risk will most probably remain, which will lead to financial losses especially in the agricultural sector, being the most exposed to climate risks (see Part I). Therefore financial instruments have to be developed and offered to farmers who will still suffer financial losses.

87. Two instruments are proposed as follows:

1.2.1 Creation of an agricultural insurance and insurance policies programme that includes criteria on climate resilience.

Various agricultural insurance products already exist and are available to farmers. This activity aims at identifying suitable products for the national and local context as well as the types of perils that insurance policy programme could cover. This activity also aims at defining the role government would play in assisting agricultural producers with climate variability insurance, in order to make sure the insurance products are accessible to farmers.

88. The final products of this activity would meet the following criteria:

89. **Goal**: The objective of an agricultural insurance is to reduce the farmers' economic exposure (as well as their producer associations, individual companies and regional finance and government institutions) to the negative effects of climate change variability, through adaptation to climate events that have not yet occurred or whose intensity and level of occurrence may increase in future. This contributes to the economic sustainability of the agricultural sector in the target region as well as the increase of climate resilience. In order words, climate insurance programs can help farmers improve their risk management, enabling them to invest and take chances that they would otherwise avoid. This creates the conditions needed to improve their livelihood and strengthen their resilience to climate variability.

90. **How it would work**: many innovative climate insurance schemes are being developed and introduced using index-based insurance instruments. Unlike conventional agricultural insurance, they are not based on measurement of actual damage, but on the occurrence of previously established climate data parameters that have been proven to predict damaging events, such as the rise in the temperature of the ocean's surface off the coast Central America, which correlates with the onset of the El Niño phenomenon. Insurance products that include climate risk for smallholder agriculture will also include the integration of seasonal climate forecasts into index. As opposed to traditional insurance products, the proposed insurance schemes shall be designed to alleviate forecasted climate impacts and taking into consideration adaptation measures undertaken by the farmers, rather than being simply based on the occurrence of previously established climate events. The insurance product shall be built taking into account the forecast information, encouraging farmers to take advantage of more profitable options when climate risks are lower, while using forecasts of bad years to provide incentives for more protective activities to prevent losses. In this way, insurance products contribute to enhance climate resilience in agriculture and would provide an economic driver to farmers that implement adaptation measures.

    The incorporation of seasonal forecasts into index insurance packages will be carried out so that the insurance protects against the uncertainty within the forecast in a way that is implementable by lenders and insurance providers.

91. Management: The design and planning of a insurance programme would be made in collaboration with the National Insurance Institute. Furthermore, support and know-how transfer can be given by international agencies such as WFP (World Food Program), Swiss Re or the World Bank, who have already play important roles in enabling and facilitating the start up of such insurance interventions worldwide, especially in Africa and with SIDS (small island developing states).

92. **Financing**: Based on economic statistics such as OECD and World Bank, it has been demonstrated that the external aid sent to developing countries after disaster accounts for a relatively small fraction of the total losses caused by catastrophic events. On average over 90% of the cost from natural disasters is related to households, businesses and government[19]. This figure illustrates the need for insurance-based climate financing mechanisms implemented at the country level (insurance policy programme). The main objective of this activity is to promote the necessity of implementing an insurance-based climate financing mechanism that is not recognized as an important subject at the moment. A fixed insurance premium paid by the government would represent a small fraction of the potential economic loss, especially in Costa Rica given the important frequency and gravity of those events. Thus, the government could cap the amount of its fiscal loss, greatly reduce the uncertainty of national budgetary outcomes due to natural disasters, and increase the speed of its post-disaster economic recovery.

93. **Contribution to climate resilience:** As previously described (Part I), agriculture is a major economic sector and an important source of livelihood in Costa-Rica and it is particularly exposed to climate variation and adverse natural events. The cost of climate variation is already significant and may even increase further in the future, which may ultimately lead farmers to poverty if unchecked. Since adaptation practices along are typically not sufficient to eliminate the climate risk, agricultural climate insurance is a tool that the producers can potentially use to adapt to the residual risks associated with adverse natural events. In that sense, agricultural

[19] http://www.tandfonline.com/action/showPublications?category=43983476

insurance can complement and enhance risk management activities previously describe, which on a standalone basis are typically not proven sufficient.

94. In return, the idea is to provide incentives for the implementation of climate adaptation measures through a climate criterion that would be integrated into the clients' risk profiles. In other words, a producer that has implemented such measures would receive a lower risk score and, consequently, would have access to lower insurance fees.

95. Thus, such insurance aims at strengthening the farmers' financial resilience in the event of crop losses for instance, which would in return ensure the sustainability of the measures identified in output 1.1 and that aims at building climate resilience. Hence, the creation of subsidized agriculture insurance will contribute to climate resilience. This activity is an initial approach to the topic in the country, an adaptation measure that would be enforced by the Adaptation Fund.

1.2.2 To facilitate access to financial schemes such as revolving funds (credit) to agricultural producers to implement sustainable management practices for lands, and implement strategies to adapt to climate change and/or invest in new rural economic activities as contingency for the impact caused by climate change.

96. **Goal:** The goal of such revolving funds programme is to facilitate and accelerate access to financing for adaptation project proponents who, for various reasons, may face severe barriers of access to finance and have little possibility of obtaining financial support within traditional financing schemes. Leverage with other available credit funds will be promoted.

97. **How it would work:** Initially**, f**acilitating access to financing may be achieved through a credit programme that has already been put in place by Fundecooperacion, called "Tailor-made Financing". Such programme allows credit funds allocation to be customized to meet each project's needs, instead of simply forcing the project to fit the funds' requirements. This way of doing is especially relevant to small-scale projects, for which needs may vary significantly from one

project to another. Fundecooperacion's scheme would be put in place as a pilot project.

98. Further, other available credit programs (traditional as well as microfinancing schemes) will be invited and motivated to incorporate adaptation within their funding criteria.

99. For instance, a revolving fund would fund projects that save operational dollars and the fund would be paid back out of the savings or loss reduction. Projects with short-term paybacks (e.g. 5 years or less) can be combined with projects with long-term paybacks, and all projects could be funded and paid back in typically five years.

100. **Management:** The fund may be staffed and administered by Fundecooperacion, but funding decisions can be made by a Board of Directors that would include other relevant stakeholders and experts. The Board of Directors will include key representatives from several sectors and activities, including nongovernmental organization, civil society, the government (national and local), the private sector and academia. This diversity of stakeholders will ensure completeness, integrity and transparency of the decision making process. This representation will also allow the use of multiple criteria in the project screening process.

101. Fundecooperación has the expertise and know-how to manage such fund. Since its foundation, Fundecooperación has developed a solid expertise in sustainable development micro-financing. Since 1994, Fundecooperación has financed approximately 35 million USD in projects that promote sustainable development. A part of the financing has been, since 2007, allocated to the programme called "Tailor-made Financing" ("Crédito a su Medida"), which allows the revolving funds allocation to be customized to meet each project's needs. This includes the securities, terms, and repayments, which have been customized to meet the requirements of each project. Fundecooperación has been leading the management so that the financing fits the project - rather than forcing the project to fit the financing – while ensuring the environmental integrity and economic

feasibility. This is an added value of Fundecooperación expertise in credit program, compared to other typical traditional funds.

102. Fundecooperación's program is aimed at productive small and medium-sized businesses, -either individuals or associations, devoted to sustainable and innovative economic activities. Their activities must contribute to life quality improvement, environmental protection and gender equity. Credit scheme is framed within any of the seven thematic areas: sustainable agriculture, sustainable tourism, gender equity, adaptation y mitigation Climate Change, energy efficiency, supply chain and clean technologies.

103. Financing: It will be partially financed by existing credit programs (like Fundecooperacion's and other). Furthermore, funding from the adaptation fund will facilitate, demonstrate benefits and promote innovative schemes to financial institutions to invest in agricultural projects building resilience to climate change.

104. **Contribution to climate resilience:** The cost of implementing new agricultural practices (see output 1.1) may be significant, especially for small-scale agricultural production or production that have been the most exposed to climate adverse events in the past. Access to capital has been so far one of the most predominant barrier to innovation in climate change mitigation and especially adaptation, which is rarely associated with an increase in income on the short term. As a result, producers typically have difficulties to absorb the capital investment required to launch new initiatives and to implement improved agricultural practices. Hence, the implementation of the activities described under output 1.1 will partly depend on the producers' access to capital and capacity to invest. In instances where access to capital is identified as a barrier to the implementation of measures to improve climate resilience, the programme will support the producers in order to facilitate the access to existing revolving funds aiming at reinforcing climate resilience in the agricultural sector. Since the access to such funds will allow financing climate resilience activities, therefore this activity will contribute to enhance climate resilience.

105. **Component 2. Improving water resources management in order to increase resilience in coastal communities that are more vulnerable to climate change.**

106. Water Resource – Coastal Areas: the environmental impact (such as the deterioration of coastal ecosystems) caused by climate variability (e.g. rise of sea level, precipitations, etc.) jeopardizes the safety, the amount and the protection of water resources. Therefore, the systems show high vulnerability and low response capacity in case of events that jeopardize them. The impacted stakeholders in this sector include ASADAS, coastal communities and fishermen.

107. **OUTCOME 2. Preservation and improvement of water resource availability for human development and environmental sustainability through the participation of communities in protecting critical ecosystems.**

108. Protections of recharge areas, surface and underground waters. A priority is assessing the health of the ecosystems protecting the important water sources. Based on the results, the aim is to prioritize a strategy for its protection with the participation of local and national stakeholders. The identification of gaps in the protection of significant water areas implies the creation of pilot plans and safety plans, as well as the improvement of the watershed resilience in order to improve percolation, promote reforestation and agroforestry practices. These actions will allow operators to previously have measures and protocols to reduce risk and improve the response capacity in case of these events.

109. **Preliminary geographical scope**

110. Among the selection criteria, one will be based on the project's location. Specifically, for this component the project's location was analyzed based on:

(1) Its relevancy with the proposed outcome. (e.g. is the problematic/risk significant in the region/district/township?)
(2) The location's priority rank at the country level. (e.g. is location a priority in the mitigation of the problematic/risk at the country level)
(3) An analysis of the adaptation capacity

111. For all the activities included in OUTCOME 2 - Preservation and improvement of water resource availability **-** priority regions have been defined based on two recent studies:

112. First, a recent study undertaken by the Costa-Rica Institute of Aqueducts and Sewage (Instituto Costarricense de Acueductos y Alcantarrillados): Water Supply for Human Consumption in the Coastal Zones of Costa-Rica. The study aimed at characterizing the quality of water supply and management per zone (canton), by assigning an average score based on a multi-criteria analysis. From the cantons analyzed in the report, the cantons with lowest scores were chosen as priority locations for component 2:

- Nicoya
- Hojancha
- Nandayure
- Osa
- Aguirre
- Puntarenas

113. Secondly, another recent study (2013) on climate vulnerability, undertaken by experts from CATIE institute for agriculture and natural resources, GIZ and US-Aid[20], identifies other four cantons (including specification at the district level) as vulnerable to climate variability:

- Matina
- Limón
- Siquirres
- Talamanca

114. Once combined, these two reports identify a total of 10 cantons that are deemed relevant and priority for Component 2 adaptation measures, as summarized below:

20 https://dl.dropboxusercontent.com/u/41609727/Blog/130903_Publicación%20Regional_CAribeCAM_final.pdf

Table 10 Component 2 Priority Region(s)

Component 2			
Priority	**Current Vulnerability**	**Future Vulnerability**	**Vulnerable Areas Selected (Cantons)**
Chorotega Region	High	High	Nicoya Hojancha Nandayure
Brunca Region	High	Medium	Osa
Central Pacific Region	Medium-high	Medium-high	Aguirre Puntarenas
Huetar Atlántica Region	Medium-high	Medium-high	Matina Limón Siquirres Talamanca
Huetar Norte Region	High	Medium-low	Not selected
Central Region	Medium-low	Medium-high	Not selected

115. **OUTPUT 2.1. Developed and implemented water Safety Plans for water users at local level, watershed management plans in vulnerable infrastructure.** The creation of plans allows operators (ASADAS - community-based water management organizations, Municipalities managing aqueducts, Water and/or Irrigation Users Associations, among others) to previously have measures and protocols that should be implemented to reduce their risk and improve their response capacity in case events such as droughts or flooding occur. Developing plans aims at sustainably managing land in order for communities to be able to respond to the climate impact on the resource. Through the implementation of an infrastructure vulnerability assessment, the programme is able, not only to measure the vulnerability, but also it gives information needed to assess current and future climate threats, determine actions and to measure the results after the intervention is finalized. Additionally, it takes the risk factor into account. The activities to be implemented are the following:

2.1.1. Creation of water safety pilot plans at the canton and regional level to mitigate risks of water shortage or overage and to implement irrigation management plan, through the implementation of Protocols in the vulnerable infrastructure assessments.

116. An infrastructure vulnerability assessment would be implemented. The process will be applied to individual infrastructures such as buildings or

infrastructure systems such as potable water supply. The assessment will be carried out by engineers, working with other professionals, including climate scientists, and will identify current and future climate risks to infrastructure.

117. **Contribution to climate resilience:** Recent climate variability trends cast doubt on the validity of applying historic climate data when designing water infrastructure. In the face of climate changes, engineers have to reconsider existing assumptions relative to infrastructure capacity and vulnerability. Based on this concern, enhanced climate resilience can be achieved through an engineering vulnerability assessment of the infrastructure (mainly wastewater and water resources). Hence, this activity will contribute to enhance climate resilience through the reinforcement of water infrastructure resilience to climate variability.

2.1.2. Development and implementation of Management Plans for selected watersheds.

118. In the context of climate change, new criteria such as minimizing vulnerabilities and managing climate-related risks have to be considered in the watershed planning processes. In many cases, climate change exacerbates existing management challenges, such as water shortages, water use conflicts, protecting water quality and managing natural hazards. Therefore, when adaptation is integrated into watershed plans, consideration will be given to the degree to which climate change is compounding those problems and to how strategies and responses need to be refined to address additional pressures related to climate change.

119. The ways in which adaptation is integrated into water and watershed planning will be influenced somewhat by the scope and detail of a particular plan. Here are a few indicative examples of climate resilience integration in the watershed management:

- A water conservation or drought management plan would be informed by future climate scenarios of drought events or water shortages rather than by historical levels of drought (e.g., an increased frequency and severity of drought).

- A stormwater, drainage, or flood management plan would be informed by current hydrological information and by an understanding of how the hydrological regime is anticipated to shift in response to climate change.
- A drinking water protection plan would be informed by information and knowledge about all possible threats to water quality, including climate-related impacts such as increased peak flows and turbidity.

120. **Contribution to climate resilience:** Local water management associations and national water systems in communities currently protect strategically important aquifer recharge areas. Organizations at local level in charge of water management, improve the management of water supply and supply services by taking into account mechanisms for managing the demand. This mechanism shall also include clear strategies to facilitate the access to water for the most vulnerable population, including reducing risk of water system deterioration associated with climate variation. Selected populations are vulnerable to water scarcity, flooding, landslides and diseases. These impacts will be aggravated due to climate change. A watershed management plan that integrates climate risks (see how in the above paragraph) will contribute to enhancing climate resilience by taking into account the climate variables that are affecting or will affect the watersheds in the near future, which will allow the identification of appropriate adaptation responses.

121. **OUTPUT 2.2.: Efficient and effective comprehensive management of the water resource by implementing enhancements. (Beneficiaries: ASADAS, community water management and national water systems, and rural population depending from ASADAS water supply).** Some of the activities are the following:

2.2.1. Implementations of measures to protect aquifer recharge areas. (Example: Reforestation at aquifer recharge areas)

122. Groundwater aquifers areas can be protected and then recharged in a controlled way so that excess water can then be used later for water supply or

environmental protection. Protection of groundwater recharge areas is an indirect measure to increase the water supply within a managed water supply system. Contrary to rainwater harvesting which increases the water supply directly with additional water from natural precipitation, groundwater recharge feeds precipitated water into an aquifer in order to ensure and increase a continuous extraction of groundwater from this aquifer.

123. **Contribution to climate resilience:** Measures to protect aquifer recharge areas will contribute to enhance climate resilience by mitigating the negative effects.

2.2.2. Planning and design of infrastructure for water use and distribution aiming at the adaptation, modernization, and improvement in order to enhance climate resilience.

124. Climate variation challenges the ability of water to ensure public health while protecting the environment. Therefore, resilient and adaptable water utilities are needed to ensure clean and safe water. To implement such utilities, the infrastructures' stakeholders have to be informed on the integration of climate variables in the planning and design of water infrastructure. Capacity building is also needed in order to ensure local know-how development. In order to avoid maladaptation, a fine planning and design that takes into account the needs of each project case is expected thorough this activity.

125. Concrete example of potential achievement that will enhance climate resilience through the proposed activity include:

- Improvements of basic infrastructure (drainage systems, aqueducts, among others) against climate risks
- Basic sewerage and drinking water systems to reduce vulnerability and risk in case of climate variability and extreme events.
- Development of infrastructure that enhances the infiltration of water at recharge areas

- Efficient Water User Technical options
- Implement infrastructures that allow rainfall to be captured in case of surplus, and then used when there is deficit. This will require some improved or even new water storage technology.
- Extended and improved metering infrastructures that will allow leakage management (including infrastructure replacement)
- Repair vulnerable infrastructures to strengthen them, or as needed move those infrastructures to other locations identified as less exposed to climate variability.

126. This Output aims at improving the quality of water supplies, which involves protecting the water sources as well as improving the operations of the community systems. The activities include:

- Data collection: physical and biological information, rainfall series and climate change models at the national and regional scales.
- Determination of current and past land use in the watersheds related to the aqueducts.
- Visits and meetings with the ASADAS (more than 50 ASADAS) members and officials.

Some of the expected results are:

- Reduction in the water leakages in the system
- Reduction of the hours without service per year
- Improvements in the water quality
- Improvements in the physical infrastructure of the aqueducts and its maintenance
- Improvements in the availability and sustainability of water sources

127. **Concrete example of how water infrastructures may be adapted to enhance climate resilience:** Climate change may cause inconsistent rainfall and may increase pollution in reservoirs, which means the security of water supply infrastructures represents a climate risk that increases the vulnerability of the exposed population. Technical interventions can increase the capacity of the water infrastructure and monitoring capacity. The plant may incorporate new

technologies such as ozone and ultra-filtration membrane, which would allow for the recycling of wastewater or rainwater so that it can then be reutilized as drinking water. Rainwater can be mixed with water extracted from boreholes and reservoirs, and then treated and ultimately distributed as drinking water. This way, the plant can substantially increase its nominal capacity.

128. **Contribution to climate resilience:** infrastructures that are planned and designed considering the climate risks will be more resilient to adverse events that may affect the water quality and availability, such as sea level rise, shifting precipitation and temperature changes.

2.2.3. To promote refundable funds (credit) to local water management associations in order to implement sustainable management practices for water

129. **Goal:** As described in sub-component 1.2.2, the goal of such revolving funds programme is to facilitate and accelerate access to financing for adaptation project proponents who, for various reasons, may face severe barriers of access to finance and have little possibility of obtaining financial support within traditional financing schemes. Leverage with other available credit funds will be promoted. Also, sinergy with schemes such as the Environmental Services Payment and the Water Use Canon will be promoted.

130. **How it would work:** Initially, facilitating the access to financing may be achieved through a credit programme that has already been put in place by Fundecooperacion, called “Tailor-made Financing”. Such programme allows credit funds allocation to be customized to meet each project’s needs, instead of simply forcing the project to fit the funds’ requirements. This way of doing is especially relevant to small-scale projects, for which needs may vary significantly from one project to another. Fundecooperacion’s scheme would be put in place as a pilot project.

131. Further, other available credit programs (traditional as well as microfinancing schemes) will be invited and motivated to incorporate adaptation within their funding criteria.

132. For instance, a revolving fund would fund projects that save operational dollars and the fund would be paid back out of the savings or loss reduction. Projects with short-term paybacks (e.g. 5 years or less) can be combined with projects with long-term paybacks, and all projects could be funded and paid back in typically five years.

133. **Management:** The fund may be staffed and administered by Fundecooperacion, but funding decisions can be made by a Board of Directors that would include other relevant stakeholders and experts. The Board of Directors will include key representatives from several sectors and activities, including nongovernmental organization, civil society, the government (national and local), the private sector and academia. This diversity of stakeholders will ensure completeness, integrity and transparency of the decision making process. This representation will also allow the use of multiple criteria in the project screening process.

134. Fundecooperacion has the expertise and know-how to manage such fund. Since its foundation, Fundecooperacion has developed a solid expertise in sustainable development micro-financing. Since 1994, Fundecooperacion has financed approximately 35 million USD in projects that promote sustainable development. A part of the financing has been allocated, since 2007, to the programme called “Tailor-made Financing” (“Crédito a su Medida”), which allows the revolving funds allocation to be customized to meet each project’s needs. This includes the securities, terms, and repayments, which have been customized to meet the requirements of each project. Fundecooperacion has been leading the management so that the financing fits the project - rather than forcing the project to fit the financing – while ensuring the environmental integrity and economic feasibility. This is an added value of Fundecooperacion expertise in credit program, compared to other typical traditional funds.

135. Fundecooperacion's program is aimed at productive small and medium-sized businesses, either individuals or associations, devoted to sustainable and innovative economic activities. Several ASADAS have been beneficiaries of Fundecooperacion's program. Funded activities must contribute to life quality improvement, environmental protection and gender equity. Credit scheme is framed within any of the seven thematic areas: sustainable agriculture, sustainable tourism, gender equity, climate change adaptation and mitigation, energy efficiency, supply chain and clean technologies.

136. **Financing:** It will be partially financed by existing credit programs (like Fundecooperacion's and other). Furthermore, funding from the adaptation fund will facilitate, demonstrate benefits and promote innovative schemes to financial institutions to invest in water and coastal projects that build resilience to climate change.

137. **Contribution to climate resilience:** The cost of implementing new water systems and water protection measures (see activities 2.2.1 and 2.2.2) may be significant, especially for small municipalities or locations that have been the most exposed to climate adverse events in the past. Access to capital has been so far one of the most predominant barrier to innovation in climate change mitigation and especially adaptation, which is rarely associated with an increase in income on the short term. As a result, project developers have difficulties to absorb the capital investment required to launch new initiative and to implement improved water system and protection measures. Hence, the implementation of the activities 2.2.1 and 2.2.2 will partly depend on the access to capital and capacity to invest. In instances where access to capital is identified as a barrier, the programme will support the developers in order to facilitate the access to existing refundable funds aiming at reinforcing climate resilience of water systems. Since the access to such funds will allow financing climate resilience activities, therefore this activity will contribute to enhance climate resilience.

OUTPUT 2.3.: Establishment of a comprehensive management system in the coastal area, aiming at strengthening coastal communities that are vulnerable to climate change. To achieve this, adaptation measures shall be identified and implemented in order to ensure the sustainable use of natural capital according to the needs identified, through the protection of ecosystems and the promotion and respect of practices adopted at a local level.

Some of the activities are the following:

2.3.1. Design and implementation of coastal protection and restoration measures.

138. This activity consists in developing a management plan for the effective management of selected marine protected areas, with activity zones delineated in three areas. Improvements will be made to the database for continuously monitoring changes in coastal ecosystems. At the practical level, strong community involvement will be promoted so sand dunes will be re-established, mangroves replanted in degraded coastal regions and seagrass beds restored. Coastal protection measures and/or structures will be established in selected areas. A scheme will be developed to identify and assess the feasibility of alternative livelihoods, with grants awarded to develop these livelihoods.

139. **Contribution to climate resilience:** stronger awareness, involvement and therefore commitment from local coastal communities will ensure that the restoration and protection of coastal areas will preserve or reestablish the environmental services brought by natural coastal protections such as sand dunes, mangroves and seagrass beds. As a result, climate resilience in coastal areas will be enhanced.

2.3.2. Development of a comprehensive management plan for coastal-marine resources and sustainable productive activities.

140. Climate change is a very important issue for ocean and coastal managers. Climate change has a significant impact on coastal populations, economies, and natural resources. Climate change is affecting the marine and coastal environment

and the people and species that inhabit with increasing temperature, changing species distribution, changing ocean chemistry, rising sea levels, shifting weather patterns and spreading exotic species.

141. A comprehensive management plan will identify the need for strategic planning and integrated management in long-term conservation, development and productivity of coast and marine environments. Furthermore, existing management plans will be updated in order to take into account climate risks.

142. **Contribution to climate resilience:** the development and implementation of a management plan for coastal-marine resources and sustainable productive activities will integrate climate risks in order to identify good practices for adaptation, which will lead to enhanced climate resilience.

2.3.3. Development and implementation of strategies for preserving and recovering mangroves

143. Resilient mangroves shorelines are crucial to provide multiple buffers against climate change effects. In addition to serving as habitat for marine species and wildlife, mangroves also provide storm protection for coastal communities, a buffer against coastal erosion, carbon sinks and additional resiliency for economically important habitat such as coral reef.

144. The capacity of mangroves (as well as sea grasses and salt marshes) to sequester carbon dioxide from the atmosphere is becoming increasingly recognized at an international level. Of all the biological carbon, namely the “green carbon”, captured in the world, over half (55%) is captured by mangroves and other marine living organisms, which are also known more specifically as “blue carbon”.

145. Based on available literature, relative sea-level rise may be the greatest threat to mangroves of all the climate change outcomes. Most mangrove sediment surface elevations are not keeping pace with sea-level rise.

146. Hence the development of strategies aiming at mangrove preservation and recovery is crucial to ensure climate resilience.

147. **Contribution to climate resilience:** Coastal planning can adapt to facilitate mangrove migration with sea-level rise. Additional adaptation options may include:

- Management of activities within the catchment that affect long-term trends in the mangrove sediment elevation
- Better management of other stressors on mangroves
- Rehabilitation of degraded mangrove areas
- Strengthen local community awareness and involvement in the protection and regeneration of mangroves.

148. The implementation of such adaptation measures has the potential to improve resilience to climate change and offset anticipated mangrove losses.

149. **Contribution to climate resilience:** The cost of implementing coastal protection measures (activities 2.3.1, 2.3.2 and 2.3.3) may be significant, especially for mangrove zones that have been the most exposed to climate adverse events in the past. Access to capital has been so far one of the most predominant barrier to innovation in climate change mitigation and especially adaptation measures, which are rarely associated with an increase in income on the short term. As a result, project developers face difficulties to absorb the capital investment required to launch new initiative and to implement restoration and protection measures. Hence, the implementation of the activities 2.3.1, 2.3.2 and 2.3.3 will partly depend on the access to capital and capacity to invest. In instances where access to capital is identified as a barrier, the programme will support the developers in order to facilitate the access to existing refundable funds aiming at reinforcing climate resilience of mangrove zones. Since the access to such funds will allow financing climate resilience activities, therefore this activity will contribute to enhance climate resilience.

150. The table below is a summary of Component 2 technical options and an explanation of how they enhance climate resilience on access to clean and safe water.

Table 11 Technical options in water-coastal sector and how it enhances climate resilience

Technical options	How it enhances climate resilience
Water infrastructure vulnerability assessment (2.1.1) And Water infrastrucre planning and design (2.2.2)	Changing climate could mean that some water infrastructure will lack the necessary load capacity or adaptive capability. For instance, increases in heavy precipitation events cause problems for the water infrastructure, as sewer systems and water treatment plants are overwhelmed by the increased volumes of water. Shortfalls of this kind could leave some of the country's infrastructure vulnerable and not prepared to cope with adverse climate effects. This is especially true in the Atlantic side of Costa Rica, which experiences stormwater drainage problems where water tables are not very deep. The geography is much flatter here, and the propensity for flooding is higher. Total area inflicted with drainage problems is estimated around 300,000 ha. Such vulnerabilities need to be identified and assessed and, when appropriate, preventive and/or corrective actions have to be integrated to the infrastructure design and maintenance plans, in order to maintain or increase their climate resilience.
Watershed management plan (2.1.2)	Climate change exacerbates existing watershed management challenges, such as water shortages, protecting water quality and managing natural hazards. Watershed plans must take into account the degree to which climate change is compounding those problems and to how strategies and responses need to be refined to address additional pressures related to climate change. Here are two concrete examples of how climate risks and projections can be integrated to watershed plans, thus allowing enhancing resilience to climate change: - A water conservation or drought management plan would be informed by future climate scenarios of drought events or water shortages rather than by historical levels of drought (e.g., an increased frequency and severity of drought). - A drinking water protection plan would be informed by

	information about climate-related impacts such as increased peak flows and turbidity.
Protection of recharge areas (2.2.1)	Sea level rise increases the chance of saltwater intrusion in groundwater bodies, especially in low-lying areas, which increases climate vulnerability. For instance in Costa-Rica, according to the IPCC 4th Assessment Report, sea level rise, weather and climatic variability and extremes modified by global warming are very likely to have impacts on availability of drinking water in the Pacific coast. Possible measures to reduce the vulnerability of groundwater systems to climate change are measures that will help to increase the recharge of the aquifer with freshwater or measures that reduce the impact of saline water in surface water and shallow groundwater. Those measure will enhance climate resilience, as it will mitigate climate impacts or avoid foreseeable climate impacts on freshwater aquifers. Concrete examples include: - Improve protection measures at recharge areas (i.e. reforestation, natural barriers) - Modifying pumping practice through reduction of withdrawal rates or adequate relocation of extraction wells; - Climate compatible irrigation and drainage practices in order to make efficient use of freshwater lenses in the root zone.
Coastal protection and restoration (2.3.1)	Climate change affects Costa Rica's coastal areas in a variety of ways. Coasts are already sensitive to sea level rise, changes in the frequency and intensity of storms, increases in precipitation, and warmer ocean temperatures, which all represent critical factor in the vulnerability of Costa-Rica to climate hazards. A concrete example in Costa Rica in Puntarenas coast: With rise of 0.3m and 1.0 m, seawater would penetrate 150m to 500m, thus affecting 60%-90% of urban areas. Concrete example of coastal protection and restoration technical options to enhance climate resilience include: - Restoring natural storm surge buffers - Modifying building codes to enable structures to withstand higher water levels - Expanding setbacks (the distance between a structure and

	the shoreline) and instituting other land-use arrangements, including rolling easements, to enable wetlands and beaches to migrate inland - Restoration of seagrass beds
Mangrove preservation and recovering (2.3.3)	Resilient mangroves shorelines are crucial to provide multiple buffers against climate change effects. In addition to serving as habitat for marine species and wildlife, mangroves also provide storm protection for coastal communities, a buffer against coastal erosion, carbon sinks and additional resiliency for economically important habitat such as coral reef. However, Mangrove areas in Costa Rica are declining rapidly. Although it is illegal to destroy mangrove forests in Costa Rica, laws are largely ignored, and the entire Pacific coast of Costa Rica is under significant pressure from coastal developments for industry and tourism. Large tracts of mangrove forest have been cleared to make room for salt extraction and shrimp ponds, while the wood may be exploited to produce charcoal. Mangroves are also threatened by agriculture and urban encroachment, pollution, and by dyke and road construction, which affect the water hydrology Given the importance of Mangrove in protecting against climate variations, and since mangrove face serious threat, their preservation and restoration are key to increase resilience to climate change.

Component 3. Improving the capacity of communities, producers, institutions, and stakeholders regarding adaptation to Climate Change.

151. **Outcome 3: Communities, farmers, producers, institutions, and stakeholders improve the resilience capacity through adaptation to climate change, which can be achieved through information dissemination, awareness building, training and knowledge exchange mechanisms about the related socioeconomic and environmental risks and effective adaptation measures.**

152. The aim is capacity building about the risks of climate change, in order to improve the readiness of stakeholders in the different levels, for climate change

threats (both gradual and extreme) and so they are able to take better decisions regarding their context.

153. **OUTPUT 3.1.: Community preparation strengthened by developing and consolidating early warning protocols and systems.** In order to help communities control the changes in the local conditions that might indicate the presence of difficulties, but mainly to generate the correct response, the aim is to generate early warning systems according to the needs of each community. Some of the activities are the following:

3.1.1. Development and implementation of Early Warning Systems (SAT, for its name in Spanish), district risk reduction plans in priority sites according to their vulnerability.

3.1.2. Preparation of communities in the development of Early Warning Systems, district plans including analysis of risk at local level by established community organizations.

154. **OUTPUT 3.2.: Communities, farmers, institutions and stakeholders are aware and informed about risks related to climate change and trained in regards to the corresponding adaptation measures.** Some of the activities are the following:

155. Enhancing capacities for planning, coordination and implementation at the local level is critical to guarantee effective climate adaptation. The outcomes of this programme are designed to strengthen the capacities required to continue implementing adaptation measures through the replication of ongoing adaptation strategies country-wide. During the development of the Full Proposal key actors were identified, which are important for scaling up (such as key ministries, local authorities, academic sector, CSO/NGOs as well as the private sector). The strategy was to involve them in the planning and implementation processes at an early stage and build a working relationship with them through the implementation of each of the proposed activities. Some of the expected activities are:

3.2.1. Mapping and consultation, from the different stakeholders, to determine the level of knowledge and awareness about climate change.

3.2.2. Promotion and training regarding the creation of new rural economic activities due to the impact of climate change, including technical and financial considerations.

3.2.3. Programs of public information and awareness about the problem and measures to adapt to climate change according to the vulnerability area

3.2.4. Workshops among community organizations, professionals, technical groups, producers, and beneficiaries in order to exchange knowledge and experiences. Scaling up into new geographical areas will be achieved through exchange initiatives among communities from areas where successful interventions have taken place.

3.2.5. Systematization of lessons learned and good practices: The aim is to promote dialogue, learning and cooperation between the project participants and other stakeholders.

3.2.6. Dissemination of information through printed, audiovisual, and electronic means. It will be developed to help ensure the scaling up, by describing individual steps involved in the process and describing tested approaches and tools.

156. During the inception stage, the project will develop an effective communications strategy and invest specifically in disseminating information and awareness of the program in order to ensure that major stakeholders, population and communities are informed, convinced and involved.

157. **OUTPUT 3.3.: Strengthened Institutional capacities for the systematic monitoring of climate change, in order to prepare and inform stakeholders about the development of significant weather events and/or gradual changes.** Some of the activities are the following:

3.3.1 Modernization and expansion of the different hydrometeorological networks of the country through automated technological equipment and instrumentation.

3.3.2 Development and adaptation of information systems of satellite imagery, integrated information system in disaster risk management, systems of updated digital geographic and cartographic information for analyzing threats, which allows for better planning, thus reducing the impact of hydrometeorological events.

3.3.3 Systematization of information about climate variability by territory of interest: farming, water or coastal priority.

158. Despite being different regarding the approach, components 1 and 2 mutually reinforce each other, specifically regarding the protection of life conditions and guaranteeing food safety, which results in the reduction of vulnerability of human population and the natural environment. At political level, both components are part of the National Strategy on Climate Change (ENCC, for its name in Spanish). The programme has the possibility of generating a series of beneficial effects for the environment such as soil fertility and conservation, and water availability. These two components are complemented with the capacity development approach (Component 3), which intends to guarantee that the programme results are sustainable throughout time by creating local capacities and awareness interventions.

159. These measures aim at reducing sensitivity and variability to climate change. The programme has identified the vulnerability levels of different areas of the country through a specific study carried out by the IMN[21] –which is well known for its expertise regarding vulnerability, adaptation and mitigation at a national level. The long-term result of the programme is the protection of life conditions and natural resources for the benefit of those people living in the beneficiary communities and for the country in general.

[21] National Meteorology Institute

Table 12 Synthesis of activities, including contribution to climate resilience and beneficiaries

Objective	Output	Activities	Contribution to resilience	Expected Co-benefits	Beneficiaries	Geographical Scope
Component 1: Increasing the adaptation capacity to climate change in the agricultural sector	**1.1**	1.1.1 Implementation of new farming zoning scenarios in the selected communities according to their respective vulnerability	Land-use planning will be based on the available vulnerability indicators The climate vulnerability diagnostic per zone will allow the zone modification or displacement of land-use activities, primarily in the most exposed farming zones.	Greater production efficiency (increase of yields and better water use) Strengthened current agricultural productivity Meet food production and food safety trends. Reduction of money losses for beneficiaries. Reduction of land, soil and water degradation Reduction of the impact of agricultural activities on water and soil Improvement of wastewater quality in farming activities Reduction of pollutants on soils, aquifers, fauna and others Valued added on products	Direct: Agricultural producers. (at least 1.000 beneficiaries) Indirect: local and national society (communities)	Central Region **Huetar Norte Region (Upala)**
		1.1.2 Identification of farming technical options that can be adapted or implemented in order to enhance the resilience to Climate Change (droughts, heat, intensive rain, plagues, and others) and validation of technical options by areas.	The identification of alternative technical options based on their potential to increase climate resilience will allow the subsequent implementation of such options, which will enhance climate resilience. Examples of validated climate resilient technical options include crop intensification, post harvest practices, water use efficiency, diversification of production, promotion of agroforestry, etc.			
		1.1.3 Implementation of validated technical options for climate resilience enhancement in agriculture	The effective and efficient implementation of the identified climate resilient options will enhance climate resilience.			
	1.2	1.2.1 Creation of an agricultural insurance and insurance policies programme including criteria on climate resilience.	Such insurance aims at strengthening the farmers' financial resilience in the event of crop losses for instance, which would in return ensure the sustainability of the measures identified in output 1.1 and that aims at building climate resilience. Furthermore, an insurance that includes criteria on climate resilience will be an economic incentive to producers to adapt to climate change and therefore has a sustainability effect beyond the programme.	Improvement of landscape Protection of biodiversity	Direct: Agricultural producers and at least 5 micro financing institutions	National level
		1.2.2 To facilitate access to revolving funds to agricultural producers to implement sustainable management practices for lands, and implement strategies to adapt to climate change and/or invest in new rural economic activities as contingency for the impact caused by climate change.	The access to such funds will allow and accelerate the financing of climate resilience activities, which will contribute to enhance climate resilience.			

Component 2: Improving water resources management in order to increase resilience in coastal communities that are more vulnerable to climate change	**2.1**	2.1.1. Creation of water safety pilot plans at the district and regional level to mitigate risks of water shortage or overage and to implement irrigation management plan, through an infrastructure vulnerability assessment.	An engineering vulnerability assessment of the infrastructure (mainly wastewater and water resources) will leads to the reinforcement of those infrastructures' resilience to climate variability.	Establishment of a comprehensive water resource management Reinforcement of Capacities in GIRH and CC for: ASADAS, Municipalities, universities, others. Protection of biodiversity Leverage of financial resources to implement further adaption measures	Local communities Public and private organizations that invest resources in protecting water resources. SME (small and medium size enterprises)	10 Cantons: Nicoya Hojancha Nandayure Osa Aguirre Puntarenas Matina Limon Siquirres Talamanca
		2.1.2. Development and implementation of Management Plans for selected watersheds.	A watershed management plan that integrates climate risks will contribute to enhancing climate resilience by taking into account the climate variables that are affecting or will affect the watersheds in the near future, which will allow the identification of appropriate adaptation responses.			
	2.2	2.2.1. Implementations of measures to protect aquifer recharge areas	Measures to protect aquifer recharge areas will contribute to enhance climate resilience by mitigating the negative effects of sea level rise.	Availability of water resources Reduction of wastewater Help with the rational use of water Economic benefit due to a reduction in water consumption Reduction of contamination in water and aquifers More availability of non-polluted water		
		2.2.2. Planning and design of infrastructure for water use and distribution aiming at the adaptation, modernization and improvement in order to enhance climate resilience	Once adapted and modernized, infrastructures that are planned and designed considering the climate risks will be more resilient to adverse events that may affect the water quality and availability, such as sea level rise, shifting precipitation and temperature changes.			
		2.2.3.To promote revolving funds to Local water management associations, national water systems to implement sustainable management practices for water	In instances where access to capital is identified as a barrier, the programme will support the developers in order to facilitate the access to existing refundable funds aiming at reinforcing climate resilience of water systems. Since the access to such funds will allow financing climate resilience activities, therefore this activity will contribute to enhance climate resilience.			
	2.3.	2.3.1. Design and implementation of coastal protection and restoration measures	The restoration and protection of coastal areas will preserve or re-establish the environmental services brought by natural coastal protection such as sand dunes, mangroves and seagrass beds. As a result, climate resilience in coastal areas will be enhanced.	More protection of water and coastal ecosystems Increase of resilience of ecosystems that protect superficial and underground water sources through the participation of communities in protecting critical ecosystems. Protection of biodiversity (mangroves and coral reefs)		
		2.3.2. Development a comprehensive management plan for coastal-marine resources and sustainable productive activities	The development and implementation of a management plan for coastal-marine resources and sustainable productive activities at the Dulce and Nicoya Gulfs and Central-Pacific coastal districts will integrate climate risks in order to			

			identify good practices, which will lead to enhanced climate resilience.			
		2.3.3. Development and implementation of strategies for preserving and recovering mangroves	Coastal planning can adapt to facilitate mangrove migration with sea-level rise. Additional adaptation options include: * Management of activities within the catchment that affect long-term trends in the mangrove sediment elevation * Better management of other stressors on mangroves * Rehabilitation of degraded mangrove areas The implementation of such adaptation measures has the potential to improve resilience to climate change and offset anticipated mangrove losses.			
Component 3: Capacity building about the risks of climate change, in order to improve the readiness of stakeholders	**3.1**	3.1.1. Development and implementation of Early Warning Systems (SAT, for its name in Spanish), district risk reduction plans	Component 3 activities aim at improving climate resilience through information dissemination, awareness building, training, and knowledge exchange mechanisms. Component 3 activities consist in capacity building tools that are all crucial to the successful implementation of component 1 and component 2 activities, which contribute to enhance climate resilience.	Faster and more effective response to events Reduction of risks -due to the increase in the training of communities	All stakeholders (institutions, organizations and private companies) that are related to climate change. Communities in the study area	Will include geographical scopes of component 1 and component 2
		3.1.2.Preparation of communities in the development of Early Warning Systems, district risk reduction plans				
	3.2	3.2.1 Mapping and consultation, from the different stakeholders, to determine the level of knowledge and awareness about climate change.		Improved knowledge, a catalogue of good practices, innovative instruments, and lessons learned about adaptation. Rationalization of resources		
		3.2.2. Promotion and training regarding the creation of new rural economic activities due to the impact of climate change, including technical and financial considerations.				
		3.2.3 Programs of public information and awareness about the problem and measures to adapt to climate change according to the vulnerability area				
		3.2.4 Workshops among community organizations, professionals, technical groups, producers, and beneficiaries in order to exchange knowledge and experiences				
		3.2.5 Systematization of lessons learned and good practices				

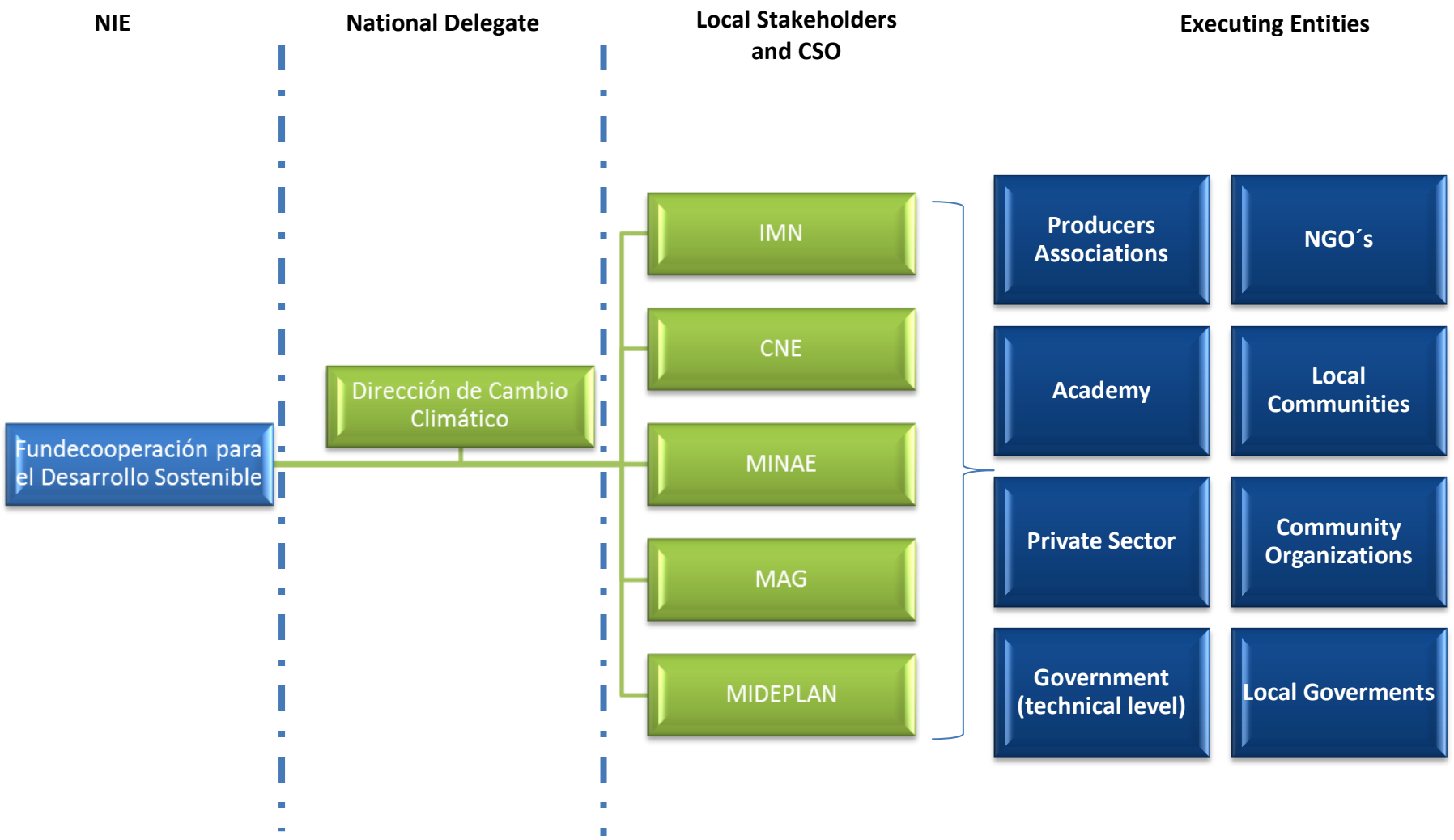
		3.2.6 Dissemination of information through printed, audiovisual, and electronic means.				
	3.3	3.3.1 Modernization and expansion of the different hydrometeorological networks of the country through automated technological equipment and instrumentation.		More knowledge about the impacts on climate and adaptation measures		
		3.3.2 Development and adaptation of information systems of satellite imagery, integrated information system in disaster risk management, systems of updated digital geographic and cartographic information for analyzing threats and reducing the impact of hydrometeorological events.				
		3.3.3 Creation of risk maps by using models for developing future climate scenarios.				
		3.3.4 Systematization of information about climate variability by territory of interest/farming, water or coastal priority.				

Programme Strategy

160. The application structure includes a direct link and coordination between the National Implementation Entity and the local executing entities that work directly with communities in order to implement direct adaptation activities. The programme, understood as a process, a plan or an approach for addressing climate change impacts that are broader than the scope of an individual project. It is through the implementation of individual projects, that the programme will implement each of the components and activities established in the proposal, as it involves different organizations and beneficiaries. The strategy is based on the fact that adaptation at community level is required, and it requires awareness, knowledge, and improvement of capacities.. In order to guarantee the success of the expected outcomes and to generate a greater impact on the communities, the programme must: Monitor and assess the efficiency of adaptation initiatives; identify which activities are efficient to help the communities adapt to climate change, and which do increase the resilience of the ecosystem

161. The three components previously described target communities at high risk of experiencing extreme climate changes, with low present and/or future availability of water due to climate vulnerability and that are less capable of facing climate variability. The approach by communities (bottom-up) allows the programme to have tangible impact on the most vulnerable households, with a stong emphasis on those led by women and people with high poverty levels. Thanks to the experience of Fundecooperación, the program promotes full coordination and collaboration at all levels of stakeholders and sectors (academia, private sector, NGOs, government, civil society).

Figure 18: Organization Chart for Implementing the Strategy



Bottom-up approach.

162. The main objective of the programme strategy is to ensure that local communities in focal areas have reduced vulnerability and increased resilience to impacts of climate change. In order to do that, the selected approach established by the Designated National Authority and Fundecooperación para el Desarrollo Sostenible allowed different Executing Entities (Figure 18.) to have access to the adaptation funding, by submitting projects for the execution of the proposal activities at the local level.

163. A Programme Screening Methodology was developed as part of the process (Annex 2) to identify suitable local adaptation initiatives and solid Execution Entities. The purpose of the prioritization methodology is to use a standardized, local-driven process to identify a short list of adaptation opportunities or activities in a given sector that meet a region's specific needs and that is aligned with pre-existing policy frameworks. A participatory and inclusive approach is essential to sustainability and it is acknowledged that there is a great need to empowering local organizations, and building capacity for the implementation of adaptation efforts at the local level.

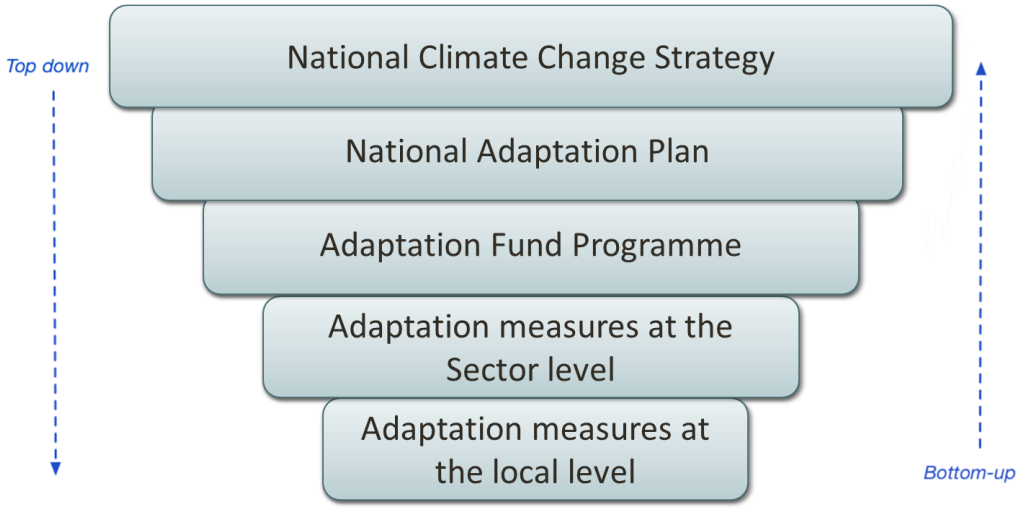


Figure 19 Local decision-making and community participation

B. Describe how the project / programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project / programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy of the Adaptation Fund

164. The programme will provide significant economic, social and environmental benefits to communities selected previously (see component description). Costa Rica faces multiple hazards and shows a wide variety of vulnerabilities to climate change, which will result in rural communities and ecosystems negatively affected. “The greatest vulnerability occurs in the country’s border and coastal zones – with rural characteristics. Rural vulnerability is due to low human and infrastructure conditions related to poverty.” (IMN/PNUD, 2011)

165. An important analysis was made, in order to choose the most vulnerable regions in the country regarding each of the components selected. Aspects such as: poverty, provision of basic services, basic dimensions of human development, productive activities, important biodiversity spots, and current-future vulnerability. As a result, vulnerable groups benefiting from this programme include:

- Rural communities: livelihoods are highly dependent on climate, particularly for those communities that are considered the most vulnerable. The main actors are the municipalities, the local development associations, the Administrative Associations of Rural Water and Sanitation Systems (ASADAS), the cooperatives and other associations and peasants.
- Local farmers and fishermen’s (micro, small and medium size):
    - Local farmers: the programme will help improving their production systems using a low cost/organic/nontraditional approaches that would contribute to increase their productivity, maintain their income and their resilience to climate change.
    - Fishermen´s: adaptation activities would promote repopulation of vulnerable species in order to increase the resilience of reef systems and contribute to long - term sustainability of the fishing activities in the selected areas.

- Women: specifically women-headed households will benefit from improvements on water quality protection, implementation of sustainable and organic measures for agricultural sectors and the support of local fisheries.

Beneficiaries:

166. Benefits distribution: Programme activities are expected to combine social, environmental and economic cobenefits to the local communities, responding to local priorities in order to deliver specific adaptive initiatives where needed. Through capacity building and knowledge management among beneficiaries, it is expected that benefits extend beyond its immediate zone of application (replication among other communities with similar needs). Consequently, the programme is expected to have impacts and benefits beyond the selected communities. The implemented measures will have immediate local impacts as well as secondary impacts: protection of natural resources, improvements in soil fertility, and protection of agricultural lands. Similarly, initiatives such as the rehabilitation of water infrastructures are expected to benefit not only the ASADAS, but also the communities that are going to receive improved quality water services and the protection of their limited resources.

167. The beneficiary regions and sub-regions (cantons) are detailed in **Table 12**: **Synthesis of activities, including contribution to climate resilience and beneficiaries.**

Strategy

1. Build on existing capacity

168. The main goal of the programme is to develop practical experience in implementing adaptation measures in the selected sectors and, ultimately, to improve climate resilience. The programme concept (strategy of implementation, cost-effectiveness, identification and follow up of impact and results) is based on Fundecooperación's cumulated experience in programme management. Fundecooperacion has a strong knowledge of the communities and local organizations' needs, having developed long-term relationships with them

throughout the years. Moreover, Fundecooperacion has developed a relevant set of expertise throughout the years (climate change impacts, water resources management, agriculture and coastal management), which avoids duplicating efforts and guarantees the effectiveness of the actions to be performed within the programme.

169. It is important to mention that adaptation projects, which promote the execution of specific and concrete actions, have not been implemented in Costa Rica. Most of the initiatives implemented so far are rather focused on researching on the impacts of climate change in specific regions and determining the measures that should be implemented in each sector or region. Those research projects allow us today to select the sectors that are priority for the country and the communities that, as result of their vulnerability, need to implement adaptation measures as soon as possible.

2. Participative, Consultative, and Agreed Process.

170. In order to manage the hazard faced by the country due to climate change, the agricultural and water management systems must be strengthened. This requires a planned adaptation, an approach based on the community that allows the adoption of decisions regarding their own development. The guiding principles of the programme will be: equality, reciprocity and the participation of all interested social stakeholders. Therefore, different sectors and levels of the society are involved. The programme promotes the full coordination and cooperation in all management levels and sectors (academia, private sector, NGOs, government, civil society) in order to guarantee that the socioeconomic and environmental benefits reach the local level. Thus, the capacity building at all levels will help reach the benefits at national, province, and local levels, and will allow sustainability (economic, social and environmental) beyond the financing period of the programme.

3. Monitoring and Follow-up.

171. The improvement of the living conditions, the perspectives, the strengthening of the organizations and adaptation capacities will prevail. The programme will be focused on the

immediate and strategic interests of those that are the most vulnerable, through the identification and the monitoring of activities, in a participative and bottom-top approach. Investments will focus on adaptation as well as on the improvement of the response capacity to existing risks, thus providing better access to technologies and technical assistance that allow resilience to climate change.

- The investment in adaptation mechanisms, education, systematization, feedback with the interested parties, and two-way responsibility (beneficiaries / parties as facilitators of inputs) will be essential to ensure the programme's sustainability. Supervision will be based on best practices, technologies and experiences accumulated in each component and widely available in the literature and made available by several recognized research institutions (guidelines, training materials, documents about policies, research reports, statistics, etc.).

172. **Environmental, Social, and Environmental Impacts** At the local level, there will be at least 25,000 beneficiaries, more than 50 communities and more than 60 local organizations involved in the implementation of adaptation measures. It is also important to mention that several of the activities, such as the revolving funds, will allow to impact an increasing number of beneficiaries over time.

- The specific social benefits of the programme are the following:
  - ✓ Increase of capacities and adaptation capacity in all the components of the programme . It is expected to train more than 3,000 beneficiaries on adaptation measures (50% women).
  - ✓ Active community participation. At least 50 communities are beneficiaries of the adaptation measures implemented. Each of the activities involves the participation of organizations at the local level.
  - ✓ Capacity building among social groups The programme will improve the levels of understanding of climate risk and adaptation to climate change to:
    - More than 60 stakeholders.
    - 500 policy makers and technical officers

    - 300 community representatives (traditional leader, women and young groups)
  - ✓ Improvement of food and nutritional safety in rural communities. Technological showcases implemented: 90 agricultural adaptation practices with replication potential
  - ✓ Efficient management of water resources for the benefit of the community: At least 25,000 inhabitants have their water supply and associated infrastructure improved to manage climate-induced impacts on water supply.
  - ✓ Decrease in the occurrence of diseases related to climate change
  - ✓ Food security: the geographical scope selected for the first component responds to the necessity of food security, since 63% of the urban and rural population lives in the central part of the country. At the same time, the area has the largest number of micro, small and medium size producers, which falls under the scope of family farming or small-scale farming.
- Economic Benefits:
  - ✓ Reduction of production losses due to the negative effects of climate variability
  - ✓ Increase of productivity and quality of local production
  - ✓ Increase of the capacity to face climate variability
- Environmental Benefits:
  - ✓ Soil preservation: One of the most important environmental benefits of the agricultural zoning tool is soil conservation and decreased erosion. For this reason, 13 ZAE maps for selected crops are going to be developed in the central Region and 4 technological showcases are going to be implemented in important agricultural communities such as Naranjo, Puriscal, Dota and Pacayas.
  - ✓ Reduction of erosion and sedimentation
  - ✓ More availability of water for production and consumption
  - ✓ Improvement of access to water supplies
  - ✓ Protection of ecosystems in coastal areas (including coral reefs and beaches): 10 coastal communities implemented at least one adaptation measure and 8 km of coastal areas are protected or reforested.

- ✓ Development of adaptation plans in community water supplies associations (ASADAS) for the protection and preservation of natural and physical assets in the area
- ✓ Adoption of good practices that will be continued through continuous work with community groups and with public and private entities as well

173. Regarding gender, it is important to emphasize that gender equity is a cross-cutting theme in each component included in the programme. Both, men and women will be benefited from interventions in communities. Costa Rica has a good record in terms of gender equity since the last decades. The country was ranked 2nd out of 86 in the 2012 Social Institutions and Gender Index. According to the world bank, the ratio female to male labor force participation was 75% in 2012, more than the average in Latin America and the Caribbean[22]. On the political side, in 2010 Costa Rica elects the first female president, Laura Chinchilla-Miranda, and the parlament representation is aprox 40% women. Apart from those political gains, women in Costa Rica are very educated, especially when compared to the average female population in Latin America. Educational reforms, which guarantee free and obligatory education, have enabled most of the population (93%) to be literate. Given this high educational level, women in Costa Rica can be professionals in any career.

Sustainability

174. The programme promotes initiatives that will continue to provide results beyond the year of implementation. As an example, the restoration and improvement of water systems have long-term lifespan. However, those initiatives require regular maintenance after the implementation, as it is mentioned in "Figure 18: Organization Chart for Implementing the Strategy". The participation of local organizations, government, NGO´s and specially the commitment of local beneficiaries (individuals and organizations) make possible to preserve and even continuously improve the initiatives.

[22] http://datatopics.worldbank.org/gender/country/costa-rica

175. The proposed activities are supported by training and capacity building of local communities beneficiaries, associations, organizations and governmental institutions in each of the selected areas. The activities are enforced by combining long-term incentives, benefits and socioeconomic outcomes. However, it is necessary to take into account that not all adaptation needs in the communities can be addressed with the programme. For this reason, the component 3 is oriented to create momentum and up scalability through the creation of capacities and knowledge management. Capacity building, promotion of best practices and exchange of lessons learned will make possible to replicate and upscale the initiatives, at the same time increasing Costa Rica‘s capacity to manage climate change adaptation issues.

C. Describe or provide an analysis of the cost-effectiveness of the proposed project / programme.

176. In order to achieve a cost-effective implementation, the proposed programme includes: first, a strong focus on capacity building (third component) that involves the participation of relevant stakehlders at several levels, from the political level, including the technical one, and also the creation of capacities at the local communities. Secondly, also a strong focus has been made to promote a multiplier effect of all individual projects, so it will be possible to have a relevant impact on a wider number of people who are indirectly involved in the project: especially through the dissemination of information, structured as a methodological tool, a wide number of citizens and civil society organizations will acquire new skills to better participate in the life of the community (this criteria was included as an evaluation aspect in the Screening Methodology). And, the exchange of knowledge through peer-to-peer learning, that is a powerful way to share, replicate, and scale up what really works, by learning from the practical experiences of those who have gone through similar challenges.

177. The programme's activities (the 3 components) require investments on the rehabilitation of key recharge zones, water management systems and coastal wetland protection, as well as restoration of coastal and shoreline productive activities, zoning (to reduce risk and to optimize land use) and implementation of integrated farming systems. This kind of investment is expected to generate long-term benefits in terms of resilience.

178. Complementarily, activities related with knowledge management and capacity building involve technology transfer among beneficiaries, technicians, private-public organizations searching to switch from traditional resource uses, methods and management practices to new technologies or measures that increase the resilience of farmers, water organizations and fishermen.

179. As an important knowledge management approach, knowledge exchange mechanisms are promoted among communities and organizations as well as capacity

building, which will ensure adaptation on local planning processes as well as better decision-making by involving local stakeholders on topics such as climate change, resilience and adaptation in agriculture, water and coastal areas management. At the same time, the exchange of knowledge will lower the operational costs and increase benefits due the opportunity of replicating best practices and lessons learned amongst communities.

180. The implementation of this programme is highly significant because it discusses a series of key issues for Costa Rica:

- ✓ The beneficiaries of the programme are amongst the most vulnerable population of the country: communities with low human development indicators, highly dependent on natural resources. It's expected through the programme to integrate appropriate considerations of climate change and variability into strategic planning and daily practices among beneficiaries.
- ✓ The participatory approach and processes (a multi-stakeholder participation) both at the time of design and implementation of the programme will allow improving capacities of governmental organizations, civil society organizations, producers associations and NGOs

181. During the implementation of the programme, it is expected to have counterparts that allow reaching a greater impact. Based on the aforementioned, the cost-effectiveness of the proposal is based on recognizing the importance of the problem addressed through the programme where, in absence of the programme, the scenario will be the continuous deterioration of the Costa Rican ecosystem and increased vulnerability of life systems. Hence, the programme will emphasize on the effectiveness of the outcomes and impacts to be achieved with each component and, at the same time, on the profitability of all activities of the programme.

182. The resources of the adaptation fund will not be the only income for the programme, but they can help leverage other resources:

- Complement of investments and leverage by the creation of synergies: It is expected that the direct beneficiaries and main participants of the programme will have assets or partial resources readily available for executing the programme. First, the human resource that takes into account the human capital, accumulated skills and capacities and, probably, at large scale, workforce. Second, by providing their own assets or controlled assets: land, natural resources, facilities, and other physical assets, and also their capital stock resources (family relationships, community organizations, associations, etc.). As it is mentioned above, an active participation of local institutions and beneficiaries is expected, relying on the execution of local knowledge and expertise, which reduces the cost of implementation and enhances sustainability of outputs. . The estimated amount of counterpart funding of the programme is: $4.500.000 (US equivalent).
- Moreover, executing organizations will also provide their knowledge, networks, skills, facilities, etc. for implementing the initiatives. To do this, Costa Rican experienced professionals, technicians and researchers will be hired, which is more profitable than hiring expensive consultants from other countries (expected only if the know-how is not locally available), and promote the strengthening of local capacity of people and organizations that stay in the country.
- The programme's priority is to promote commitment and co-responsibilities for developing adaptation activities:

  First, in its role as platforms for expanding alliances for sustainable development, promote the interest and local associations among the different interested parties (governmental institutions, civil society, private sector, academic institutions).

  Second, in leveraging national financial, human and physical resources (for example, promote the co-responsibility and co-financing in executing the activities, or the assignation of personnel, equipment, facilities, transportation, among others).

  Third, the adoption of high quality standards measures, the investment in the transparent and agile monitoring, accountability and reporting mechanisms, the promotion of values and practices related to actual participation, transparency, cooperation, respect to different identities, etc. since they provide credibility and the good operation of the execution of the programme.

The institutional strengthening and the creation of local capacity will provide substantial benefits as it will help minimize damages and losses related to extreme weather events through greater awareness and knowledge, while the ordinary expenses to finance the impact of climate change post investment will be reduced.

183. Operationally, the resources of the Adaptation Fund will be carefully managed to reach the efficiency and the quality-price relation. The control measures include:

- Ensure that procurement procedures are appropriately implemented
- Assess costs-quality (value for money) and implementation of cost benefit analysis
- Effectively use of limited resources and operational costs
- Products and services acquired will be governed by rules established by the AFB.

Component 1 (Amount: US $3.160.000). The component aims to:

184. Improved land management and interventions including zoning (to reduce risk and to optimize land use) and introduction of climate resilient crops, livestock adaptive technologies and integrated farming systems. Number of beneficiaries: 1000 beneficiaries

BENEFITS FROM PROPOSED INTERVENTION	ALTERNATIVE INTERVENTION AND REASON FOR NOT OPTING FOR THIS
• The mentioned techniques can build climate resilience through managing competing land-use systems, while at the same time reducing poverty, enhancing biodiversity, increasing yields and lowering greenhouse gas emissions. • Also, increases nutrient cycling, water redistribution, provides shade, controls erosion, increases carbon stocks, etc. • The project will build the capacities of farmers, communities and local institutions and will thus ensure a sound decision-making process for integrated resource	• Conventional farming systems share many characteristics: o Large capital investments in order to apply production, investments that local communities are not avle to apply. o Use of inorganic products in order to increase productivity however it declines soil quality over time. o External energy inputs; among others. • Conventional techniques increased problems

planning and management that takes into account local climate risks. Building local capacity will reduce the need for financial resources and other support from the government. • Capacity building to diversify food production through practices such as agro-forestry, inter-cropping etc., which will increase agricultural productivity • The participatory approach involving local people in managing natural resources and adaptation planning will lower management costs and will sustain the outcomes over time. • Strengthening the farmers and community groups' organizational capability and increasing their knowledge on issues related to climate change and variability will allow the beneficiaries to adapt to new climate scenarios if needed and ultimately reduce their dependence on external interventions.	as the growing pressure on land, and rapid deforestation.

Component 2 (Amount: US $3.200.000)

185. Supports the protection of recharge zones, surface waters and groundwater, strengthens coastal communities that are vulnerable to climate change and promotes technologies that allow the efficient and effective use of water resources (including measures that allow the effective management of water supply and demand) and improvement of infrastructure to be resilient to hydro-meteorological events. Number of beneficiaries: 25,000 inhabitants.

BENEFITS FROM PROPOSED INTERVENTION	ALTERNATIVE INTERVENTION AND REASON FOR NOT OPTING FOR THIS
• More efficient use of existing water supplies can delay the need for new additional water	• Implementation of watershed plans without considering adaptation measures and

supply options. o Some of the expected results are: Reduction in the water leakages in the system o Reduction of the hours without service per year o Improvements in the water quality o Improvements in the physical infrastructure of the aqueducts and its maintenance o Improvements in the availability and sustainability of water sources • The project will build the capacities of communities, fishermans and local institutions and will thus ensure a sound decision-making process for integrated resource planning and management that takes into account local climate risks. Building local capacity will reduce the need for financial resources and other support from the government. • Strengthening community groups' organizational capability and increasing their knowledge on issues related to climate change and variability will allow the beneficiaries to adapt to new climate scenarios if needed and ultimately reduce their dependence on external interventions.	responses related to climate change. • Operators (ASADAS - community-based water management organizations, Municipalities managing aqueducts, Water and/or Irrigation Users Associations, among others) without Water Safety Plans. The creation of plans allows to previously have measures and protocols that should be implemented to reduce their risk and improve their response capacity in case events such as droughts or flooding occur. • Management of water resources without information and knowledge about all possible threats to water quality, including climate-related impacts such as increased peak flows and turbidity. • Local water management associations and national water systems in communities currently do not protect important aquifer recharge areas.

Component 3 (Amount: US $2.000.000)

186. The first two components are complemented with the approach for developing capacities (Component 3), which is intended to guarantee that the programme outputs are kept through longer time by creating local capacities and awareness interventions. It must be taken into account that these are not independent activities, and they are complemented with other initiatives that have been already started in the country. This

component will upscale the interventions within and around the target area that depend on natural resources and are most vulnerable to the impact of climate change.

187. The cost effectiveness of the proposed project is closely linked to the approach of increasing local resilience through the empowerment of local and community-based institutions, seeding initiatives (e.g. revolving funds and insurance schemes), establishing new partnerships with civil society organizations and disseminating information..By implementing this project in a community-driven and participatory manner, the impact of the project will contribute to greater abilities of local communities.

188. It is expected to impact the geographical areas selected and more than 25,000 inhabitants. The capacity building process of the programme allows training local leaders who will be able to build capacity within the communities themselves.

D. Describe how the programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, sector strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

Background Information about International Commitments

189. The agenda on climate change is positioned at the highest level of national and international commitment. Costa Rica, by Law 8219, ratified the Kyoto Protocol from the United Nations Framework Convention on Climate Change (UNFCCC), which recommends the application of a series of actions such as:

- ✓ Formulate national programmes to improve the quality of emission factors, activity data and/or local models that are effective regarding the cost and that reflect the socioeconomic conditions of each Party for the periodic creation and update of national inventories of anthropogenic emissions by sources and of absorption by drains of all the Green House Gases (GHG) that are not controlled by the Montreal Protocol.
- ✓ Periodically formulate, apply, publish and update national programmes (National Communications) that contain actions to mitigate climate change and ***facilitate an*** *adequate* ***adaptation*** to it. These programmes will keep a relationship, among other things, with energy, transportation and industry sectors, as well as with agriculture, forestry and waste management.
- ✓ Help promote and share technologies, specialized knowledge, ecologically rational practices and processes regarding climate change.

190. Based on article 4 from Law number 7414 that deals with the Convention, Costa Rica makes the following commitments:

- ✓ Periodically create and update national inventory of anthropogenic emissions by sources and of absorption by sinks of the Green House Gases (GHG) that are not accounted under the Montreal Protocol.

- ✓ Periodically formulate, apply, publish, and update national programmes aimed at mitigating climate change.
- ✓ Promote the sustainable management of sinks and reservoir of the Green House Gases (GHG) that are not controlled by the Montreal Protocol.
- ✓ ***Develop and create appropriate and integrated plans for the regulation of coastal areas, water resources and agriculture.***
- ✓ ***Include the considerations related to climate change in the corresponding social, economic, and environmental policies.***
- ✓ Promote and support the scientific, technologic, technical, socioeconomic and other types of research.
- ✓ Promote and support education, training and awareness of the public regarding climate change, and promote the participation in this process, including non-governmental organizations.

National Agenda on Climate Change

191. Based on the aforementioned guidelines of national policy, Costa Rica intends to assume a leadership role regarding climate change and become a neutral carbon country by 2021, so that its model can be replicated internationally, and influence the world climate agenda. To do this, the country formulated and adopted the National Strategy on Climate Change (*Estrategia Nacional de Cambio Climático*), which purpose is:

Reduce the social, environmental and economic impacts of climate change and take advantage of opportunities by promoting the sustainable development through the economic growth, social progress, and environmental protection through mitigation initiatives and adaptation actions. Costa Rica aims at improving the quality of life of its inhabitants and its ecosystems, by leading towards a low-carbon and competitive economy by 2021. This shared responsibility must occur by developing capacities and legitimacy to influence the National Agenda and the International Agenda as well.

192. The National Climate Change Strategy (*Estrategia Nacional de Cambio Climático* - ENCC) is a governmental initiative that aims at responding to the world problem of climate change in the country, with a strong participation of the different participants and sectors. To do this, the strategy includes the following strategic work themes within the national and international framework:

- ✓ Mitigation of greenhouse gases
- ✓ **Adaptation to climate change to reduce the vulnerability of the main sectors and regions of the country**
- ✓ Accurate, reliable and measurable metrics for he monitoring, reporting and verification (MRV) process
- ✓ Development of capacities and transparency of technology
- ✓ Financing
- ✓ Public awareness, creation of culture and change of consumption habits.

193. The ENCC allowed developing an International and national agenda on climate change. The National Agenda is intended for adaptation and mitigation measures along with five important themes: Metrics, Capacity building and technology transfer, public awareness, education and cultural change and Financing. Adaptation must focus on reducing vulnerability and risk to the impacts of climate change according to the sector: water, agriculture, fisheries, health, infrastructure, coastal zones and biodiversity.

194. The programme is identified within the framework of an active climate policy that recently formulated and adopted the Action Plan for the National Strategy on Climate Change (***Plan de Acción para la Estrategia Nacional de Cambio Climático***). The plan was formulated with participative approaches and reached the consensus and support of all sectors. Therefore, the programme is well aligned with the priorities defined and the actual needs of the most vulnerable communities of the country, and it will support the government's policy to manage the adaptation of ecosystems and the needs of the community regarding climate change in 3 main areas for the country: water resource, coastlines and agriculture.

195. The political – institutional framework is given by a set of national laws from the Constitution, a National Development Plan, the country's environmental laws, a National Strategy of Climate Change, a Carbon Neutral Country Program and specific sectorial frameworks:

- Policy for the Agrifood Sector and Costa Rican Rural Development 2010-2021
- Strategy and National Plan of Integrated Water Resources and Coastlines Management.

Table 13 Costa Rica's Legal Framework, policies and strategies-Alignment with Costa Rica Full Proposal

Legal Framework, policies and strategies	Alignment with Costa Rica's Adaptation Fund Programme	Reference
Constitution of Costa Rica	The highest legislative body of the legal system establishes the right to a healthy and ecologically balanced environment, appointing that the State must guarantee, defend and preserve this right.	Constitución de Costa Rica
National Strategy on Climate Change	The Estrategia Nacional de Cambio Climático (ENCC) is a governmental initiative that aims at responding to the world problem of climate change in the country, with a strong participation of the different participants and sectors. To do this, the strategy includes the following strategic work themes within the national and international framework: • Mitigation of greenhouse gases • Adaptation to climate change to reduce the vulnerability of the main sectors and regions of the country • Accurate, reliable, and measurable metrics (MRV) • Development of capacities and transparency of technology • Financing • Public awareness, creation of culture and change of consumption habits. According with the ENCC, adaptation must focus on reducing vulnerability and risk to the impacts of climate change on the following sectors: water, agriculture and livestock, fisheries, health, infrastructure, coastal zones and biodiversity. In the area of mitigation, priority actions are in the following sectors: Energy, Transportation, Agriculture, Industrial, Solid Waste, Tourism, Water and change of land use.	Costa Rica. Ministerio de Ambiente, Energía y Telecomunicaciones. 2009. Estrategia Nacional de Cambio Climático. San José, Costa Rica: Editor Calderón y Alvarado S. A.
Action Plan for the National Strategy on Climate Change	The Plan de Acción para la Estrategia Nacional de Cambio Climático (Action Plan for the National Strategy on Climate Change) assigns responsibilities and lines of action to ENCC. This Plan was formulated with participative approaches and reached the consensus and support of all sectors. Therefore, the programme is well aligned with the priorities defined and the actual needs of the most vulnerable communities of the country, and it will support the government's policy to manage the adaptation of ecosystems and the needs	

	of the community regarding climate change in 3 main areas for the country: water resource, coastlines, and agriculture, providing specific measures and activities at Short term (2014), medium term (2018) and long term (2021).	
National Development Plan	Political support on climate change adaptation is reflected in the National Development Plan 2006-2010, in which the axis of Environment, Energy and Telecommunications establishes the commitment to implement a National Plan on Climate Change, a National Plan of Integrated Water Resources Management and a Land Management Program. The National Development Plan 2011-2014 incorporates strategic objectives around the "carbon neutrality" and adaptation of climate change. Specifically, in the area of climate change mitigation, Costa Rica developed various measures, policies and plans. In 2007, the government adopted the unilateral and voluntary commitment to achieve carbon neutrality by 2021.	Plan Nacional de Desarrollo 2011-2014
National Water Policy	The National Water Policy (Política Hídrica Nacional, 2009) contains an axis of vulnerability and climate change adaptation. This policy proposes to maintain a constant monitoring of quantity and quality of groundwater, assess the effects of climate change on the hydrological cycle and develop capabilities in Community Water Supply Associations to create strategies to address the effects of climate change. The policy also promotes the incorporation of the climate change variable in water management in both the legal framework and public water policies, and proposes the establishment of Basin Councils as instances of consultation and coordination.	Política Hídrica Nacional
Water Agenda	The Water Agenda 2013 seeks to improve the adaptation capacity of the country, especially stocks and sectors most vulnerable to the impacts of climate change on water resources, for which adaptation measures are cut across all its 6 long-term strategic priorities: a) Cleaner rivers and aquifers protected; b) Improving governance of water resources; c) Efficient and equitable achievement for all uses; d) Investment for water infrastructure; e) A new water culture: restructure current practices, habits, perceptions of assessment and water resources in the country; f) Information for decision-making.	Agenda del Agua de Costa Rica

Policy for the Agrifood Sector and Costa Rican Rural Development 2010-2021	This policy is based on four themes: a) competitiveness; b) innovation and technological development; c) management of rural areas and family farms; and d) climate change and agro-environmental management. Within the last pillar will be promoted, among others, the creation of: 1) A national system of risk prevention, care and disaster management of extreme natural phenomena 2) Comprehensive regional and local risk management plans 3) Activities relating to the recovery of the production potential relocation of agrifood activities, production infrastructure, technology and new management practices. 4) Adaptation strategies through sectoral and cross-sectoral programs. In addition, the policy includes the implementation of activities related to knowledge management and capacity building in climate change through: a) a program of information and strengthening capacity; b) training, information and communication on climate change and environmental regulations; and c) a system of comprehensive information on variability, climate change and risk management. Furthermore, production initiatives with an ecosystem approach (soil and other assets) will be encourage, by existing compensation mechanisms and development of new ones, including a recognition program of environmental services for the food industry and the payment for environmental silvopastoral and agroforestry services.	Política de estado para el sector agroalimentario y desarrollo Rural de Costa Rica (2010-2021)
National Strategy for Integrated Management of Marine and Coastal Resources Coastal of Costa Rica 2008	The National Strategy involves implementing actions to assess and mitigate the impacts of climate change and promote adaptation measures. Among the strategic actions proposed are: a) Harmonize the National Marine Strategy with the National Climate Change Strategy. b) Identify areas particularly vulnerable to climate change and establish regulations for use. c) Design and implement a program to monitor climate change, including determining vulnerability in different scenarios and monitoring species and vulnerable areas. d) Develop awareness-raising of the population and especially the social actors involved in the use and management of marine and coastal resources on the impact of climate change. e) Support and promote the development of programs and projects by civil society organizations to support the study and mitigation of the effects of climate change.	Estrategia Nacional para la Gestión Integral de los Recursos Marinos y Costeros de Costa Rica

	f) Develop the criteria for the inclusion of measures to adapt to climate change. g) Promote mechanisms that decrease emissions to the atmosphere in the activities carried out in the ocean to become a carbon zero emission sector.	
National Risk Management Plan (2010-2015)	This plan is founded on the Law No. 8488: Emergency and Risk Prevention from 2006 and was prepared by the National Commission for Risk Prevention and Emergency Response. Includes, among others, "to promote risk management strengthens the impact of alternative development strategies that address environmental issues, particularly related to the management of natural resources, watersheds, climate variability and change and its related issues" and among its strategic actions, includes a goal for 2011 to develop a national strategy for variability and adaptability to climate change, as well as installing an early warning system by 2015.	Plan Nacional para la Gestión del Riesgo

In process	Alignment with Costa Rica's Adaptation Fund Programme	References
LEY MARCO DE CAMBIO CLIMÁTICO	The text of the proposal states that the Costa Rican government, autonomous bodies, decentralized entities, local governments, civil society organizations and the general public must adopt practices to reduce vulnerability and improve adaptive capacity.	LEY MARCO DE CAMBIO CLIMÁTICO
National Adaptation Plan	This Plan is being developed in order to implement the strategic actions to reduce the vulnerability of the priority sectors identified in the National Strategy for Climate Change, based on a methodological approach that integrates priority sectors: water, energy, agriculture fishing and coastal zones, health, infrastructure, biodiversity and the tourism sector, taking into consideration local governments (municipalities) as the main actor in the implementation of actions under a Cantonal scheme.	

International agreements	Alignment with Costa Rica's Adaptation Fund Programme	References
Law Nº 8219: Adoption of the Kyoto Protocol from the UNFCCC	Costa Rica ratified the Kyoto Protocol from the United Nations Framework Convention on Climate Change by Law 8219, which recommends the application of a series of actions such as: a) Formulate national programmes to improve the quality of emission factors, activity data and/or local models that are effective regarding the cost and that reflect the socioeconomic conditions of each Party for the periodic creation and update of national inventories of anthropogenic emissions by sources and of absorption by drains of all the Green House Gases (GHG) that are not controlled by the Montreal Protocol. b) Periodically formulate, apply, publish, update national programmes (National Communications) that contain actions to mitigate climate change and facilitate an adequate adaptation to it. These programmes will keep a relationship, among other things, with energy, transportation, and industry sectors as well as with agriculture, forestry and waste management. c) Help promote and share technologies, specialized knowledge, ecologically rational practices and processes regarding climate change.	Aprobación del Protocolo de Kyoto de la Convención marco de las Naciones Unidas sobre el Cambio Climático
Law Nº 7414 : United Nations Framework Convention on Climate Change (Annexes I and II).	Based on article 4 from Law Nº 7414 that deals with the Convention, Costa Rica make the following commitments: a) Periodically create and update national inventories of anthropogenic emissions by sources and of absorption by drains of the Green House Gases (GHG) that are not accounted under the Montreal Protocol. b) Periodically formulate, apply, publish, and update national programmes aimed at mitigating climate change. Promote the sustainable management of drains and deposits of the Green House Gases (GHG) that are not controlled by the Montreal Protocol. c) Develop and create appropriate and integrated plans for the regulation of coastal areas, water resources and agriculture. d) Include the considerations related to climate change in the corresponding social, economic, and environmental policies.	

	e) Promote and support the scientific, technologic, technical, socioeconomic and other types of research. f) Promote and support education, training, and awareness of the public regarding climate change, and promote the participation in this process, including non-governmental organizations.	
First National Communication to the UNFCCC	The First National Communication on Climate Change of 2000 summarizes the activities in the country as part of the commitments from 1994, when the Convention was signed. According to this statement, to determine the likely impacts and establish possible adaptation measures, studies were conducted in four specific sectors: water resources, coastal zones, agriculture and forest ecosystems..	Primera Comunicación Nacional 2000
Second National Communication to the UNFCCC	The Second National Communication on Climate Change of 2009 included an Assessment of vulnerability, effects of climate change, and adaptation measures, in which climate variability and climate change were characterized, as an import guide towards the understanding of current and future climate, crucial in the design of the ENCC.	Segunda Comunicación Nacional
Convention on Biological Diversity	In the last report of 2009, goals around climate change adaptation of Protected Wild Areas, strengthening research and evaluation of education and awareness programs were established.	Informe de Biodiversidad Biológica.
United Nations Convention to Combat Desertification	Costa Rica has ratified the United Nations Convention to Combat Desertification having submitted a National Action Plan, which includes the following objectives: a) to carry out a national diagnostic on the state of land degradation and its effects on the human population; b) to promote the implementation of the established legal framework in favor of Sustainable Land Managemet (SLM); c) to facilitate a greater participation of civil society in SLM; d) to promote SLM practices through appropriate technologies; e) to promote a culture of monitoring and evaluation; and f) to select a watershed for a pilot project. This Pilot Project involved a process of evaluation that included the following criteria: climate, degree of land degradation, concentration of land degradation, soil fragility, regeneration capacity, social development index, accessibility, and the demonstrative capacity of the watershed. The result was the selection of the Jesús María river watershed (JMRW) as the site for the Pilot Project.	Ministerio del Ambiente y Energía (2006). Tercer Informe Nacional para el Cumplimiento de la Convención de lucha contra la Desertificación y la Sequía (UNCCD). San José, Costa Rica.

E. Describe how the project / programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund.

196. Among the aspects considered during the creation of the programme have been the general regulatory framework that affect activities of the components mentioned, and that are related with the AF Environmental and Social Policy.

197. The Costa Rica Labor Law, which provisions are binding for all employers (Section 11 of the Code declares null and void any statement by the workers in which they waive the rights conferred to them by labor law). The Law of Environment (Law 7554) that establishes the regulations and the guidelines of technical tools for an Environmental Impact Assessment. The General Health Law (Law 5395) that recognizes of the Human Right to water and sanitation and establishes general obligations for the registration classification, control and imports of biomedical material and equipment.

198. The Constitution of Costa Rica provides the same rights, freedoms and opportunities for all individuals and prohibits any form of discrimination. Anti-discriminatory legislation were created and ratified. As example: Costa Rica ratified the Convention on the Elimination of All forms of Discrimination Against Women and the Inter-American Convention on the Prevention, Punishment and Eradication of Violence Against Women. At the national level, among other regulations, Costa Rica has created a technical standard that will allow companies to become certified in gender equality, which makes it the second country to have a tool like this of its kind in Latin America, after Chile. The INTE 38-01-01:2013 rule is by the National Institute for Women (Inamu, for its acronym in Spanish).

199. On the environmental field, the programme considers the Law 7554, the General Environmental Law which expands the right to a healthy and ecologically balanced environment that is recognized by Art. 50 of the Constitution (Art. 1). Also, creates the National Environmental Technical Secretariat (SETENA, for its acronym in Spanish) as a maximum decentralization body of the Costa Rican Ministry of Environment that is

responsible for balancing conservation with the need for development, particularly by evaluating environmental impact studies and recommending remedial actions.

200. Also, regulatory frameworks where the activities of the agricultural sector are developed were taken into account. First, Law No. 7664 Phytosanitary Law that establishes a complete set of general regulations about phytosanitary controls, and includes some specific provisions related to organic agriculture or other agriculture aspects. It established that the Phytosanitary State Service of the Ministry of Agriculture would handle the registration of producers and processors, supervising the compliance with the established procedures. Law 7779 regarding the Use, Management and Preservation of Soils should be taken into account. It establishes the correct and sustainable use of soil since 1998. Law 7779 has different main purposes. One of them is to promote the correct management of soils along with other natural resources, by which it takes into account the richness of the resources and the importance of its preservation. It also suggests facilitating mechanisms for integrated actions of related institutions in order to promote the inter-institutional planning, the usage capacity and the productive potential. One of its approaches is to promote the involvement of communities in the decision-making process related to the management and preservation of soils; this approach is in line with the development principles adopted by Costa Rica based on the Agenda 21 on the grounds of sustainable development. Finally, it aims at promoting improved practices to avoid soil erosion and deterioration, and promote agroecology, as strategies of preservation and sustainable use. The Law promotes the increase of soil productivity, as well as the increase of the land's vegetable cover in order to optimally enhance the use of soil. It also suggests a definition of areas according to its quality regarding number and characteristics.

201. Now, regarding Law 8591 for the Development and Promotion of Organic Agriculture Activity, it is important to emphasize its function to promote the agricultural activity in order to benefit human, animal and vegetable health. It is a complement for the development of public policies regarding the use of soil, water resource and biodiversity. The priority of micro, small and medium-sized producers and the needs of their families are emphasized, as well as the promotion of gender equity, the respect to cultural diversity and

the correct distribution of wealth. Moreover, it promotes the research related to the organic agricultural activity as a mechanism to control the certification processes and ensure the application of optimal sustainable productive methods. The Law on the Development and Promotion of Organic Agricultural Activity makes available the methods to strengthen the quality and number of producers that market their products with the name of "national organic product", as well as the quality and number of producers with harvest insurance for the organic agricultural production, due to possible catastrophes resulting from climate change. A specific paragraph in this Law shows the importance of promoting loans or other financing products offered for micro, small and medium-sized enterprises.

202. In a similar way, it is important to highlight the *Reglamento de Agricultura Orgánica* (Regulations on Organic Agriculture) Decree number 29782-MAG, which covers the principles by which the organic agriculture is developed in Costa Rica. Its purpose is to establish the guidelines to regulate the production, creation and marketing of organic agricultural products and regulate their production and certification processes. The Regulations establish the definition of terms of usability when referring to a productive process of organic agriculture, and it defines the minimum control requirements and precautionary measures for this production.

203. Regarding the regulatory framework of the water resource sector, there is a wide variety of ratified international conventions that cover this resource, either as cooperation agreements, patrimonial agreements or others. However, there are three key regulations regarding water. First, it is important to highlight the 1942 Water Law. This law is considered as the regulations of the water resource ordinance in Costa Rica. It covers the differentiation of public and private domain of the resource by which it intends to define the jurisdiction to be taken into account. It also emphasizes the use of water and the supply of drinking water. The Water Law establishes the special rules for easement, the creation of users associations, the establishment of taxes, criminal measures, and institutional management, among others.

204. As part of the legal framework of the Costa Rican water resource, the General Law on Drinking Water is proclaimed. It consists on a regulation to declare the public utility for the planning, projection and execution of drinking water supply works. Among the most important aspects of this Law, it establishes the institution that is in charge of ensuring the different distribution means of drinking water, as well as determining what institution is in charge of establishing the consumption fees. In regards to water resources, the Law on Water Resources was approved in 2002. This draft aims at regulating the public domain of water resources, structuring the institutional framework for their protection and proclaiming their right to be used. The promotion of the Human Right to have access to water, in quality and quantity, is highlighted since it is essential to fulfill the basic needs of the human being.

205. Costa Rica is part of original initiatives from the International Standardization Organization (ISO- a voluntary regulation); being a member of different technical committees, either as participant or as observer, targets the processes made in the country for the compliance with the international standardization.

206. In direct relation to the agricultural and water resource sectors, Costa Rica is member of four committees related to these topics. It is an observer in the technical committee of Foods and Energy Management, and it is a participant in the technical committees of Environmental Management. Each of them issues regulations that their members must comply in order to establish an international standard in products or means that will be involved in order to reduce trade barriers and international relations.

207. It is important to mention that, regarding the committees mentioned above, those where Costa Rica is a participant (Environmental Management), they are part of two areas of special interest for the country. Although the standardization of practices in these fields represents significant business and diplomatic opportunities, its due compliance deserves particular attention, as stated above. However, due to the effects of climate change and the variations with negative environmental incidence, there can be difficulties for the appropriate operation of the practices established.

208. Building codes and other construction, labor codes as well as the relevant sectorial laws and regulations that include adaptation measures from the inception of the infrastructure programmes will also be taken into account.

209. Although the programme is not pretending to deliver regulatory outputs, it is however considered possible that the impact and results obtained at local level could be a driving force to influence the existing legislation in relation to climate change adaptation. It is worth mentioning that the climate change office ("Dirección de Cambio Climático") and Fundecooperación wish the proposed program to become a reference for concrete and important local actions in adaptation to climate change, as well as on national and local strategic planning processes. As a result of that, there will be an opportunity to scale-up in more communities that the ones selected for the proposal; this will definitely increase the impact at local, regional and national level. This is planned to be facilitated through component 3.

210. The compliance with relevant national standards is included as an eligibility criterion in the Screening Methodology (see Annex I). Hence, each proposed project will have to demonstrate compliance in order to be considered by the programme.

211. The compliance of the programme with the Environmental and Social Policy of the Adaptation Fund is explained in the III Part, c., of this document.

F. Describe if there is duplication of programme with other funding sources, if any.

213. Costa Rica has different initiatives regarding climate change. A series of ongoing climate change initiatives do not deal with the adaptation needs specific to the communities and they do not deal with the effects of climate changes in regards to water-coastal resources and agriculture.

214. The programme design made a preliminary analysis of ongoing initiatives. The objective was to best practices, to avoid possible areas of duplication and to search for possible alliances and synergy among the programme and other initiatives and projects. It is important to clarify that, at this time, on the climate change adaptation matter, the country made concrete investments on researches to determine the vulnerability of the country in the areas mentioned (agriculture, water resource and coastlines and fisheries) and possible adaptation measures. However, no other adaptation project has been implemented to the level required by this proposal and in an integrated manner for local communities benefit. A list of ongoing related climate projects can be found in the table 14. Meetings and coordination actions have been conducted by NIE with all projects identified in table 14.

215. The programme supports the government's priorities by implementing joint activities with the most vulnerable populations by teaching climate change and development of activities at the community level. The designated authority –the Climate Change Direction, is the entity in charge of leading the efforts of the country in regards to climate change. Thus, the country guarantees there is no duplication of efforts with other projects financed by bilateral or multi-lateral entities. Moreover, during its formulation, the programme planned to complement the actions with other initiatives that are being implemented at a territorial level. To do this, a consultation process was made to interested parties such as organizations, public or private institutions that are implementing projects regarding climate change (mitigation and adaptation), in order to avoid duplicating efforts, resources, or geographical coverage, and guarantee the synergy or complementarily among initiatives. Activities regarding water preservation and agricultural development have been

executed in the country but without a specific approach on the adaptation to climate change. The suggested programme intends to use experiences to start concrete adaptation actions to scale up.

Table 14 Ongoing related climate projects

PROJECT	Organizations involved	OBJECTIVE	TARGET GROUPS	POTENTIAL SYNERGIES / COMPLEMENTARITY
Coastal Marine Biodiversity in Costa Rica, Capacity Development and Adaptation to Climate Change (BIOMARCC - Biodiversidad Marino Costera en Costa Rica, Desarrollo de Capacidades y Adaptación al Cambio Climático)	National System of Conservation Areas (SINAC/MINAE) GIZ -BMU	Increment the adaptation capacity of marine and coastal ecosystems in Costa Rica	Representatives of state institutions, private institutions and other relevant actors of civil society, responsible of managing Marine and Coastal Protected Areas in Costa Rica	-Establishment of a marine protected area system in Costa Rica ecologically representative and adapted to the effects of climate change. -Strengthen the management capacities of local institutions responsible for marine and coastal conservation areas and other local and relevant stakeholders -Development of financial mechanisms to secure adaptation of marine and coastal protected areas integrating the active participation of relevant stakeholders -Development of an Information system for climate Change and marine Biodiversity
Futuragua Project: Increasing Resilience and Adaptation to drought in Socio-Ecological Systems Arid Tropics: The Case of Guanacaste (Incrementando la Adaptación y Resiliencia a la sequía en Sistemas Socio-Ecológicos del Trópico Árido: El Caso de Guanacaste, 2013-2016)	CMU Center for Climate and Energy Decision Making CIRAD French Agricultural Research Centre for International Development CATIE Centro Agronómico Tropical de Investigación y Enseñanza	To help shape and inform future adaptation choices regarding drought, with an emphasis on building resilience to water scarcity in drought-prone social-ecological systems	Local government Tempisque Conservation Area ASADAS Potrero and Caimital River Watershed Management Commission	-Characterization of current conditions - Strengthening capacities of local actors to the use of multi-sectoral approaches to climate forecasts and plan adaptation measures in response to water stress -Support in the construction of knowledge and decision making from a water security perspective in the dry Northwest region of Costa Rica

CASCADE PROJECT: Ecosystem-based adaptation for smallholder farmers in Central America (2012-2017)	CATIE Conservation International	Identifcation and testing ecosystem-based adaptation (EbA) strategies — such as restoring and protecting forests to ensure future water supply and prevent landslides — that use nature as a tool to help smallholder farming communities adapt to climate change.	Agricultural communities and small farmers	-Vulnerability Identification of subsistence farmers and coffee farmers to climate change -Evaluation of the effectiveness of existing on-farm activities that are relevant for ecosystem-based adaptation -Increase capacity of key institutions, such as policymakers and civil society groups, to support implementation of EbA approaches by developing and delivering targeted training courses and extension materials
AC3 Project: Water for human Consumption, Communities and Climate change: expected impacts and Adaptation in Central America (Agua para consumo humano, comunidades y cambio climático: Impactos esperados y adaptación en América Central)	EfD Research Program CATIE - Climate Change and Watershed Program	Improve decision-making about investment in the design of plans and policies for adaptation to climate change of community organizations responsible for providing water for domestic consumption in Central America	Community Organizations for Water and Sanitation Services (OCSAS)	-Analysis, identification and mapping of the impact of climate change on OCSAS to define priority areas for action at regional level -Identification and assessment from a multidisciplinary perspective -environmental, economic, socio-institutional- of factors that facilitate adaptation to drought -Development of general guidelines for the design of strategies and criteria for prioritizing adaptation investments by OCSAS -Building local capacity for adaptation through training
Exploring the role of index insurance on farmers' adaptation to climate change strategies: a field experiment with Costa Rican coffee farmers	EfD Central America	Explore the role of area yield index insurance compare to traditional insurance on farmers' strategies to adapt to climate change under systemic risk.	Coffee farmers	Exploration of the index insurance as a formal risk sharing arrangement to better manage climate risk.
National Information System for Integrated Management of Water Resources (Sistema Nacional de Información para la Gestión Integrada de los Recursos Hídricos -SINIGIRH)	MINAE - Dirección de Aguas Instituto Costarricense de Acueductos y Alcantarillados Servicio Nacional de Aguas Subterráneas, Riego y Avenamiento	Building an integrated information system on water resources and service providers	National water management institutions Community-based management organizations	Support the process of establishment and consolidation of the National Information System for Integrated Management of Water Resources (SINIGIRH) to include considerations of risk management and climate change

Climate Change Program	Instituto Meteorológico Nacional IMN UNDP	Improve the observation of the effects of climate change in Costa Rica	Academic, scientific, national and international community	Implementation of a national network for monitoring and detection of climate change
Evaluation of pasture and forage to optimize handling and feeding of dairy cows in the upper area of Costa Rica (Evaluación de pastos y forrajes para optimizar el manejo y la alimentación de las vacas lecheras en la zona alta de Costa Rica)	Institutto Nacional de Innovación y Trasnferencia en Tecnología Agropecuaria - INTA	Contribute to the improvement of milk production, reducing costs and deterioration of natural resources, in specialized dairy systems in the upper area of Costa Rica, through the use of pastures and fodder cutting and adequacy of technical conservation and feeding management	Dairy farmers	Implementation of validated technical options for climate resilience enhancement in agriculture
Design of silvopastoral systems as an strategy for climate change adaptation and mitigation in livestock systems from Central America tropics (Diseño de sistemas silvopastoriles como estrategia para la adaptación y mitigación al cambio climático de sistemas ganaderos del trópico centroamericano)	Institutto Nacional de Innovación y Trasnferencia en Tecnología Agropecuaria - INTA CATIE FONTAGRO	Build a database to determine the local and scientific knowledge about functional features of the vegetation to be used for the design of agroforestry systems with biophysical and socio-economic development opportunities for farms located in the Rio Jesus Maria middle basin	Agricultural communities and farmers Río Jesús María watershed	Determination of the effect of different silvopastoral systems designs (composition, spatial arrangements, density, tree cover) in productivity, generation of ecosystem services and strengthening livelihoods, as a technical options for climate resilience enhancement in agriculture
Strengthening Competitiveness and Low-carbon Performance in Costa Rica's Coffee Sector	Fundecooperación IDB	Adoption of new technologies and best production practices by coffee farmers and processing plants	Coffee farmers	Implementation of pilot projects to reduce vulnerability of the coffee sector, incluiding the introduction of coffee varieties adapted to climate change, increased tree cover, and soil conservation practices.
Developing a National Ongoing Training Program for ASADAS	CEDARENA PNUD Instituto Costarricense de Acueductos y Alcantarillados	Improve knowledge and capacities of administrative officials and community - based boards (ASADAS)	ASADAS	Strengthen local capacity in integrated water resource management

G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

216. The knowledge management aspect is intrinsic on all the proposal activities and initiatives. However, due to its importance on the impact and sustainability of the program, it was enhanced as an independent component which responses to the third objective of the program: “Improving the capacity of communities, producers, institutions, and stakeholders for the adaptation to Climate Change”. The component of knowledge management (component 3) is a priority for the country to be able to ensure sustainability of the program, to replicate initiatives regarding adaptation to climate change and thus generate even wider impact at the local level. Due to this significance, the development of knowledge management is established as one of the priority components in the programme. This component promotes strengthening of capacities through dissemination, awareness building, training and knowledge exchange mechanisms for initiatives supported by the programme. Moreover, the generation of information will be used to raise awareness in the communities.

217. Under components 1 and 2, the beneficiaries involved will develop their own capacities to apply adaptation strategies, by integrating scientific knowledge, information about weather and local practices. The programme will promote the exchange and the generation of learning activities; will be executed by the exchange visits, support, training and workshops. At the same time, exchange visits, workshops and training courses will generate reports to document the lessons learned.

218. Through the generation of capacities at the local level, the programme guarantees that beneficiaries will be able to continue with the adaptive initiatives once the financing is completed. The programme focuses on the transfer of knowledge and techniques. In the resulting empowerment process, the beneficiaries may make decisions about the interpretation of data and their own knowledge.

219. The programme will include the information means and documentation of:

- Good adaptation practices to reduce vulnerability and increase resilience
- Methods and techniques for protecting water resources
- General updated information and documentation of the programme.
- As an example, it is expected the following:
    - At least 40 knowledge materials (experience notes, case studies, photo stories, videos, etc.) are generated (10 **per year** starting from year 2 of the programme)
    - A completed and operationally tested “Handbook on Coastal Adaptation”,
    - "Technical Guide for Adaptation to Climate Change for the artisanal fishing sector" and
    - "Handbook on Water Supply Systems Adaptation" is developed by the end of the project

220. Documented information from the programme will be shared through workshops, reports and mass media (Web pages, social networks, videos, and news) at the national and international level. Local activities will serve as “knowledge generation areas” and will provide opportunities to learn by doing.

H. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy of the Adaptation Fund.

221. Fundecooperación, along with the Climate Change Direction (*Dirección de Cambio Climático*) that is the country's DNA (Designated National Authority) have worked in close coordination for formulating this programme. Besides, it has been a priority to identify the country's needs regarding the three topics selected for the proposal (water resource, coastlines and agriculture).

222. Therefore, it was required to make different informative workshops on adaptation at the country level (including the topic of the Adaptation Fund as an item in the agenda) and consultation meetings with different local organizations that work on these topics.

223. The main objective of those consultative workshops, during 2012 and 2013, was to identify possible projects that could support the activities proposed on this concept.

224. Consultations, workshops and investigations on climate vulnerability and adaptation have been carried out by the Climate Change Direction (Dirección de Cambio Climático) at the community level since the development of the National Strategy on Climate Change.

Table 15 Initiatives on Climate Change

THEMES	Activities-Efforts
Adaptation	• National risk management plan - *Comité Nacional de Emergencias* (National Emergency Committee) • Adaptation to climate change and ecosystem services in Latin America (Adaptación al cambio climático y servicios ecosistémicos en América Latina) • Ecosystem-based adaptation to climate change: what role for policy-makers, society and scientists. Mitigation and Adaptation Strategies Global Change. (study) • Adaptation strategies of small farmers to climate change (study)

	• Adapting agriculture to climate change (study)
Awareness and Education	• Training for trainers on Adaptation to Climate Change. Support from IICA-GIZ. • Micro-programmes on Climate Change • *Voces nuestras*: (www.vocesnuestras.org/) A RADIO SERIES about adaptation to climate change. • Cycle of Talks • *Bandera Azul*. • Manos a la costa • Options of market linkages and technological innovation in coffee agroforestry systems in Colombia, Costa Rica and Nicaragua. • Study of perception and attitudes of the Costa Rican population on climate change
Metrics	• Programme of C-Neutral and Resilient Municipalities • BIOMARC: Study on Vulnerability in Coastal Areas • IMN: Studies on Adaptation and Vulnerability • Costa Rica: effects of climate change on agriculture • Pilot implementation in Costa Rica of the Engineering Vulnerability Assessment Protocol (conducted by Engineers Canada, together with the Costa Rican Engineers Professional Association, Colegio Federado de Ingenieros y Arquitectos, CFIA)
Development of Capacities and Technologies	• C-Neutral and Adapted Enterprises • Study on Technological Needs • Project MAG-INTA-Fundecooperación-ACICAFOC, named "Development of local capacity on environmentally friendly and low carbon and climate resilient agriculture technologies"

Source: Own Creation.

225. During the development of this concept proposal, stakeholders have been consulted and consensus was developed with regard to specific needs on adaptation actions for each of the sectors selected. Through these activities, it was possible to have discussions on topics such as needs at the community level, the most vulnerable areas, the current actions regarding these issues and general information about the country's climate threats and the country's vulnerability. The following table summarizes the participating organizations:

Table 16 Participating Organizations during the consultation process

Water Resource Component	*Agriculture Component*	*Coastal Zones Component*
Organizations	**Organizations**	**Organizations**
Universidad de Costa Rica (UCR)	Agencia Española de Cooperación Internacional para el Desarrollo (AECID)	Fundación para la Paz y la Democracia (FUNPADEM)
Dirección de Cambio Climático	Universidad de Costa Rica - Instituto de Investigaciones Agrícolas (IIA)	Universidad Técnica Nacional (UTN)
Dirección de Aguas Ministerio de Ambiente, Energía y Mares (MINAE)	Corporación Educativa para el Desarrollo Costarricense (CEDECO)	Cooperación Alemana (GIZ)
Asociación Administradora de Sistemas de Agua Potable y Saneamiento San Juan (ASADA) and other ASADAS	Centro Nacional de Ciencia y Tecnología (CITA) – Universidad de Costa Rica	Biodiversidad Marino Costera en Costa Rica (BIOMARCC)
Fundación Bandera Ecológica	Instituto Interamericano de Cooperación para la Agricultura (IICA)	Conservación Internacional
Unión Internacional para la Conservación de la Naturaleza (UICN)	Asociación Coordinadora Indígena y Campesina de Agro forestaría Comunitaria Centroamericana (ACICAFOC)	Cooperativa Autogestionaria de Servicios Profesionales para la Solidaridad Social (COOPE SOLIDAR, RL)
Instituto Meteorológico Nacional(IMN)	Centro Internacional de Política Económica para el Desarrollo Sostenible (CINPE) -	Unión Internacional para la Conservación de la Naturaleza (UICN) -
Acueductos y Alcantarillados Sistemas Comunales (A Y A)	Instituto de Innovación y Transferencia de Tecnología Agropecuaria (INTA)	Viceministerio De Aguas y Mares

Engineers Professional Association (Colegio Federado de Ingenieros y Arquitectos, CFIA)	Ministerio de Agricultura y Ganadería (MAG)	MAR VIVA
Unión de Acueductos Comunales (UNAGUAS)	Centro Agronómico Tropical de Investigación y Enseñanza (CATIE)	Universidad Técnica Nacional (UTN) Sede Pacifico
Servicio Nacional de Aguas Subterráneas Riego y Avenamiento (SENARA)	Instituto de Innovación y Transferencia de Tecnología Agropecuaria (INTA) -	Parque Marino Pacifico
Agencia Española de Cooperación Internacional para el Desarrollo (AECID) -CRICA		Programa de información científica y tecnológica para prevenir y mitigar desastres (PREVENTEC)-
Universidad de Costa Rica (UCR)/ SEDE PACIFICO/		Vicerrectoría Investigación de Universidad de Costa Rica (UCR)
Comisión para el Fortalecimiento del Sector de Acueductos Comunales(COFORSA)		Instituto Costarricense de Pesca y Acuicultura, INCOPESCA

Source: Own Creation.

226. Contacts and consultations with programme partners have been maintained throughout the programme design in order to feed into technical design and to refine outputs and activities. As an example, stakeholders involved in the consultation process were given drafts of the programme concept proposal, so that comments and suggestions of improvement were collected and addressed in the final draft. It is also important to mention that, during 2012 and 2013, several consultations with multi-sectorial representatives have been undertaken in order to identify and prioritize the adaptation needs for climate change adaptation and to strengthen the planning process with technical and scientific information. This also includes the participation of local associations and knowledgeable actors who understand the vulnerability of local communities and the related climate risks.

I. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

227. According to a study from CEPAL named "The Economy of Climate Change in Central America" ("La Economía del Cambio Climático en Centroamérica"), *"Climate change is a serious threat for Central American societies due to its multiple impacts anticipated on the population and productive sectors. In fiscal terms, it constitutes a contingent public liability that will affect the public finances for several generations. The economic impacts on the Central American economies are truly significant – despite the uncertainties due to the interaction among the economic variables, weather conditions, and social, political, and cultural aspects*[23] *(…). The adaptation challenge for Central America is of very high concern because it demands redoubling efforts to reduce poverty, inequality and socioeconomic and environmental vulnerability, and increase resilience and the adaptation capacity of societies, specific populations and related ecosystems."*

Table 17 Central America: Initial Estimation of the Accumulated Costs of the Impact of Climate Change in the Agricultural Sector by 2100 (in percentage of the GDP for 2008 at current net value)

Año	Tasa de descuento			
	0,50%	2,0%	4,0%	8,0%
2020	1,28	1,20	1,11	0,97
2030	2,48	2,11	1,75	1,22
2050	3,70	2,86	2,14	1,41
2070	5,18	3,53	2,39	1,45
2100	11,13	5,40	2,80	1,47

Source: CEPAL

Table 18 Central America: Initial Estimation of the Accumulated Costs of the Impact of Climate Change in the Farming Sector by 2100 (in percentage of the GDP for 2008 at current net value)

Año	Tasa de descuento			
	0,50%	2,0%	4,0%	8,0%
2020	1,84	1,72	1,59	1,38
2030	3,45	2,94	2,44	1,81
2050	5,36	4,12	3,07	2,00
2070	8,50	5,55	3,58	2,07
2100	18,53	8,70	4,29	2,11

Source: CEPAL

[23] Discount rate: the discount rate reflects the percentage by which a unit of present benefits is more valuable than the unit itself in a subsequent period. In a sense, it weighs the importance we assigned to the future.

Table 19 Central America: Initial Estimation of the Accumulated Costs of the Impact of Climate Change in the Farming Sector by 2100 (in percentage of the GDP for 2008 at current net value)

Tasa de descuento	2020	2030	2050	2070	2100
			Belice		
0,5 %	1,09	1,90	4,22	6,89	12,12
2 %	0,96	1,58	2,99	4,19	5,82
4 %	0,83	1,26	2,00	2,43	2,79
Tasas de descuento			Costa Rica		
0,5 %	0,15	0,27	0,60	1,00	6,31
2 %	0,13	0,22	0,42	0,60	2,15
4 %	0,11	0,18	0,28	0,34	0,66
Tasas de descuento			El Salvador		
0,5 %	0,35	0,74	2,76	5,89	16,22
2 %	0,31	0,60	1,79	3,19	6,37
4 %	0,26	0,46	1,06	1,56	2,25
Tasas de descuento			Guatemala		
0,5 %	0,59	1,06	2,46	4,11	12,95
2 %	0,52	0,88	1,72	2,47	5,12
4 %	0,45	0,69	1,14	1,40	1,96
Tasas de descuento			Honduras		
0,5 %	0,78	1,39	3,09	5,05	9,14
2 %	0,69	1,15	2,18	3,07	4,33
4 %	0,59	0,91	1,45	1,77	2,05
Tasas de descuento			Nicaragua		
0,5 %	1,17	2,14	4,37	6,59	14,28
2 %	1,03	1,77	3,12	4,13	6,46
4 %	0,88	1,40	2,10	2,47	2,97
Tasas de descuento			Panamá		
0,5 %	0,23	0,46	1,10	2,02	3,90
2 %	0,21	0,38	0,76	1,18	1,77
4 %	0,18	0,30	0,50	0,65	0,78
Tasas de descuento			Centroamérica		
0,5 %	0,43	0,81	1,99	3,52	9,80
2 %	0,38	0,67	1,39	2,09	4,02
4 %	0,33	0,54	0,92	1,17	1,59

Note: The cost covers the cost of new sources, deficit or use cost (demand) and cost for ecological loss, all with climate change, minus deficit or use cost (demand) and cost for ecological loss –these latter without climate change.
Source: CEPAL

The programme includes the financing of a wide variety of initiatives:

Component 1: Agricultural Sector	**Objective:** 1. Increasing the adaptation capacity to climate change in the agricultural sector.

Baseline – without the resources from the Adaptation Fund

228. As established by the Strategic National Action Plan of the on Climate Change (*Plan de Acción Estrategia Nacional de Cambio Climático*), *"the sector is highly affected by climate change, mainly due to alterations in the distribution of temperature and rainfall. According to the climate scenarios of the country and the region, an increase in the mean values and the variability of temperature is expected. The rainfall pattern is expected to have a larger number of extreme values (drought periods and excessive rainfall). In the case of Costa Rica, although all regions will be affected, the most affected regions are the Atlantic Region (rainfall) and the North Pacific Region (heat and droughts) (MINAET, IMN 2011). Therefore, it is expected that main crops in these regions will be consequently impacted. In general, models predict reductions in productivity and production and, in some cases, the emergence of opportunities. According to the study by MAG and MIDEPLAN about the Economic Impact of Extreme Phenomena in Costa Rica (Impacto Económico de Fenómenos Extremos en Costa Rica) for the 1988-2009 period, there are losses for the agricultural sector that reach up to US$396.9 millions."* Up to now, some efforts have been made to address adaptation to climate change, but the efforts have been performed in an inconsistent and uncoordinated manner. Therefore, it is necessary to face challenges such as training the population of the agricultural sector in order to adopt measures for their adaptation and to increase their resilience to climate hazards.

Adaptation measures:

229. This proposal seeks to provide small-scale producers appropriate tools, technology and production techniques, in order to achieved improved yields, food safety and, ultimately, life quality. This programme will provide funding for:

- ✓ Zoning (to reduce risk and to optimize land use)
- ✓ Reduction of large-scale degradation of land, soil and water

- ✓ Technical design of sustainable production that promote food security and sustainable livelihoods.
- ✓ Agricultural productivity strengthened in response to climate change in order to meet trends in food production and food security.
- ✓ Reduction of money losses for beneficiaries due to climate change effects

Component 2: Water Sector **Objective:** 2. Improving water resources management in order to increase resilience, in the communities that are more vulnerable to climate change

Baseline – without the resources from the Adaptation Fund

230. It is expected that the impact of climate change in the country's water and coastline sectors is the result of the intensification of extreme events. According to climate forecasts, more areas in the country might be indirectly affected by hydrometeorological phenomena related to excessive rainfall (flooding) or a lack of rainfall (droughts). Some of the challenges of the country in this regard are the following: consolidating the water infrastructure, guaranteeing the supply of underground water resources, as well as operation and maintenance of aqueducts and sewage systems. There are several deficiencies in the administration of associations that manage aqueducts (ASADAs), which will need to be addressed. Similarly, the management of existing information systems will have to be improved, in order to have reliable monitoring and reporting of the information regarding the availability of the resource.

Adaptation measures:

231. This program will support costs of rehabilitating the fragile coastal and water ecosystems. Without this programme, these ecosystems would gradually deteriorate and the communities would be even more vulnerable to climate change. This programme will provide funding for:

- ✓ Improvement of water management
- ✓ Capacity building for local organizations to improve management systems

- ✓ Rehabilitation and protection of reefs
- ✓ Promotion of technologies for an efficient use of water
- ✓ Promotion of chains between activities implemented in water and productive activities on the ground
- ✓ Supporting livelihoods in coastal communities, food security and biodiversity protection (mangroves and coral reefs) against the impacts of extreme climate events

Component 3: Capacity building. **Objective:** 3. Improving the capacity of communities, producers, institutions and stakeholders regarding adaptation to Climate Change.

Baseline – Creation of Capacities

232. The lack of knowledge and accessible information regarding climate change and possible adaptation practices to be implemented under specific circumstances has contributed to maintain a low adaptation capacities, especially in the most vulnerable communities. In order to face this, the awareness regarding climate change, education programs to improve knowledge and the dissemination of information to help better understand the impact of climate hazards in their geographical area, and techniques required for adaptation. The documentation and the exchange of experiences among different communities will allow generating a greater impact at a local level.

Adaptation measures:

233. This programme will spread relevant knowledge on climate change adaptation in the selected sectors. Strengthened risk management system and improvement of information on adaptation, climate risk and extreme events will enable to monitor key indicators of climate change and to provide best available technical advice to future activities.

234. The programme will also support additional capacity building to enable beneficiaries to maintain their activities beyond the programme timespan.

235. Although this programme is not expected to address all of the sectors needs, it will cover the implementation cost of the activities mentioned above in order to increase resilience to climate change through the funding of activities such as rehabilitation aiming at improving or modifying the current situation in the selected communities. This programme will also provide funding to reduce the risks due to increased or decreased precipitation, through improvement of infrastructure on coastal communities and water management areas at the local level. This will ultimately allow avoiding the adverse impacts of extreme climate changes in vulnerable areas.

236. The financing from the Adaptation Fund would be used to minimize risks through capacity building of local institutions and communities, in order to implement climate resilient technologies and actions. This programme will therefore support the additional costs of rehabilitating fragile ecosystems. As shown in the “Figure 18: Organization Chart for Implementing the Strategy”, the programme will provide funding to local institutions, communities, NGOs, private and public sector in order to ensure the selected beneficiaries are provided with the knowledge and resources needed to adopt climate resilient strategies, so that communities become more resilient and can respond efficiently to climate change.

I. Describe how the sustainability of the Programme outcomes has been taken into account when designing the project.

237. By taking into account the difference among the three main components: agricultural sector, water-coastal sector, and institutional capacities – each of them with expected outcomes in accordance with their corresponding objectives - it is possible to distinguish the key aspects taken into account when designing this programme for its sustainability.

238. First, the programme works together with the national policies regarding the adaptation to climate change, which is a key aspect for effectively developing any initiative in the country.

239. It is important to note the involvement of regional and sectorial participants and their ownership of knowledge, activities and actions to be performed. The participation of local institutions and the different sectors involved helps improving the capacities for a sustainable management of natural resources, reduction of hazards in vulnerable areas and the awareness for modifying the behavior and the consumption.

240. Due to the medium and long-term vision of the initiatives to be promoted, it is necessary to refer more specifically to each component:

- In the agricultural sector, the sustainability of the proposal depends on the new knowledge provided by the adaptation initiatives, the use of innovative cost-effective technologies, zoning and the monitoring of the effects of climate change and its variations. In these cases, the fulfillment of the objective may be observed in terms of productivity and the profits of the agricultural sector, by having successfully included adaptation actions.
- Regarding the water-coastal sector, the initiatives are focused on water management, the preservation of related ecosystems and the strengthening of the coastlines' protection against climate variations. Their sustainability is related to the capacity of keeping the proposed practices in operation in order to comply with the objectives mentioned above. In

these cases, environmental education plays a key role that must be promoted by the initiative owners and by the regional institutions as well.

- Finally, regarding the third component of institutional capacities, its sustainability depends on a national plan to be included in the National Strategy against Climate Change (*Estrategia Nacional contra el Cambio Climático*), which emphasizes the importance of taking into account the environmental and climate hazards and threats in the Costa Rican planning.

241. **Sustainability through different angles:**

- ✓ Socially: The appropriation of the initiatives by the communities allows each beneficiary to implement the most appropriate adaptation measure for their area. In order to ensure the success and sustainability of these initiatives, the programme searches to truly respond to local needs, taking into account local conditions and traditions. Importance will be given to capacity building at the local community and institutional levels, in order to enhance up-scaling and replicability by other communities, and also to encourage further and continuous adaptation initiatives and measures to be taken and implemented by stakeholders.
- ✓ Financially: The appropriate technologies and initiatives proposed intend to be cost-effective in order to enable the extension of adaptation actions with practical, efficient and low-cost solutions. Fundecooperación is committed and strongly believes in helping the development of initiatives at the national level through the enhanced access to micro-financing and income generating activities. Therefore, it is expected to implement the actions through non-revolving funds leveraged by the financial support provided by the programme; the appropriation of the programme by the beneficiaries at the financial level will make possible to continue its implementation beyond the end of the programme's intervention.
- ✓ Institutionally: it is expected that the participation of multi-stakeholders will provide the opportunity to organizations and institutional structures to embrace the adaptation needs and initiatives and to improve inter-institutional coordination. The programme is expected

to support institutional programs, which will make it possible to continue working in the areas of intervention of the programme.

242. One of the main factors is the promotion and strengthening of the adaptation practices. Although this proposal represents an opportunity to execute initiatives in the most vulnerable regions, the effort and its assessment must be distributed in the country. Thus, the proposed actions will have a greater incidence on the adaptation to climate changes and its adverse effects. Specific activities such as the creation of **revolving funds and the creation of an agricultural insurance** are expected to have an impact during and after the implementation of the Adaptation Fund at the national level. Economic incentives will create special conditions for the implementation of adaptation measures at the local level.

243. The results and lessons learned during the implementation of the adaptation fund will support the National Strategy of Climate change, in order to promote and implement adaptation measures at the national level.

J. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project / programme[24].

Environmental and Social Principles			Key Issue (Yes/No)	Justification (If answer is yes, describe risks)	Corrective or Preventive Actions
1	**Compliance with the law**	The development of the initiative represents any potential risks of non-compliance with national and/or international legislation?	Yes	For the agricultural initiatives related to fertilization or waste management practices a risk of water contamination exists.	Request executing organizations respective permits or legal justification of its omission for all proposed infrastructure.
				There is a risk that the properties (land) where the initiatives will be developed may present legal issues.	Request executing organizations cadastral plans, land use permits and other legal documents that demonstrate the legality of the properties and implemented activities.
				For the initiatives related to construction a risk of non-compliance with the necessary permits requested by the municipality, CFIA, SETENA and others (according to the dimensions of the construction) exists.	Request the respective applicable permits or the legal justification of its waiver for all proposed infrastructure.
2	**Access and Equity**	The development of the initiative represents a risk that there will be no just and equitable access to benefits?	Yes	All initiatives are oriented at areas vulnerable to the climate change, including beneficiaries with vulnerable socioeconomic conditions; however there exists a risk that some of the initiatives, as for instance capacity building, would not be oriented towards all existing vulnerable groups. Similarly, all groups are not necessarily willing to receive capacity building.	Request that the activities that will be executed to build capacity must be published in local media. In the process, priority must be targeted to women and most vulnerable local populations and/or groups.
		The development of the initiative represents a risk to inhibit the access to basic benefits as health services, drinking water and treatment, energy, education, etc.?	Yes	On the contrary the initiatives are oriented at promoting basic services such as drinking water, wastewater treatment, waste recollection and education. However, there will be activities executed with ASADAS that provide drinking water service to the community, and therefore the issue could indirectly apply.	Include contractual clauses to executing agencies, requiring equitable access to basic benefits and specifying that none of the initiatives is going to inhibit or interfere in the access to basic benefits.
		The development of the initiative represents a risk to	Yes	There exists a risk to maximize existing inequities. For example there exist socioeconomic vulnerable groups that due to their	Include contractual clauses to executing agencies that no

[24] Same table that the one presented at III Part, c., of this document.

		maximize the existing inequity, particularly for marginalized or vulnerable groups?		location are more vulnerable to climate change and have not been identified as beneficiaries within the initiative. Similarly, identified beneficiaries are not necessarily the most vulnerable ones.	initiative is going to maximize existing inequity. Request previous evidence of the condition of vulnerability of the identified beneficiaries. Ensure continuous monitoring of the selected priority region at the country level in order to ensure that the most vulnerable beneficiaries are selected on a continuous basis.
3	**Marginalized and Vulnerable Groups**	The development of the initiative represents risks of generating an adverse impact on marginalized and/or vulnerable groups like children, indigenous groups, refugees, people living with HIV/Aids, etc.?	Yes	No initiatives are identified with orientation or execution that could generate a negative impact on marginalized and/or vulnerable groups. On the contrary the initiatives are oriented to generate benefits for the groups most vulnerable to climate change and socioeconomic conditions. However, there is the risk represented that during the development of the initiative, marginalized and/or vulnerable groups that could be affected during the development of the initiative are not identified yet. For example, indigenous groups that could be affected by the development of agricultural activities.	Request executing agencies the identification of vulnerable or marginalized groups that could be directly or indirectly impacted during the development of the initiative, or even after its implementation. In the case they do exist, request mitigation plans to eliminate or solve the adverse impacts. Include clauses that the development of the initiatives will not generate adverse impacts on marginalized groups.
4	**Human Rights**	The development of the initiatives represents a risk of disrespecting international human rights?	Yes	No initiatives are identified whose orientation or execution is misaligned with the established international human rights. On the contrary the objective is to promote basic human rights such as drinking water, sanitation and education. However, there does exist the possibility that for the implementation of some initiatives human rights may be disrespected, for example civil rights, quality of life, social justice, children rights, discrimination, etc.	Include contractual clauses to executing agencies so that the development of the initiatives will be in compliance with human rights and that during their development no deviation or disrespect of human rights will be tolerated.
5	**Gender Equity and Women's Empowerment**	The development of the initiatives represents a risk of not promoting gender equity in a way that men and women are enabled to participate fully and equally, receiving equal social	Yes	The initiatives are oriented to promote a fair and equal development between men and women. Some initiatives are also oriented to promote the active involvement of women groups in order to achieve enhanced empowerment. However, during the execution of the initiatives a risk exists of not promoting gender equity.	Include contractual clauses to executing agencies that for all initiatives, a cross-cutting component of gender equity has to exist and be maintained.

		and economic benefits and not suffering from adverse affects during the development of the same?			
6	**Core Labor Rights**	The imitative represents a risk of disrespecting the labor rights identified by the International Organization for Work?	Yes	The risk has been identified that the people working for the beneficiaries or the executing organization of the initiatives could be outside the national or international legislation (for example minimum salary, vacations, insurance, etc.)	Request executing agencies a legal declaration that shows compliance with labor rights identified by the International Organization for Work. Request confirmation from the CCSS (Social Security System) that the executing agency is in due compliance.
7	**Indigenous Peoples**	The development of the initiatives represents a risk of disrespecting the rights and responsibilities established in the Declaration of the United Nations about the Rights of Indigenous groups and/or applicable instruments related to indigenous groups?	Yes	No initiatives are identified whose orientation or execution disrespects the rights and responsibilities of indigenous groups. However, there does exist a risk that during the development of these initiatives, the rights of indigenous groups could be disrespected in a direct or collateral way, for example because of territorial or cultural issues.	Request identification of indigenous groups that could be directly or indirectly impacted during and after the development of the initiatives and in case they exist, request concrete mitigation plans to eliminate or solve the adverse impacts. Include contractual clauses to executing agencies that the development of the initiatives will not generate adverse direct or indirect impacts on indigenous groups.
8	**Involuntary Resettlement**	The development of the initiatives represents a risk of involuntary resettlement of inhabitants?	No	No initiative has been identified with orientation or execution requiring involuntary resettlement. However there exists a risk that this may occur, for example if it is necessary to modify the design to an aqueduct for an ASADA.	Include a contractual clause for the necessity to communicate to the implementing agency and formulate a remedial plan in case the involuntary resettlement of part of the population is necessary to develop the initiative.

9	**Protection of Natural Habitats**	The development of the initiatives represents an unjustified risk of conversion or degradation of natural habitat including those legally protected, officially proposed to become legally protected, critical habitats or areas renown and protected for indigenous groups or traditions?	Yes	There is a risk that some agricultural activities are developed nearby protected areas or surrounding areas.	Request cadastral plans or land use permits to verify the existence or proximity to protected areas. Verify with SINAC if there are management plans in the boundaries (if they exist).
10	**Conservation of Biological Diversity**	The development of the initiatives represents a risk of unjustified reduction or loss of biodiversity, as for example the massive introduction of alien species?	Yes	The acticvities are focusing on Ecosystems based Adaptation as proposed, including recovery of biodiversity and agroecological practices at the farm level. However, a minor risk of unjustified reduction of biodiversity during the development of agricultural activities does exist.	Request executing agencies to identify and prevent risks of biodiversity loss and to avoid introduction of alien species.
				A risk of introduction of non indigenous species and possible invaders have been identified in the reforestation processes.	Request the technical study for the proposed reforestation processes.
11	**Climate Change**	The development of the initiatives represents a risk of unjustified generation of greenhouse gases?	Yes	No initiative has been identified with an orientation or execution that could generate unjustified greenhouse gases. On the contrary there are initiatives, as the implementation of biodigestors, low carbon technologies and improved pasture that will lead to greenhouse gases reduction. There are transport processes for the initiatives but these are considered unavoidable. In Costa Rica there are established maximum emission parameters controlled by RTV. (National evaluation)	Request RTV for the involved vehicles for the development of the initiative.
12	**Pollution Prevention and Resource Efficiency**	The development of the initiatives represents a risk of not making efficient use of energy?	Yes	No initiative has been identified as a big consumer of energy, however there exists the risk that during the implementation of some initiatives, the use of energy or fuel would not be efficient.	Request an identification of environmental aspects and impacts for each initiative and measures to control and mitigate the energy efficiency risks.

		The development of the initiatives represents a risk of not minimizing or not making efficient use of resources?	Yes	No initiatives have been identified as big consumers of natural resources and therefore would require measures for their efficient use. On the contrary, some initiatives are oriented towards the better use of available resources, however, in some initiatives there may exist the risk that the resources may not be used in an efficient way, for example in constructions or transportation.	Request an identification of environmental aspects and impacts for each initiative and measures to control or mitigate those environmental aspects.
		The development of the initiatives represents a risk of not providing adequate treatment and disposal of waste?	Yes	There is a risk that the generated waste in some initiatives, mainly in remote rural areas, will not be adequately disposed of. However, no initiative has been identified that generates solid waste that requires any treatment.	Request a waste management plan for those initiative that require one.
13	**Public Health**	The development of the initiatives represents a risk of generating potential negative effects on public health?	Yes	The risk has been identified that some of the agricultural initiatives could generate health or odor problems, mainly those related to waste management.	Request a technical study for the activities of waste management including occupational health measures.
14	**Physical and Cultural Heritage**	The development of the initiatives represents a risk of alteration, damage or removal of resources or cultural sites or with an accepted natural and scenic value?	Yes	Since some of the activities involve indigenous population, there is a risk during the development of some of the initiates that there will be alteration or damage to sites or cultural resources with natural or scenic value.	Request compliance with Law of Cultural Heritage and Patrimony regarding identification and protection of cultural and archeological, nearby the location where the initiatives. Request the identification of preventive measures if necessary in order to avoid direct or indirect damage. Include contractual clauses that if during the development of the initiative damages to cultural, archeological or sites accepted as natural or scenic are identified, they must be communicated to the implementing entity and if necessary, actions must be suspended until finding and implementing a valid solution.

15	**Lands and Soil Conservation**	The development of the initiatives represents a risk of degradation of land or soil?	Yes	No initiatives have been identified with orientation or execution that could degrade soil or productive land. On the contrary some of the initiatives are oriented towards the conservation and use of soil however there exists a risk that during the application of good practices technical errors might incur that generate degradation of land and soil.	Request compliance with Law of Soil Use and Conservation and monitoring with technical endorsement, to verify that there is no risk of degradation of land and soil.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for programme implementation.

244. The Programme is an essential part of the National Strategy for Climate Change (ENCC, Spanish acronym) and will be implemented over a five-year period, beginning in July 2014. The implementing entity (IE) for the programme will be Fundecooperación para el Desarrollo Sostenible, as the National Implementing Entity for the Adaptation Fund. Replicating the longstanding work and experience of Fundecooperación in working directly with national stakeholders (public and private organizations, academy, NGO's), and considering past success of Fundecooperacion implementing Programmes at national and international level, the Government of Costa Rica has explicitly endorsed this AF project to be executed by local-level institutions, academy and public organizations.

Organizational Bodies	Composition	Roles and responsibilities
▪ Programme Steering Committee (PSC)	▪ MINAE and MAG (Ministers or their high-level representative)	▪ The Programme Steering Committee (PSC) will provide policy support and strategic directions to enhance the implementation of the programme, arbitrate on any conflicts and negotiate solutions; to approve scope changes, and to help ensure the programme's viability and sustainability. ▪ The PSC will be a delegation from each of the following three institutions: MINAE, MAG and Fundecooperación. MINAE chairs and coordinates the PSC, while Fundecooperación serves as the implementing entity. The Programme Coordination Unit (PCU) will be the secretariat for the PSC and will provide assistance in convening meetings of the PSC at least twice a year.
▪ Programme Management Board (PMB)	▪ FC ▪ DCC-MINAE	▪ The Programme Management Board (PMB) will play a lead role as the programme authority, being responsible for management decisions and ensuring technical quality

		and financial transparency by monitoring the gradual achievement of programme objectives. The PMB will: (i) develop priority policies and regulations for the programme; (ii) monitor and supervise compliance with these regulations and policies; (iii) orient the Programme Coordination Unit (PCU); (iv) assess and approve or reject project proposals, including pilot project proposals; (v) approve and closely monitor the multi-year and annual work plan to ensure its fulfillment and that it contributes to achieving project objectives; (vi) approve the annual report, multi-year and final report (vii) report to the PSC. ▪ The Programme Coordinator will be the secretariat for the PMB.

Programme organizational arrangements:

Organizational Bodies	Composition	Roles and responsibilities
▪ Programme Coordination Unit (PCU)	▪ Fundecooperación STAFF • Programme Coordinator • Administrative & Finance Assistant (PAFA) • Project Officer (PO)	▪ The Programme Coordination Unit (PCU) will be responsible for the day-to-day management of the programme activities and for the overall operational and financial management as well as the reporting process. It will be headed by the Programme Coordinator (PC) with the support of an Administrative & Finance Assistant (PAFA), and a Project Officer (PO). The PCU will be under direct supervision by the PMB. ▪ The tasks of the PCU will include: (i) coordinating the implementation of projects and activities; (ii) Facilitating, in partnership with civil society organizations, the identification and formulation of the projects that are eligible for support under the Programme; (iii) submitting plans and proposals for approval by the PMB; (iv) Supervising the implementation of projects and ensuring proper monitoring and financial administrative accountability; (v) submitting disbursement requests, annual reports, evaluation and audit reports of approved projects to the PMB. ▪ The Programme Coordinator (PC) will be responsible for the operational and administrative management on a daily basis and will plan, organize, implement, monitor and verify all the programme's activities. ▪ The Programme Administrative & Finance Assistant (PAFA) will provide administrative, logistical and accounting support to the Programme. ▪ The Project Officer (PO) will provide technical and analytical support in the preparation of day-to-day activities towards effective implementation of the

		programme.
▪ Programme Technical Committee (PTC)	• Programme Coordinator (PC) • MINAE • MAG • MIDEPLAN • CNE • IMN	▪ The Programme Technical Committee (PTC) will serve as a technical and strategic expert team guiding programme implementation. It will be chaired by the PC, and will include a delegate from each of the following institutions: MINAE, MAG, SENARA and Engineers Professional Association.
▪ Executing entities	• Local-level institutions, • academy and • public organizations selected	▪ Administration and delivery of financial inputs, community organizer, and repository of knowledge and lessons learned from the component and activity. ▪ Stakeholder consultations at national, regional and local-levels and an open call for proposal, screening and assessment was realized in order to identify potential NGOs, local-level institutions, academy and public organizations with sufficient capacity to carry out some of the programme activities. However, the selection of and a formal agreement with these entities will be made once the Adaptation Fund Board approves the programme proposal. ▪ Table below shows a list of potential organizations with their capacity and areas of expertise.

245. The basic features of the implementation arrangements can be summarized in the following chart:

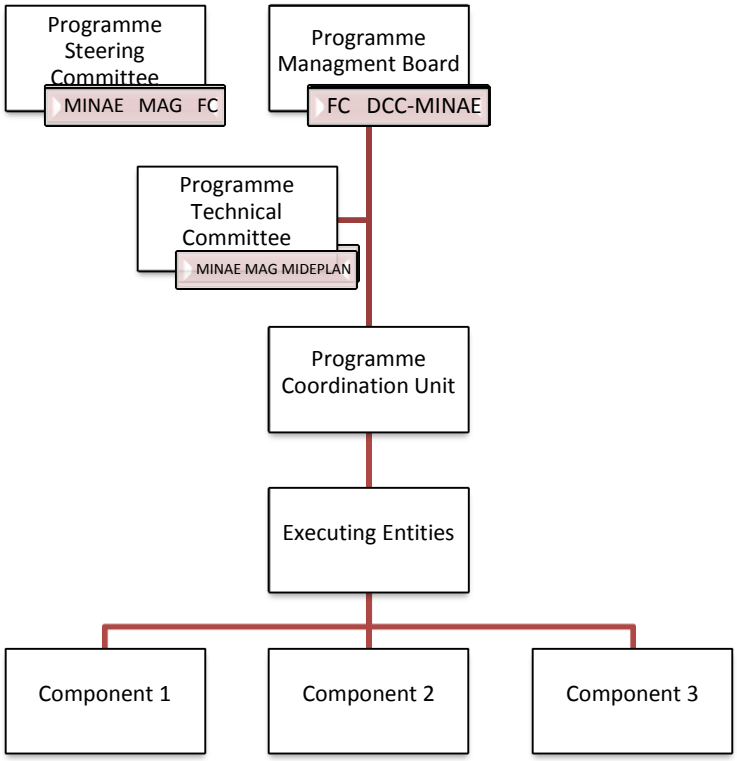


Figure 20 Organization Chart for Implementing the Strategy

246. The programme's strategic approaches emerged from regular consultations, usually in a series of workshops prepared by the PCU. The outcomes of these policy consultations and dialogues between the stakeholders will be the main input for the Programme Management Board, in order to work out operational strategies.

247. ***Identification of Individual projects***

248. The Programme Screening Methodology (See Annex 1) sets a series of preliminary criteria in project's identification and assessment. Moreover, the communication strategy allowed the promotion of the objectives, eligibility criteria and conditions for the "call for proposal".

249. Project proposals were submitted by participating organizations[25] in hard copy and also electronically to the office of Fundecooperación, accompanied by a letter of commitment from both the executing agency and the involved beneficiary organizations.

250. After an initial screening in the light of the basic criteria (according to programme main objectives, outcomes and outputs) and once the AF Board approves the programme, the PCU shall present the proposal of possible elected projects to the PMB. Funds will be allocated according to the merit of individual proposals approved by the PMB, including if necessary, adjustments or additions.

251. The PMB may decide to:

- Approve the project proposal as submitted and allocate funds for its implementation;
- Reject the project proposal, explaining the reasons;
- Approve the project proposal subject to improvements or additions to be specified by the PMB.

252. The PCU will inform the applicant of the PMB's decision within two weeks of the date on which the agreed minutes of the meeting are signed. If a project proposal has been approved with specific conditions, the PCU shall inform the applicant organization of the requirements and procedure to obtain final approval. If the funding has been approved, a contract letter stipulating the applicable terms and conditions shall be prepared by the PCU, who shall submit the letter to the applicant participating organization for countersignature.

253. These participating organizations will act as the Executing Entities (EE) and will be directly responsible for implementation of the programme components. Each EE will appoint a liaison to the programme, who will have the responsibility of communicating directly with the PCU.

254. Project proposals selected as eligible for funding by the Programme are:

- Submitted by eligible participating organizations;
- There no duplications of activities and promotes alliances at the local level. Have a multi stakeholder approach;
- Concrete adaptation actions in order to address adaptive capacity.

[25] An organisation will qualify as a `Participating Organisation' if is legally constituted and fulfills minimum requirements in terms of administrative capacity

- Consistent with national strategies and technical standards
- Benefits along the following dimensions:
    - Economic development
    - Environmental benefits
    - Social benefits
    - Gender Equity
- Cost effectiveness
- Multiplier effect
- Fit into one of a maximum of three areas: Agriculture, Water Resources and Coastlines;
- Responds to the programme objectives, outcomes and outputs;
- Be submitted in Spanish, use the specified project format and include a budget in US dollars.

255. List of potential organizations with their capacity and areas of expertise:

Component 1 and 3.	
Organizations with vast experience in the execution of projects. These organizations work to bring access to, use, and to manage natural resources and look for ways to achieve food security and economic sustainability for several communities	
FEDERACIÓN DE CAMARA DE GANADEROS DE GUANACASTE	The Federation of Chambers of Guanacaste that gathers together livestock producers and associate producers in Guanacaste
Asociación Coordinadora Indígena y Campesina de Agroforestería Comunitaria de Centroamérica (ACICAFOC)	Non-profit, grassroot organization that gathers together associations, cooperatives, federations and organized groups of small- to medium-scale agroforestry producers, indigenous people and peasant communities
Ministerio de Agricultura y Ganadería de Costa Rica (MAG)	Is the executive body responsible for agricultural production. The organization helps small and medium scale producers make investments to increase their income and the sustainability of their property
COOPEPURISCAL	CoopePuriscal began as a cooperative for tobacco producers in 1957 but shifted their focus onto the welfare of the entire community in the 1980s. Their mission became “to facilitate the socio-economic development of [their] associates through services and products in strategic areas with a social character, striving to offer opportunities to associates and the community”
CAMARA NACIONAL DE PRODUCTORES DE LECHE	A lead organization that defends and promotes sustainable growth in production, processing and marketing of milk and its derivatives in the country.
Instituto de Innovación y Transferencia de Tecnología Agropecuaria (INTA)	The mission of INTA is to contribute through investigation, innovation and transference of technology to the development of the Costa Rican farming sector, to obtain competitive productive systems, environmental compatibility, with services and products that at the same time responds to technological necessities and to the improvement of the quality of life of the Costa Rican society.

COOCAFE Y FUNCAFOR	Organizations that work will small and medium producers that are located all over Costa Rica, primarily in the provinces of Alajuela, Guanacaste and Puntarenas, the central and northern area of the country.
UNAFOR CHOROTEGA	Non-profit organization that gathered 5 regional organizations and more than 160 grassroots organizations such as associations, cooperatives, women's associations, partnerships rural water managers, independent producers and others.
INDER	Public organization in charge of the rural development in the country
Among other possible organizations.	
Component 2 and 3	
Organizations with experience in promoting and implementing projects to protect ocean, coastal and water resources.	
PRETOMA	A Non Profit Civil Association that aims to protect, conserve, and restore, the marine environment of Costa Rica.
MARVIVA	A non-profit organization that aims to promote the conservation and sustainable use of marine and coastal resources in the Eastern Tropical Pacific.
Coope santos	An organization that works along with ASADAS in more than 100 communities
UCR-CIEDES	ACADEMIA
FUNDACION CORCOVADO	A Non-profit organization that strives to increase the protection of wild areas, promote environmental education, sustainable tourism and community participation through the sustainable use of natural resources in the South Pacific area of Costa Rica
Asoc. CORREDOR BIOLOGICO CARIBE	An association that promotes the protection of the “Corredor Biologico” of the country and indigenous communities.
CLADA del CATIE-Fundación NICOYAGUA	ACADEMIA
UNA	ACADEMIA
CFIA y AYA	Costa Rican Institute for Aqueducts and Sewage Systems and the Engineers Professional Association
COOPESOLIDAR R.L.	The organization mission is to develop innovative ways for biological and cultural wealth of the region to contribute to the quality of life of local communities, with justice and equity. Its inter-disciplinary team accompanies communities through processes of planning, decision-making and organisational development. Coastal communities and sustainable fishing lie at the heart of their programme.
FUND. KETO	Organizations mission is To assure knowledge management necessary to promote the responsible use of the coastal-marine ecosystems.
CEDARENA	Its mission is to promote sustainable development through research, communications and action programs.
Among other’s possible organizations.	

B. Describe the measures for financial and programme risk management.

Risk	Category	Level of Significance	Mitigation Measures
Extreme weather events or geophysical events diminish programme benefits or cause major	Environmental	Medium	In order to mitigate anticipated natural hazards, the programme has considered the improvement of community preparation and response by developing and consolidating early warning

disturbances resulting in delays due to needed emergency and recovery processes.			protocols and systems, as well as the strengthening of institutional capacities in the systematic monitoring of climate change.
Programme beneficiaries resistant to change or weak cooperation at the proposed sites	Social	Medium	The development of the concept and the full programme proposal, as well as the site selection, involved the consultation of different stakeholders such as organizations, public and private institutions, that are implementing projects related to climate change. The programme will ensure the continuity of the consultation processes and will facilitate an active participation of the beneficiaries in order to reinforce the beneficiaries' ownership of the project, supporting proactive and community-led initiatives. The project promotes a 'bottom up' approach to create a community ownership of the project interventions.
Project beneficiaries are unable to properly manage the technologies or measures being promoted, and/or the technologies or measures do not improve operational efficiency	Social	Medium	Knowledge transfer and awareness building through a proactive outreach communication strategy and capacity building activities are contemplated throughout the programme. The programme promotes a capacity development approach which is based on participatory assessments. These assessments will contribute to building the beneficiaries' ownership and enable the analysis of autonomous adaptation approaches.
Stakeholders are not able to perceive reductions in vulnerability over the time-scale determined by programme duration.	Social	Medium	Maintain proactive outreach communications strategy throughout the programme. Also, the programme will strength local capacity to monitor project indicators.
Insufficient collaboration/coordination between participating partners and stakeholders	Institutional	Low	Establishment of agreements with detailed roles and responsibilities, work plans and team building activities throughout the programme implementation. Reinforcement of mutual obligations for project implementation will be executed at programme outset and during annual and mid-term reviews. The participation of NGO's, public organization, academia and other organizations will ensure the creation of alliances and that adaptation measures are demonstrated on the basis of participative processes at the local level.

Delays in programme implementation	Institutional	Low	Programme activities have been designed and paced to ensure a reasonable chance of completion over five years. The Programme Management Board will provide required oversight for management of programme inputs.
Limited human resources in Government ministries to support activities.	Institutional	High	Promotion of early and consistent engagement of senior government decision makers on programme progress and monitoring.
Mismanagement of Resources.	Financial	Low	Risks related to financial management are adequately managed by timely implementation of foreseen auditing mechanisms and M&E procedures.
Fluctuations in exchange rate	Financial	Low	Financial Coordinator will closely monitor exchange rate (USD to Colones) in order to communicate any implication to the PC.
Delays in disbursements affects project progress	Financial	Low	In order to avoid delays it is expected to anticipate as much as possible and to promote constant coordination among National Implementing Entity, Executing Entities and the Adaptation Fund

C. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy.

Environmental and Social Principles			Key Issue (Yes/No)	Justification (If answer is yes, describe risks)	Corrective or Preventive Actions
1	**Compliance with the law**	The development of the initiative represents any potential risks of non-compliance with national and/or international legislation?	Yes	For the agricultural initiatives related to fertilization or waste management practices a risk of water contamination exists.	Request executing organizations respective permits or legal justification of its omission for all proposed infrastructure.
				There is a risk that the properties (land) where the initiatives will be developed may present legal issues.	Request executing organizations cadastral plans, land use permits and other legal documents that demonstrate the legality of the properties and implemented activities.
				For the initiatives related to construction a risk of non-compliance with the necessary permits requested by the municipality, CFIA, SETENA and others (according to the dimensions of the construction) exists.	Request the respective applicable permits or the legal justification of its waiver for all proposed infrastructure.
2	**Access and Equity**	The development of the initiative represents a risk that there will be no just and equitable access to benefits?	Yes	All initiatives are oriented at areas vulnerable to the climate change, including beneficiaries with vulnerable socioeconomic conditions; however there exists a risk that some of the initiatives, as for instance capacity building, would not be oriented towards all existing vulnerable groups. Similarly, all groups are not necessarily willing to receive capacity building.	Request that the activities that will be executed to build capacity must be published in local media. In the process, priority must be targeted to women and most vulnerable local populations and/or groups.
		The development of the initiative represents a risk to inhibit the access to basic benefits as health services, drinking water and treatment, energy, education, etc.?	Yes	On the contrary the initiatives are oriented at promoting basic services such as drinking water, wastewater treatment, waste recollection and education. However, there will be activities executed with ASADAS that provide drinking water service to the community, and therefore the issue could indirectly apply.	Include contractual clauses to executing agencies, requiring equitable access to basic benefits and specifying that none of the initiatives is going to inhibit or interfere in the access to basic benefits.
		The development of the initiative represents a risk to maximize the existing inequity, particularly for marginalized or vulnerable groups?	Yes	There exists a risk to maximize existing inequities. For example there exist socioeconomic vulnerable groups that due to their location are more vulnerable to climate change and have not been identified as beneficiaries within the initiative. Similarly, identified beneficiaries are not necessarily the most vulnerable ones.	Include contractual clauses to executing agencies that no initiative is going to maximize existing inequity. Request previous evidence of the condition of vulnerability of the identified beneficiaries. Ensure continuous

					monitoring of the selected priority region at the country level in order to ensure that the most vulnerable beneficiaries are selected on a continuous basis.
3	**Marginalized and Vulnerable Groups**	The development of the initiative represents risks of generating an adverse impact on marginalized and/or vulnerable groups like children, indigenous groups, refugees, people living with HIV/Aids, etc.?	Yes	No initiatives are identified with orientation or execution that could generate a negative impact on marginalized and/or vulnerable groups. On the contrary the initiatives are oriented to generate benefits for the groups most vulnerable to climate change and socioeconomic conditions. However, there is the risk represented that during the development of the initiative, marginalized and/or vulnerable groups that could be affected during the development of the initiative are not identified yet. For example, indigenous groups that could be affected by the development of agricultural activities.	Request executing agencies the identification of vulnerable or marginalized groups that could be directly or indirectly impacted during the development of the initiative, or even after its implementation. In the case they do exist, request mitigation plans to eliminate or solve the adverse impacts. Include clauses that the development of the initiatives will not generate adverse impacts on marginalized groups.
4	**Human Rights**	The development of the initiatives represents a risk of disrespecting international human rights?	Yes	No initiatives are identified whose orientation or execution is misaligned with the established international human rights. On the contrary the objective is to promote basic human rights such as drinking water, sanitation and education. However, there does exist the possibility that for the implementation of some initiatives human rights may be disrespected, for example civil rights, quality of life, social justice, children rights, discrimination, etc.	Include contractual clauses to executing agencies so that the development of the initiatives will be in compliance with human rights and that during their development no deviation or disrespect of human rights will be tolerated.
5	**Gender Equity and Women's Empowerment**	The development of the initiatives represents a risk of not promoting gender equity in a way that men and women are enabled to participate fully and equally, receiving equal social and economic benefits and not suffering from adverse affects during the development of the same?	Yes	The initiatives are oriented to promote a fair and equal development between men and women. Some initiatives are also oriented to promote the active involvement of women groups in order to achieve enhanced empowerment. However, during the execution of the initiatives a risk exists of not promoting gender equity.	Include contractual clauses to executing agencies that for all initiatives, a cross-cutting component of gender equity has to exist and be maintained.
6	**Core Labor Rights**	The imitative represents a risk of disrespecting the labor rights identified by the International Organization for Work?	Yes	The risk has been identified that the people working for the beneficiaries or the executing organization of the initiatives could be outside the national or international legislation (for example minimum salary, vacations,	Request executing agencies a legal declaration that shows compliance with labor rights identified by the International Organization for Work.

				insurance, etc.)	Request confirmation from the CCSS (Social Security System) that the executing agency is in due compliance.
7	**Indigenous Peoples**	The development of the initiatives represents a risk of disrespecting the rights and responsibilities established in the Declaration of the United Nations about the Rights of Indigenous groups and/or applicable instruments related to indigenous groups?	Yes	No initiatives are identified whose orientation or execution disrespects the rights and responsibilities of indigenous groups. However, there does exist a risk that during the development of these initiatives, the rights of indigenous groups could be disrespected in a direct or collateral way, for example because of territorial or cultural issues.	Request identification of indigenous groups that could be directly or indirectly impacted during and after the development of the initiatives and in case they exist, request concrete mitigation plans to eliminate or solve the adverse impacts. Include contractual clauses to executing agencies that the development of the initiatives will not generate adverse direct or indirect impacts on indigenous groups.
8	**Involuntary Resettlement**	The development of the initiatives represents a risk of involuntary resettlement of inhabitants?	No	No initiative has been identified with orientation or execution requiring involuntary resettlement. However there exists a risk that this may occur, for example if it is necessary to modify the design to an aqueduct for an ASADA.	Include a contractual clause for the necessity to communicate to the implementing agency and formulate a remedial plan in case the involuntary resettlement of part of the population is necessary to develop the initiative.
9	**Protection of Natural Habitats**	The development of the initiatives represents an unjustified risk of conversion or degradation of natural habitat including those legally protected, officially proposed to become legally protected, critical habitats or areas renown and protected for indigenous groups or traditions?	Yes	There is a risk that some agricultural activities are developed nearby protected areas or surrounding areas.	Request cadastral plans or land use permits to verify the existence or proximity to protected areas. Verify with SINAC if there are management plans in the boundaries (if they exist).
10	**Conservation of Biological Diversity**	The development of the initiatives represents a risk of unjustified reduction or loss of biodiversity, as for example the massive introduction of alien	Yes	The activities are focusing on Ecosystems based Adaptation as proposed, including recovery of biodiversity and agro ecological practices at the farm level. However, a minor risk of unjustified reduction of biodiversity during the development of agricultural activities does exist.	Request executing agencies to identify and prevent risks of biodiversity loss and to avoid introduction of alien species.

		species?		A risk of introduction of non indigenous species and possible invaders have been identified in the reforestation processes.	Request the technical study for the proposed reforestation processes.
11	**Climate Change**	The development of the initiatives represents a risk of unjustified generation of greenhouse gases?	Yes	No initiative has been identified with an orientation or execution that could generate unjustified greenhouse gases. On the contrary there are initiatives, as the implementation of biodigestors, low carbon technologies and improved pasture that will lead to greenhouse gases reduction. There are transport processes for the initiatives but these are considered unavoidable. In Costa Rica there are established maximum emission parameters controlled by RTV. (National evaluation)	Request RTV for the involved vehicles for the development of the initiative.
12	**Pollution Prevention and Resource Efficiency**	The development of the initiatives represents a risk of not making efficient use of energy?	Yes	No initiative has been identified as a big consumer of energy, however there exists the risk that during the implementation of some initiatives, the use of energy or fuel would not be efficient.	Request an identification of environmental aspects and impacts for each initiative and measures to control and mitigate the energy efficiency risks.
		The development of the initiatives represents a risk of not minimizing or not making efficient use of resources?	Yes	No initiatives have been identified as big consumers of natural resources and therefore would require measures for their efficient use. On the contrary, some initiatives are oriented towards the better use of available resources, however, in some initiatives there may exist the risk that the resources may not be used in an efficient way, for example in constructions or transportation.	Request an identification of environmental aspects and impacts for each initiative and measures to control or mitigate those environmental aspects.
		The development of the initiatives represents a risk of not providing adequate treatment and disposal of waste?	Yes	There is a risk that the generated waste in some initiatives, mainly in remote rural areas, will not be adequately disposed of. However, no initiative has been identified that generates solid waste that requires any treatment.	Request a waste management plan for those initiative that require one.
13	**Public Health**	The development of the initiatives represents a risk of generating potential negative effects on public health?	Yes	The risk has been identified that some of the agricultural initiatives could generate health or odor problems, mainly those related to waste management.	Request a technical study for the activities of waste management including occupational health measures.

14	**Physical and Cultural Heritage**	The development of the initiatives represents a risk of alteration, damage or removal of resources or cultural sites or with an accepted natural and scenic value?	Yes	Since some of the activities involve indigenous population, there is a risk during the development of some of the initiates that there will be alteration or damage to sites or cultural resources with natural or scenic value.	Request compliance with Law of Cultural Heritage and Patrimony regarding identification and protection of cultural and archeological, nearby the location where the initiatives. Request the identification of preventive measures if necessary in order to avoid direct or indirect damage. Include contractual clauses that if during the development of the initiative damages to cultural, archeological or sites accepted as natural or scenic are identified, they must be communicated to the implementing entity and if necessary, actions must be suspended until finding and implementing a valid solution.
15	**Lands and Soil Conservation**	The development of the initiatives represents a risk of degradation of land or soil?	Yes	No initiatives have been identified with orientation or execution that could degrade soil or productive land. On the contrary some of the initiatives are oriented towards the conservation and use of soil however there exists a risk that during the application of good practices technical errors might incur that generate degradation of land and soil.	Request compliance with Law of Soil Use and Conservation and monitoring with technical endorsement, to verify that there is no risk of degradation of land and soil.

Conclusion.

It can be concluded that no significant adverse impacts or potential risks of significant adverse environmental and social impacts are identified. Moderate environmental and social adverse impacts are identified. They are considered moderate because preventive or corrective actions to minimize or mitigate the impact are identified. According to this conclusion and the categorization established in the "Environmental and Social Policy" of the Adaptation Fund Board, the proposal can be determined as category B. The correct application of the principles established in the mentioned policy is based on the inclusion of contractual clauses regarding each of the principles and on the periodic and programmed verification to evaluate compliance and possible deviations.

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan.

256. Monitoring and evaluation will be conducted in accordance with the organizational structure of the programme (see Part III, Section A). The Programme Management Board (PMB) will be responsible for monitoring the progress of the programme, and will supervise the Programme Coordination Unit (PCU) in the day-to-day management of the programme activities and the overall operational and financial management and reporting. The Monitoring and Evaluation (M&E) Plan will be undertaken at the programme and project level as follows:

Monitoring at project level

257. The monitoring process in the execution of projects will have the purpose of guaranteeing its timely progress, the meeting of its objectives as well as a proper use of the financial resources. Each semester, each executing agency must submit to the PCU a technical and financial report covering the progress of each project prior to the following disbursement.

258. Each executing agency will establish internal monitoring systems and will also be responsible for reporting to the PCU and subsequently to the PMB.

259. The baseline data, collected during the assessment phase of the project cycle, will be the starting point for monitoring project performance.

260. Each type of project will include a minimum logical framework with appropriate indicators in order to measure progress. The indicators should be addressed in project reports and evaluations. Additionally, specific indicators shall be developed, depending on the type of project. These indicators will bring information on the projects' sustainability, technologies and initiatives at micro-level.

Monitoring at programme level

261. The Monitoring and Evaluation Plan will be based upon the performance indicators, targets and means of verification at the output and outcome levels established in the Results Framework (Section E below), and will be elaborated by the PCU in the start-up phase of the programme. The plan will detail the arrangements regarding the monitoring of

the projects and will also establish a methodology for tracking progress against the indicators, outputs and targets identified for the Programme.

262. A Programme **Inception Workshop** will be held within three months of programme start up, with the participation of the programme team, relevant government counterparts, stakeholders and partners. The Inception Workshop is crucial to building ownership, for programme results and to plan the first year annual work plan. A fundamental objective of the Inception Workshop is to present the modalities of project implementation and execution, document mutual agreement for the proposed executive arrangements amongst executive entities. An Inception Workshop Report will be prepared and shared with participants to formalize various agreements decided during the meeting.

263. Before the inception workshop, the PCU will inform the applicant of the PMB's decision within two weeks of the date on which the agreed minutes of the meeting are signed. At the same time, if there are necessary adjustments or additions, those arrangements should be done by each of the EE before the Inception workshop. *Each project included a logical framework with appropriate indicators to measure progress, addressed in project reports and evaluations.*

Main results of the Inception Workshop:

- To inform on the assigned roles in the project management, functions, and responsibilities within the project's decision-making structures. Once the roles and responsibilities of all project organization structures are clarified, meetings should be planned.
- To notify each of the reporting and communication lines, and conflict resolution mechanisms.
- To give notice of financial reporting procedures and obligations, and arrangements for audit procedures.
- To review and agree on the indicators, targets and their means of verification, and re-check several of the assumptions and possible risks. Along with the indicators and targets, a Monitoring and Evaluation work plan and a budget should be agreed and scheduled.

264. **Annual plans:** The formulation of the annual plans will adhere to a logical scheme that will guarantee the exact definition of each of the actions to be executed for the following period as well as the required back-up budget.

265. **Six-month report:** reports must include technical, financial and promotional information/results on the Programme. At the technical level, reports will be prepared against set goals, objectives and targets; it also includes lessons learned and risk management, an appraisal as a percentage of the progress made regarding the execution of the activities action and the achievement of the expected products during the period. On the other hand, financial reports include a detailed financial disbursements and a cost-benefits evaluation.

266. **Audit reports**: while the financial reports are prepared, external audits reports are also required. Annual external reports are made in accordance with National Financial Regulations and Rules and applicable audit policies.

267. **Mid-term of the project cycle:** An external Mid Term Evaluation (MTE) is planned at the mid-point of project implementation in order to review if the programme is on track and if corrections are needed. Final results of MTE are submitted to the PMB and PSC.

268. The specific purpose of the MTE is:

- Assess the state of implementation in terms of outputs and outcomes achieved.
- Assess results achieved or to be achieved by the projects in the regions selected.
- Draw lessons learned about project design, implementation and management.
- Assess the efficiency: quantity, quality, cost and timeliness of the programme inputs and activities.

269. **Final evaluation:** An independent Terminal Evaluation will take place three months prior to the final PMB meeting. The final evaluation will focus on the delivery of the project's results as planned (including corrections suggested by the mid-term evaluation). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals.

270. **Learning and knowledge sharing:** will include various ways of promoting, exchanging and disseminating relevant information on climate change adaptation that will simultaneously strengthen individual and organisational capacities in climate change.

271. The programme will identify and participate in appropriate forums, conferences, scientific networks and others, which may be of benefit to the programme implementation though lessons learned and that will allow dissemination of good practices beyond the programme intervention. The programme will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects.

Table 20 Monitoring and reporting and its procedures:

Goals and direction	Executing Entities	National Implementing Entity-PMB	PSC
Downward accountability	▪ Continuous Information Flow ▪ Annual Reports ▪ Media	▪ Continuous Information Flow ▪ Six-month reports ▪ Newsletter, Website ▪ Annual Meeting with PSC	▪ Minutes of Directors Meeting ▪ Annual Reports ▪ Min-term Review ▪ Final Evaluation
Upstream accountability	▪ Annual audit ▪ Progress reports ▪ Six-months reports ▪ Annual reports ▪ End of project reports ▪ Audits	▪ Six-months reports ▪ Annual reports ▪ Annual audit ▪ Director's meetings	▪ PSC Meetings ▪ Minutes of Meeting ▪ Annual Reports ▪ NIE and projects Audit Reports ▪ Mid-term Review ▪ Final Evaluation
Learning and knowledge management	▪ Public Discussions and Debates ▪ Publications ▪ Media ▪ Internal evaluation exercises	▪ Public Discussions and Debates ▪ Linking Learning Cycles ▪ Publications ▪ Media	▪ Conferences and International Workshops ▪ Director's Meetings ▪ Analyzing and Documenting results ▪ Publications

	▪ Analyzing and Documenting Projects ▪ Knowledge and Experience Exchange Events.	▪ Project evaluations	▪ Media ▪ Mid-term Review ▪ Final Evaluation

Table 21 Monitoring-evaluation plan and budget needed at the NIE level.

Type of M&E Activity	Budget	Time-frame
Inception Workshop and Report	$10.000	Within 3 months of project start
Periodic status/ progress reports	None	Quarterly
Mid-term Review	$35.000	At the mid-point of project implementation.
Final Evaluation	$40.000	During 6 months after the end of project implementation.
Audit	Programme: $15.000 per year	Yearly.
Visits to field sites	To be determined as part of the Annual Work Plan.	Yearly as required
Total: *(excluding travel expenses and staff time)*	**$160.000**	

E. Include a results framework for the project proposal, including milestones, targets and indicators and sex-disaggregate targets and indicators, as appropriate. The project or programme results framework should align with the goal and impact of the Adaptation Fund and should include at least one of the core outcome indicators from the AF's results framework that are applicable[2627].

OUTPUT	Act.	Indicator	Baseline	Target at end of Project	Sources of Verification	Assumptions
1. Strengthened farming productivity in response to climate change, in order to reduce loss of soil and improve water management.						
1.1.	1.1.1.	# new farming zoning scenarios, Agro-ecological zoning (ZAE, for its acronym in Spanish) maps for selected crops of the Central Region # of beneficiaries trained (technicians and farmers) by gender on technical options and methods resilient to the effects of Climate Change	-Country does not have agricultural zoning up to date, the last one was done in the 1980´s on a scale of 1:200.000, which is obsolete and does not consider climate variations and future climate scenarios. Also, this scale does not allow to focus on adaptation actions for specific production systems. -Central Region of Costa Rica shows conditions of high precipitations, land degradation, soil fertility loss, as well as moderately excessive drainage.	-13 ZAE maps for selected crops of the Central Region -4 technological showcases implemented and applying technology options for the adaptation to climate change in Naranjo, Puriscal, Dota and Pacayas. -1 online platform with updated information on adaptation technologies and zoning scenarios (according to the agricultural conservation practices to be implemented or to the climate changes that may occur naturally or by the degradation or recovery of the lands) -1000 beneficiaries	Project reports, monitoring & evaluation reports	Volunteer farmers whose lands will be set up as a research farm continue the commitment that they expressed during the consultation
	1.1.2	# technological options identified in order to strengthen resilience to Climate Change	-Current agricultural and livestock rearing practices are based on historical climatic conditions and trends, therefore those practices are unsuited to present and future Climate scenarios. -Climate change alters the phenology patterns in crops as well as yields	-At least 90 agricultural and livestock units has identified technological options -At least 90 plans for adaptation at farm level	-Reports on community consultations and trainings -Site/field visits	

[26] Please refer to the *Project level results framework and baseline guidance* for the Adaptation Fund's results framework and guidance on developing a results framework and establishing a baseline [add link here].

[27] The targets established in the framework are going to be improved during the inception workshop.

	1.1.3.	# Number of climate-resilient agricultural/livestock practices demonstrated to support adaptation of vulnerable farmers # of beneficiaries (men and women) implementing climate resilient agricultural/livestock practices # ha (in indigenous people communities) with reduced vulnerability		-At least 1000 beneficiaries -By the end of the project, at least 90 discrete agricultural adaptation practices are demonstrated on-farm. Adaptation practices include: enhanced water management techniques, enhanced soil management practices, planting techniques, post-harvest processing and diversified livestock practices. -At least 1000 ha on indigenous territories implementing technical options and methods that enhance their resilience to the effects of climate change	Project reports, monitoring & evaluation reports	
1.2.	1.2.1	# of beneficiaries from the agricultural insurance (gender-disaggregated)	In 1998, the agricultural sector accounted for 14% of the total domestic credit, while today, from the total credit granted to productive sectors offered by the local financial system, only 3.5% is directed to agriculture and agribusiness activities. Furthermore, besides the lack of access to credit, high production costs reduce the competitiveness of the sector.	-At least 10 initiatives per year have access to credit schemes for the implementation of adaptation activities -At least 5 microfinancing institutions include credit products available to local small producers for adaptation to climate change	Project reports, monitoring & evaluation reports	Initiatives funded by the refundable programme are completed successfully, involving both men and women in an equitable manner.
	1.2.2	# of beneficiaries from the refundable funds (gender-disaggregated)				
2. The availability of water resources for human consumption is preserved and the vulnerability of coastal communities is reduced through the participation of communities in protecting critical ecosystems (For example: mangroves, watersheds and coastal areas).						
2.1	2.1.1	# of ASADAS (*Community-based water management organizations*) and municipality water supply systems implementing a Water Safety Plan for climate change adaptation # of ASADAS with a infrastructure vulnerability assessment	-The ASADAS (Community-based water management organizations) and local governments do not have Water Safety Plans of its major systems, preventing them from identifying mitigation measures and improvements needed in their drinking water systems. The ASADAS provide water service to at least 24% of the national rural population (more than 1592 ASADAS have been identified and still counting), while local governments represent just over 15%.	-At least 50 ASADAS and 2 municipalities have implemented a Water Safety Plan -At least 12 ASADAS have undertaken a vulnerability assessment -At least 3 committees formed by various social actors - At least 25,000 water users beneficiated	-6 month project reports -Annual workplans & reports -Mid-term and terminal evaluation -Development plans -Site visits reports -Design and	-The water safety plans and vulnerability assessments are implemented in stages of design, construction and operation of infrastructures. It is expected that these plans succeed in reducing vulnerability to climate change by providing new options and promoting specific actions.

		# of community groups formed and operationalized for adaptation planning			investment plans -Groundwater and surface water monitoring reports -Minutes of committee meetings	-Impacts of climate change do not outpace project adaptation responses (this will be alleviated by the project's interventions targeted to build resilience). -Local stakeholders participate in project implementation. -Timely disbursement of project funds.
	2.1.2	# of measures implemented for integrated watershed protection in accordance with the Water Safety Plan # Hectares of watershed area under improved management practices Ecosystem services and natural assets maintained or improved under climate change and variability-induced stress	Climate change exacerbates existing watershed management challenges, such as water shortages, protecting water quality and managing natural hazards. Existing watershed plans do not take into account the degree to which climate change is compounding those problems. Strategies and responses need to be refined to address additional pressures related to climate change.	-At least 5 measures implemented for integrated watershed protection -5000 hectares of the watershed under improved management practices		
2.2	2.2.1	# Hectares of aquifer recharge in the intervention area	-Constantly loss of forest cover in the areas of protection of aquifer recharge areas and water bodies	At least 50 hectares of aquifer recharge areas reforested	-Project reports, monitoring & evaluation reports; -Annual workplans & reports; -Design and investment plans for water supply; -Field surveys and inspections.	-Land use pressures limit possibility of extending and consolidating reforestation iniciatives -Local actors recognize the value of safe groundwater, participate in the regular monitoring of groundwater quality, and ensure proper maintenance of groundwater recharge systems -Local stakeholders participate in project implementation -Impacts of climate change do not outpace project adaptation
	2.2.2	# of beneficiaries (men and women) accessing to improved water services and having access to infrastructure that properly manage the impacts on water supply induced by climate change.	-The target communities lack robust water supply system to withstand climate-induced impacts in water supply. The level of climate vulnerability of the water sector ranges from medium to low.	At least 25,000 inhabitants in 50 communities have their water supply and associated infrastructure, improved to manage climate-induced impacts on water supply		

						response
	2.2.3	# of beneficiaries (men and women) from the refundable funds (gender-disaggregated) # of credit products tailored to the needs of ASADAS and national water systems	-Among the 1.542 ASADAS (identified at the moment) and the 28 local governments, there is a need for $ 774 million, for the treatment of drinking water, as well as collection and treatment of wastewater for the period 2010-2030. Furthermore, funds for adaptation in the water resources sector are scarce and limited to contributions from international cooperation. The canons for water use and discharge are currently being implemented, but this fee is not being redirected to the water resources management. (Water Agenda 2013)	-At least 10 initiatives per year -At least 2 credit products available for adaptation to climate change of local water management associations (ASADAS) and national water systems	-Project reports, monitoring & evaluation reports; -Annual work plans & reports; -Design and investment plans for water supply; -Field surveys and inspections.	Initiatives funded by the refundable programme, are completed successfully, involving both men and women in an equitable manner.
2.3	2.3.1	# of citizens in coastal zones who have enhanced adaptive capacity to respond to climate-induced risks # of risk exposed coastal communities protected through adaptation measures # kilometers of coastline protected	-Risk-exposed communities are to a large extent unable to adapt to climate change due to a lack of resources, capacity, knowledge and the necessary support through local and national institutions as well as policy frameworks -Over 40% of the beaches of Puntarenas, Guanacaste and Limón have erosion. In Costa Rica, a receding coastline will be generated, so that the areas of flood caused by the sea, especially at high tide, will be expanded. In addition, this will mean an increase in coastal erosion, mainly of the Central Pacific.	-At least 500 citizens in coastal zones are prepared and trained to deal with the impacts of climate change -At least 10 coastal communities have implemented at least one adaptation measure -8 m of coastline and beaches in protected areas, redesigned and reforested -At least 1 Community Coastal Reforestation Program	-Project reports, monitoring & evaluation reports; -Reports on community consultations, trainings and surveys; -Site/field visits	-Strong community engagement, cooperation and support for project activities. -Local stakeholders participate in project implementation. -Political will and commitment to ensure plans are prepared in a fully participatory manner. -Impacts of climate

	2.3.3	Area of mangroves under rehabilitation through planting of resilient seedlings, dredging and the creation of no-take buffer zones	-Mangroves of the National Protected Wildlife Areas have an area of high potential impact due to sea level rising estimated in 23.993 Ha (BIOMARCC, 2013)	-25 ha of mangrove reforested in Gandoca (including areas within the National Wildfire Refuge Gandoca Manzanillo) -At least one coastal community implement a mangrove nursery effective to combat coastal erosion	Reports, visual observation, mangrove and forest studies	change do not outpace project adaptation responses.
3.1	3.1.1.	# of early warning systems developed	-There are several efforts and some country experiences with early warning systems. The country has a National Risk Plan that establishes the definition of this system as one of its policies, however there are only few experiences in the implementation of earley warning systems. -Costa Rica will face in the coming years strong droughts, and dry weather conditions that will difficult existing fire management schemes, and therefore, the management and prevention of forest fires, this will affect ecosystems. Over half of Costa Rica's existing forest coverage today is under the protection of national parks, biological reserves, or wildlife refuges.	At least one Early Warning System and Emergency Protocol implemented One management system and incident management for Forest Fires	-6 month project reports -Annual work plans & reports -Mid-term and terminal evaluation -Development plans -Site visits reports -Capacity development evaluation reports -Training session minutes and attendance registers -Reports on community consultations, trainings and surveys	'-In the development of early warning systems, it is essential to recognize that different groups have different vulnerabilities according to their cultural, gender and other characteristics, which affect their ability to effectively prepare, prevent, mitigate and respond to natural disasters. - Information, institutional arrangements and alert communication systems shall be tailored to meet the needs of each group and each community. -Strong coordination amongst climate change and disaster risk reduction stakeholders. -Strong community leadership, support and engagement in project activities
	3.1.2	# of community representatives trained on early warning systems	-Currently there has been no training for communities in coastal adaptation and climate risk reduction processes. Furthermore, outreach efforts are still emerging in the process of Vulnerability and Capacity Analysis by the Costa Rican Red Cross, which contains information for adaptation to climate change. A wide spread of climate-related knowledge at the community level has only been done in four districts of the Pacific coast and one district of the Caribbean coast.	At least 5 communities trained, involving traditional leaders, women and youth groups		
3.2	3.2.1 3.2.2 3.2.3 3.2.4 3.2.5	# of beneficiaries trained on adaptation measures (gender-disaggregated) # of beneficiaries using	-Lack of knowledge on adaptation measures and climate change impacts. Baseline to be set at the beginning of the project	-At least 3,000 beneficiaries trained -At least 1000 policymakers and technical officers exhibit improved levels of understanding of climate risk assessment and planning processes for	Community consultations and surveys 6 month project reports Annual	Senior officials and technical officers have the time to commit to planning and training activities.

	3.2.6	climate risk information to adjust their livelihood behavior # of stakeholders participating in awareness raising events # of policymakers and technical officers trained on climate risk assessment and planning processes for climate change adaptation # of knowledge materials generated on lessons learned and best adaptation practices.		climate change adaptation. -At least than 50 stakeholders participating in awareness raising events -At least 10 knowledge materials (experience notes, case studies, photo stories, videos, etc.) are generated per year starting from year 2 of the programme -A completed and operationally tested "Handbook on Coastal Adaptation", "Technical Guide for Adaptation to Climate Change for the artisanal fishing sector" and "Handbook on Water Supply Systems Adaptation" is developed by the end of the project -1 online training course	work plans & reports Mid-term and terminal evaluation Attendance lists Training materials Training evaluation reports Documents on lessons learned, best practices and case studies	
3.3	3.3.1 3.3.2 3.3.3	% of programme beneficiaries making use of improved climate risk information and climate monitoring processes, disaggregated according to gender # of institutions and local level stakeholders that have access to climate change-related information and integrate it into their work. # of new hydroclimatological stations	-Lack of data, inconsistency of these, as well as the lack of coordination between institutions for channeling information, decision-making and hydrometeorological networks. Also, the information is not avaliblable to the local stakeholders, and is not used for decision making at the community / small scale level.	-70% of programme beneficiaries make use of improved climate risk information -At least 10 properly installed and functioning new meteorological stations	'-Field reports -Climate-related databases -Project reports: annual reports; mid-term and final evaluations -Hydrological data reported by monitoring stations	'-Hydroclimatological and ecological information is available in a timely manner. -Most vulnerable communities take advantage of the available information -Political will and commitment to ensure effective use of climate information, and undertake monitoring of climate impacts on terrestrial, marine and coastal ecosystems. -Hydrological reporting stations remain operational

F. Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund

Programme Objective(s)[28]	Programme Objective Indicator	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Increasing the adaptation capacity to climate change in the agricultural sector.	# of beneficiaries (men and women) implementing climate resilient agricultural/livestock practices	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses 6.2. Percentage of targeted population with sustained climate-resilient livelihoods	**3**
Improving water resources management in order to increase resilience in coastal communities that are more vulnerable to climate change.	# of citizens in coastal zones who have enhanced adaptive capacity to respond to climate-induced risks	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic & environmental losses	2.2. Number of people with reduced risk to extreme weather events	**3,4**
Improving the capacity of communities, producers, institutions, and stakeholders regarding adaptation to Climate Change.	# of beneficiaries trained on adaptation measures (gender-disaggregated) # of beneficiaries using climate risk information to adjust their livelihood behavior # of stakeholders participating in awareness raising events	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	**1,9**

Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)
Strengthened farming productivity in response to climate change, in order to reduce loss of soil and improve water management.	# of beneficiaries trained (technicians and farmers) by gender on technical options and methods resilient to the effects of Climate Change	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities. Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	3.1.1 No. and type of risk reduction actions or strategies introduced at local level 6.1.1. No. and type of adaptation assets (physical as well as knowledge) created in support of individual or community-livelihood strategies	**3**
The availability of water resources for human consumption is preserved and the vulnerability of coastal communities is reduced through the participation of communities in protecting critical ecosystems (For example: mangroves, watersheds and coastal areas).	# of beneficiaries (men and women) accessing to improved water services and having access to infrastructure that properly manage the impacts on water supply induced by climate change.	Output 2.1: Strengthened capacity of national and regional centers and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events	**3,4**
Communities, producers, institution and stakeholders improve capacities regarding adaptation to climate change by developing and improving the information, awareness and abilities about related socioeconomic and environmental risks	# of beneficiaries trained on adaptation measures (gender-disaggregated) # of beneficiaries using climate risk information to adjust their livelihood behavior # of stakeholders participating in awareness raising events	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.1 No. and type of risk reduction actions or strategies introduced at local level	**1,9**

G. Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs.

OUTPUT	Budget lines	Adaptation Fund Amount					
		Year 1	Year 2	Year 3	Year 4	Year 5	Total ($)
1. Strengthened farming productivity in response to climate change, in order to reduce loss of soil and improve water management.							
1.1	01 Personal services	$ 69.000	$ 115.000	$ 115.000	$ 92.000	$ 69.000	$ 460.000
	02 Non-personal services	$ 103.500	$ 172.500	$ 172.500	$ 138.000	$ 103.500	$ 690.000
	03 Materials and supplies	$ 86.250	$ 143.750	$ 143.750	$ 115.000	$ 86.250	$ 575.000
	04 Machinery and equipment	$ 34.500	$ 57.500	$ 57.500	$ 46.000	$ 34.500	$ 230.000
	05 Infrastructure (construction and/or remodeling)	$ 51.750	$ 86.250	$ 86.250	$ 69.000	$ 51.750	$ 345.000
1.2.	02 Non-personal services		$ 40.000	$ 40.000	-	-	$ 80.000
	03 Materials and supplies		$ 40.000	$ 80.000	-	-	$ 120.000
	06 Refundable Funds	$ 50.000	$ 100.000	$ 100.000	$ 150.000	$ 100.000	$ 500.000
Total		$ 395.000	$ 755.000	$ 795.000	$ 610.000	$ 445.000	$ 3.000.000
2. The availability of water resources for human consumption is preserved and the vulnerability of coastal communities is reduced through the participation of communities in protecting critical ecosystems (For example: mangroves, watersheds and coastal areas).							
2.1	01 Personal services	$ 35.388	$ 53.082	-	-	-	$ 88.470
	02 Non-personal services	$ 56.621	$ 84.931	-	-	-	$ 141.552
	03 Materials and supplies	$ 49.543	$ 74.315	-	-	-	$ 123.858
2.2	01 Personal services	$ 51.313	$ 85.521	$ 85.521	$ 68.417	$ 51.313	$ 342.085
	02 Non-personal services	$ 76.969	$ 128.282	$ 128.282	$ 102.626	$ 76.969	$ 513.128
	03 Materials and supplies	$ 64.141	$ 106.902	$ 106.902	$ 85.521	$ 64.141	$ 427.606
	04 Machinery and equipment	$ 25.656	$ 42.761	$ 42.761	$ 34.209	$ 25.656	$ 171.043
	05 Infrastructure (construction and/or remodeling)	$ 38.485	$ 64.141	$ 64.141	$ 51.313	$ 38.485	$ 256.564
	06 Refundable Funds	$ 50.000	$ 100.000	$ 100.000	$ 150.000	$ 100.000	$ 500.000

2.3	01 Personal services	$ 26.541	$ 44.235	$ 44.235	$ 35.388	$ 26.541	$ 176.941
	02 Non-personal services	$ 39.812	$ 66.353	$ 66.353	$ 53.082	$ 39.812	$ 265.411
	03 Materials and supplies	$ 33.176	$ 55.294	$ 55.294	$ 44.235	$ 33.176	$ 221.176
	04 Machinery and equipment	$ 13.271	$ 22.118	$ 22.118	$ 17.694	$ 13.271	$ 88.470
	05 Infrastructure (construction and/or remodeling)	$ 19.906	$ 49.101	$ 35.830	$ 18.579	$ 9.289	$ 132.705
Total		$ 580.822	$ 977.036	$ 751.436	$ 661.063	$ 478.653	$ 3.449.010
3. Communities, producers, institution and stakeholders improve capacities regarding adaptation to climate change by developing and improving the information, awareness and abilities about related socioeconomic and environmental risks							
3.1	01 Personal services	$ 24.480	$ 60.384	$ 44.064	$ 22.848	$ 11.424	$ 163.200
	02 Non-personal services	$ 24.480	$ 60.384	$ 44.064	$ 22.848	$ 11.424	$ 163.200
	03 Materials and supplies	$ 32.640	$ 80.512	$ 58.752	$ 30.464	$ 15.232	$ 217.600
3.2	01 Personal services	$ 24.480	$ 60.384	$ 44.064	$ 22.848	$ 11.424	$ 163.200
	02 Non-personal services	$ 36.720	$ 90.576	$ 66.096	$ 34.272	$ 17.136	$ 244.800
	03 Materials and supplies	$ 61.200	$ 150.960	$ 110.160	$ 57.120	$ 28.560	$ 408.000
3.3	01 Personal services	$ 24.300	$ 59.940	$ 43.740	$ 22.680	$ 11.340	$ 162.000
	02 Non-personal services	$ 20.250	$ 49.950	$ 36.450	$ 18.900	$ 9.450	$ 135.000
	03 Materials and supplies	$ 16.200	$ 39.960	$ 29.160	$ 15.120	$ 7.560	$ 108.000
	05 Infrastructure (construction and/or remodeling)	$ 20.250	$ 49.950	$ 36.450	$ 18.900	$ 9.450	$ 135.000
Total		$ 285.000	$ 703.000	$ 513.000	$ 266.000	$ 133.000	$ 1.900.000
Total		$ 1.260.822	$ 2.435.036	$ 2.059.436	$ 1.537.063	$ 1.056.653	$ 8.349.010

Note	Budget lines	Description of Expenditures (to be finalized at project inception phase)
1. Strengthened farming productivity in response to climate change, in order to reduce loss of soil and improve water management.		
1	01 Personal services	Salaries for personnel
2	02 Non-personal services	National consultants to support all micro, small and medium producers located in areas that are highly vulnerable on implementing new agricultural technologies in order to strengthening productivity in response to climate change.
3	03 Materials and supplies	Articles and elements that will be used in the implementation of the component activities (Implementation of new Agro-ecological zoning (ZAE), agricultural technologies)
4	04 Machinery and equipment	Movable items, equipment and audiovisual equipment
5	05 Infrastructure (construction and/or remodeling)	Specific infrastructure and labor for the implementation of technical options and methods resilient to the effects of climate change in farmers.
6	07 Agricultural insurance and insurance policies	Identifying suitable products for the national and local context as well as the types of perils that insurance policy programme could cover.
7	06 Non-Refundable Funds	Facilitate access to financial schemes such as reimbursable funds (credit) to agricultural producers to implement sustainable management practices
2. The availability of water resources for human consumption is preserved and the vulnerability of coastal communities is reduced through the participation of communities in protecting critical ecosystems (For example: mangroves, watersheds and coastal areas).		
8	01 Personal services	Salaries for personnel.
9	02 Non-personal services	National consultants to support areas that are highly vulnerable on implementing water safety plans, management plans for watersheds and activities for and effective management of water in order to strengthening productivity in response to climate change for fishermen, ASADAS, community water management and national water systems.
10	03 Materials and supplies	Articles and elements that will be used in the implementation of the component activities (Implementation of new Agro-ecological zoning (ZAE), agricultural technologies)
11	04 Machinery and equipment	Movable items, equipment and audiovisual equipment
12	05 Infrastructure (construction and/or remodeling)	Infrastructure for water use and distribution aiming at the adaptation, modernization, and improvement in order to enhance climate resilience.
13	06 Non-Refundable Funds	Refundable funds (credit) to local water management associations, national water systems in order to implement sustainable management practices for water.
3. Communities, producers, institution and stakeholders improve capacities regarding adaptation to climate change by developing and improving the information, awareness and abilities about related socioeconomic and environmental risks		
14	01 Personal services	Salaries for personnel.

15	02 Non-personal services	National consultants to support the creation of capacities, the development and consolidation of early warning protocols and systems. Also includes, publicity, printing, travel expenses and facilitators.
16	03 Materials and supplies	Workshops materials
17	04 Machinery and equipment	Equipment for the implementation of hydrometeorological networks and information systems
18	05 Infrastructure (construction and/or remodeling)	Hdrometeorological networks and information systems

Execution Costs:

Budget lines	Adaptation Fund Amount					
	Year 1	Year 2	Year 3	Year 4	Year 5	Total ($)
Project execution costs (< 9.5% of the total budget requested, before the implementing entity fees).						
Human Resources						
Projects Execution Staff	$ 54.291	$ 54.291	$ 54.291	$ 54.291	$ 54.291	$ 271.457
Financial Staff	$ 48.259	$ 48.259	$ 48.259	$ 48.259	$ 48.259	$ 241.295
Office facilities, equipment and communications	$ 4.853	$ 5.429	$ 5.429	$ 5.429	$ 5.429	$ 26.569
Travel related to project execution	$ 9.652	$ 9.652	$ 9.652	$ 9.652	$ 9.652	$ 48.259
M&E						$ -
Inception & PSC Meetings	$ 11.000	$ 1.000	$ 1.000	$ 1.000	$ 1.000	$ 15.000
Baseline survey	$ 60.000					$ 60.000
M&E related travel expenses	$ 6.000	$ 6.000	$ 6.000	$ 6.000	$ 6.000	$ 30.000
Mid-term evaluation			$ 35.000			$ 35.000
Final evaluation					$ 40.000	$ 40.000
Audit	$ 15.000	$ 15.000	$ 15.000	$ 15.000	$ 15.000	$ 75.000
Communication	$ 5.000	$ 5.000	$ 5.000	$ 5.000	$ 5.000	$ 25.000
Total	$ 214.055	$ 144.631	$ 179.631	$ 144.631	$ 184.631	$ 867.580

Project management fee

The project management fee (8.5 % of the total budget) will be used by Fundecooperacion para el Desarrollo Sostenible, the National Implementing Entity, to cover the costs associated with the provision of general management support of the portfolio of projects.

Table 22 Breakdown of NIE estimated costs.

Cost			
Amount US$			
Finance and Budget Management	$	216.000	28%
Performance Management and M&E	$	441.000	56%
Information and Communications	$	36.000	5%
Legal Support and compliance with audit requirements	$	24.000	3%
Travel	$	36.410	5%
Total	$	753.410	100%

Notes:

Grant-Full Proposal Formulation Cost: an amount of $30.000, already disbursed.

Finance and Budget Management:

- ensuring that financial management practices comply with AF requirements and support audits as required
- manage, monitor and track AF financial resources including allocating and monitoring expenditures
- ensuring financial reporting complies with AF standards; and
- ensure cost-efficient procurement processes

Performance Management and M&E:

- Supervision of preparation of annual projects reports and projects evaluations,
- Provide oversight of the monitoring and evaluation function of the Executing Agencies
- Provide technical support in the areas of risk management, screening of financial, social, environmental and risk criteria;
- Provide guidance in establishing performance measurement processes; and
- Technical support on methodologies, TOR validation, identification of experts, results validation, and quality assurance.

Information and Communications:

- information management systems

- project management databases to track and monitor project implementation
- Dissemination of results.

Legal Support and compliance with audit requirements:

- Legal advice during the implementation of the project.

Travel:

- Project supervision mission and steering committee meetings.

H. Include a disbursement schedule with time-bound milestones.

	Upon Agreement Signature	End of Year 1	End of Year 2	End of Year 3	End of Year 4	Total (USD)
Schedule Date (Tentative)	March 2015	February 2016	February 2017	February 2018	February 2019	
Project Funds (USD)	$1.260.822	$2.435.036	$2.059.436	$1.537.063	$1.056.653	$8.349.010
EE Fee (USD)	$214.055	$144.631	$179.631	$144.631	$184.631	$867.580
NIE Fee (USD)	$146.682	$146.682	$146.682	$156.682	$156.682	$753.410
Total (USD)	$1.621.559	$2.726.349	$2.385.750	$1.838.377	$1.397.966	$9.970.000

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Annex 1. Programme Screening Methodology

Phase 1 – Regional Prioritization

The purpose of the regional prioritization methodology is to use a standardized, country-driven process to identify a short list of adaptation opportunities or projects in a given sector that meet a region's specific needs and that is aligned with pre-existing policy frameworks

A list of adaptation projects have been proposed and screened against the following main criteria:

- Submitted by eligible participating organizations;
- There no duplications of activities and promotes alliances at the local level. Have a multi stakeholder approach;
- Concrete adaptation actions in order to address adaptive capacity.
- Consistent with national strategies and technical standards
- Benefits along the following dimensions:
    - Economic development
    - Environmental benefits
    - Social benefits
    - Gender Equity
- Cost effectiveness
- Multiplier effect
- Fit into one of a maximum of three areas: Agriculture, Water Resources and Coastlines;
- Responds to the programme objectives, outcomes and outputs;
- Be submitted in Spanish, use the specified project format and include a budget in US dollars.

A five-step process is involved and detailed as follows:

1. **Research and Categorization –**collect, review and categorize relevant documents and data that provide region context, including a description of the socio-economic context, information on climate vulnerability, government priorities and climate change-relevant actions.

2. **Long List of Eligible Projects (EP) –** Based on the eligibility criteria, the proposed projects were deemed eligible or rejected.

   Eligibility criteria for **Component 1** have been selected based on consultation with the Ministry of Agriculture are the following:

   - Criteria 1.1 – Project is located within the geographical scope of Component 1 as defined in by the Programme
   - Criteria 1.2 – Products that are consumed (partly or totally) in Costa-Rica (national diet products)
   - Criteria 1.3 – Crops that are not cultivated in monoculture
   - Criteria 1.4 – Project proponents are involved in project or initiative related to gender issues
   - Criteria 1.5 – Small scale (Stablish by law by the Ministry of Livestock and Agriculture)
   - Criteria 1.6 – Compliance check: the project has demonstrated compliance or capacity to comply with all relevant national standards

   Eligibility criteria for **Component 2** have been selected based on consultation with the National Service of Groundwater Irrigation and Drainage (SENARA - *Servicio Nacional de Aguas Subterráneas Riego y Avenamiento*) and are the following:

   - Criteria 2.1 – Project is located within the geographical scope of Component 2 as defined in by the Programme

- Criteria 2.2 – The project generates benefits to the communities and improve the access to water for people
- Criteria 2.3 – Project proponents are involved in project or initiative related to gender issues
- Criteria 2.4 – Compliance check: the project has demonstrated compliance or capacity to comply with all relevant national standards

3. All the projects were evaluated against a general criteria:

    i. Level of contribution to the resolution of the immediate and urgent problems related to adaptation to climate change
    ii. Capacity to contribute to poverty reduction.
    iii. The number of beneficiaries.
    iv. The consistence with other existing policy instruments (e.g. environmental policy)
    v. The overall cost of the action, and the anticipated benefit, in monetary terms if possible.
    vi. Strategic Value: Is it in line with the programme's overall strategies?
    vii. People's participation: Shall this project generate people's (beneficiary's) involvement in project implementation?
    viii. Co-benefit: Will the project's deliverables likely yield cobenefits (sustainable development, social, environmental)?
    ix. Resource Impact: Will this project have a great impact on the resources (people, equipment, etc.)?
    x. Multiplier effect: Does the project create multiplier effect
    xi. Includes a multi stakeholder approach

Additional criteria played a particular role in making an adaptation project compelling, such as timing requirements for investment, access to funding, environmental compliance, etc. Hence it was crucial to ensure the completeness of the criteria beforehand. Completeness was ensured through the development of prioritization criteria with the support of the local stakeholders and relevant experts.

Once the applicable criteria were defined, each project was revised against each criterion and a valued will applied based on the ranking scale for each of the criteria. As a result, there was a total score for each project, which was then divided by the number of criteria to determine its priority rank. This step was completed at two levels: at the individual level (by managers or supervisors from various stakeholder and organizations) and at the advisory committee level, as a group effort in order to compare notes on the prioritization results and develop a consensus list of prioritized projects. The final consensus list is a “short list” of adaptation actions.

Please find below the priorization worksheet used to evaluate each project:

CÓDIGO	
EVALUADOR	
Macroactividad	
Beneficiarios	
Contrapartida	
Descripción del Proyecto	

Aspectos generales	Aspectos específicos	Nota 0-100	Porcentaje obtenido	Justificación de la puntuación dada (explicación se debe dar para cada puntuación)	Conclusiones	Recomendaciones
Vulnerabilidad justificada y demostrada	**PROBLEMA** Claramente se expone, mediante la utilización de estudios previamente realizados e información técnica valida, la vulnerabilidad al cambio climático y por tanto es claro el problema a solucionar. Las zonas responden a las prioridades identificadas y/o se justifica por qué esas zonas son vulnerables al cambio climático.		0%			
	JUSTIFICACIÓN Hace referencia a la situación esperada una vez que finalice el proyecto. Reduce las condiciones de vulnerabilidad al cambio climático ya identificadas.					
Soluciones de adaptacion válidas	**OBJETIVOS Y RESULTADOS ESPERADOS** Es relevante y existe coherencia entre el problema a resolver, el objetivo general, las actividades y los resultados esperados.		0%			
	ACTIVIDADES/ACCIONES EN ADAPTACIÓN Las acciones propuestas realmente responden a una necesidad de adaptación al cambio climático.					
Resultados concretos	**ACTIVIDADES MEDIBLES** Las actividades son concretas y medibles y están orientadas a solucionar las condiciones de vulnerabilidad planteadas.		0%			
	INDICADORES CONCRETOS Indicadores propuestos permiten demostrar cómo se ha mejorado la capacidad de adaptación al cambio climático.					
	IMPACTO El proyecto explica claramente cómo el proyecto tendrá un impacto: Ambiental-5 Puntos Social- 5 Puntos Economico- 5 Puntos Equidad de género- 5 Puntos					
Efecto Multiplicador	**REPLICABILIDAD** Los resultados se publican y/o son difundidos a otros actores similares		0%			
	Los resultados pueden ser replicados por otras organizaciones					
	SOSTENIBILIDAD El proyecto prevee una estrategia sólida para asegurar de que el impacto del proyecto es mucho más allá de los fondos de cooperación y del período del proyect-20 Puntos					

Beneficiarios demostrados e involucrados	**BENEFICIARIOS INVOLUCRADOS** El proyecto permite al grupo objetivo participar desde el comienzo de la implementación del proyecto (Presentación de cartas)					
	NUMERO BENEFICIARIOS SIGNIFICATIVOS Actividades propuestas impactan a una cantidad relevante de beneficiarios con condiciones socioecónicas vulnerables y afectación por cambio climático.					
	INVOLUCRAMIENTO DE ACTORES RELEVANTES Se involucran a actores relevantes y necesarios en las actividades propuestas y logro de resultados esperados		0%			
	BENEFICIARIOS INDIRECTOS Se definen e impacta positivamente a beneficiarios indirectos relevantes					
	El proyecto contribuye al aprendizaje en adaptación al cambio climático y/o promueve instrumentos que aseguren que la adaptación se seguirá aplicando					
Costo-Beneficio	Existe una relación aceptable entre los fondos solicitados y los resultados esperados.					
	Niveles de contrapartida - Contribución de las entidades de ejecución: entre el 5% y el 20% = 5 puntos; entre el 20% y el 50% = 10 puntos y más del 50% = 15 puntos - Contribución de los grupos beneficiarios: entre el 5% y el 20% = 10 puntos; si es superior a 30% = 15 puntos		0%			
	Se incluye un presupuesto detallado con notas sobre el uso de porcentaje que le corresponde a la gestión de la Entidad Ejecutora, que permite valorar la razonabilidad del presupuesto planteado					
Capacidad de la organización ejecutora	**Organización ejecutora:** -Experiencia demostrada en coordinación y ejecución de proyectos y manejo responsable de fondos.- 20 puntos -Experiencia demostrada en desarrollo sostenible y en temas de adaptación al cambio climático- 20 puntos		0%			
Total			**0%**			
Para ser seleccionada, la propuestas debe obtener por lo menos el 60% del máximo de puntos disponibles en cada una de las categorías.						

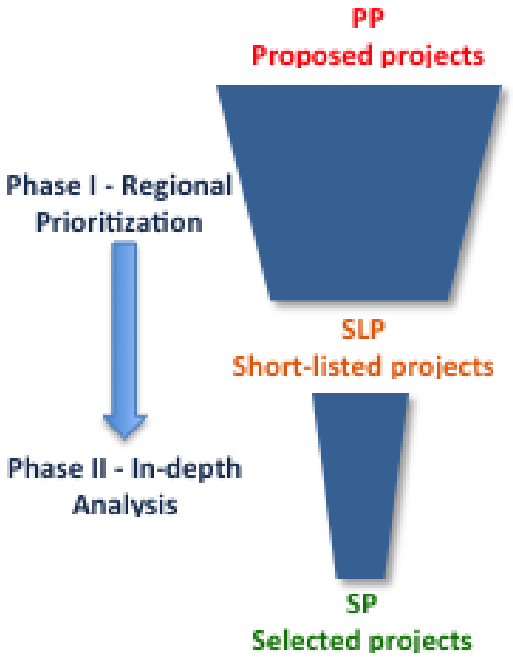
4. **Validation and Finalization –** Validate the short list of priority adaptation opportunities with government authorities and key stakeholders. Revise the short list and regional report based on expert input.

Phase II - In-depth Analysis

For a given project, the in-depth analysis will provide a technical assessment of:

- Vulnerability reference case and current level of climate risks
- Adaptation potential (climate resilience)
- Adaptation costs
- Sustainable development and climate mitigation co-benefits

The screening methodology can be summarized as follows:



Annex 2. Consultation Process

For the development of the Concept Note and the Fulll Country Programme, Fundecooperación for Sustainable Development, as a National Implementing Entity of the Adaptation Fund, followed a bottom up stakeholder consultation approach, as shown below:

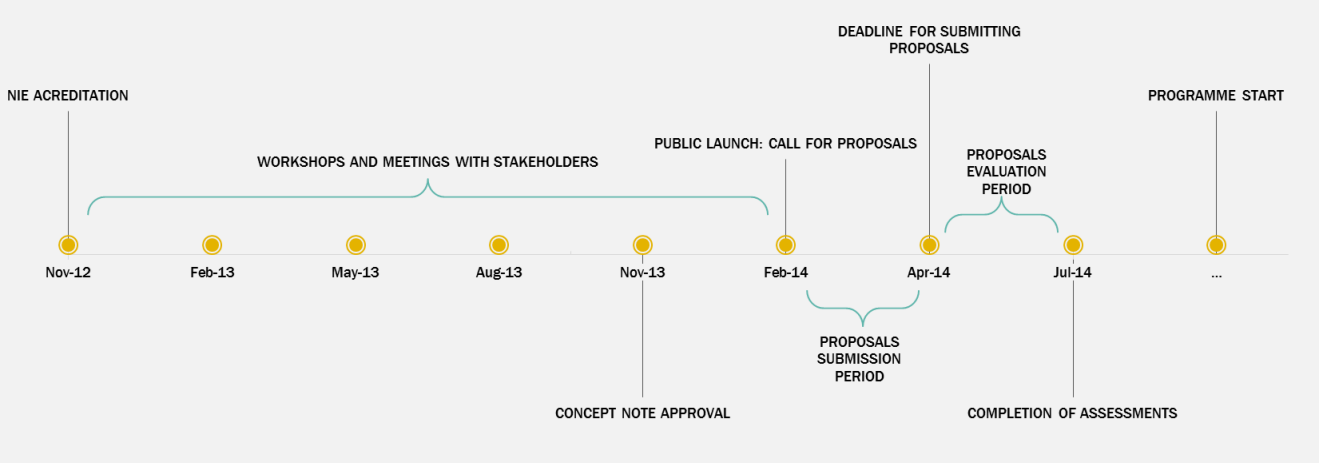


Figure 21 Participative decision-making process

Development of the Concept Note

Period: November 2012 to November 2013

Following the notice of accreditation of Fundecooperación as National Implementing Entity by the Adaptation Fund in November 2012 at the Conference of the Parties number 18 (COP-18), the Concept Note preparation begins, which demonstrates Costa Rica's vulnerability to climate change, sets the priority sectors according to the National Climate Change Strategy and defines the scope, objectives and main activities proposed. To develop the concept note of the Country Programme, workshops and meetings with different organizations involved in each sector were performed, for both construction and feedback on the issues raised. During this period, the proposal was evolving according to evaluations, comments, suggestions and requirements of the Adaptation Fund.

The series of workshops and meetings held with stakeholders were oriented in learning current efforts that are beging done in agriculture, water resources and coastal / fishing areas at the local level and related to adaptation, as well as in identifying opportunities to create synergy between the different initiatives and remaining challenges. The ultimate goal was to acknowledge the possibility of joining forces but especially not to duplicate actions of other donors and organizations.

Figure 22 Consultation workshops and meetings with stakeholders

Development of the Country Project Concept

Period: November 2013 to July 2014

Following the notice of approval of the Concept Note by the Adaptation Fund in November 2013 during the Conference of the Parties number 19 (COP 19), the next step was the preparation of the Fulll Country Programme Document, which involved the definition of the implementation strategy based on the issues raised in the Concept Note. It was decided jointly between the designated authority, the Climate Change Direction, and Fundecooperación, to make an Open Call for Proposals on Climate Change Adaptation in order to establish the implementation strategy and designate the executing organizations. This open approach has only been applied in Costa Rica and involved the approval vouch for the proposed mechanism from the Adaptation Fund.

- ***Open Call for Proposals on Climate Change Adaptation***

Starting on February 21st, the public launch of the Call for Proposals was broadcast in national TV news and radio, and published in the mainstream press, stakeholder websites and social media. Furthermore, Fundecooperacion held four massive information sessions with over 300 participants from the private and / or civil society organizations, national government and public organizations (Figure 2). The period for the submission of proposals ended on April 2nd.

Figure 23 Public announcement

Figure 24 Public launch of the Call for Proposals through informative sessions and media

- ***Evaluation of proposals submitted***

Based on the previously established selection criteria, a process evaluation of the proposals was performed between April and July 2014. The evaluation and selection of projects was conducted by Fundecooperación with technical support from various experts in each sector.

Annex 3: List of stakeholders consulted throughout the process

Table 23 Stakeholders involved in the consultation process

Water Sector	
Yolanda Martínez	***Instituto Costarricense de Acueductos y Alcantarillados - SubGerencia Sistemas Comunales***
Carlos Vargas	***Instituto Costarricense de Acueductos y Alcantarillados***
Edgar Chacón Pérez	***ASADA - El Tanque de San Carlos***
Lizeth Arias	***ASADA San Juan***
José Montes	***ASADA San Juan***
Rolando Marín	***ASADA Grecia – COFORSA - UNAGUAS***
Marta Pérez	***UICN***
Juan Carlos Mora	***SENARA - Planificación***
Fred Denton	***Fundación CRUSA***
Ana María Camacho	***Fundación CRUSA***
Manuel Blázquez	***Agencia de Cooperación Española***
Elena Orozco	***Agencia de Cooperación Española***
Jorge Polimeni	***Bandera Ecológica***
Magda Campos	***Instituto Meteorológico Nacional - Dpto. Climatología e Investigaciones Aplicadas***
Ana Gabriela Pérez	***Universidad de Costa Rica - CICA***
Yamileth Astorga	***Universidad de Costa Rica - Programa de Gestión Ambiental Integral***
Isabel Torrealba	***Universidad de Costa Rica - Programa de Gestión Ambiental Integral***
Alberto Quirós	***MINAE – Dirección de Aguas***
Monse Gómez	***MINAE – Viceministerio de Aguas y Mares***
Julián Solano	***MINAE – Viceministerio de Aguas y Mares***
Fiorella Salas	***Universidad Nacional - CIMPE***
Freddy Bolaños	***Colegio Federado de Ingenieros y Arquitectos***
Coastal Sector	
Francisco Quesada	***Costas Verdes***
Sergio Santana	***Costas Verdes***
Daniel Ubrida	***Costas Verdes***
Ana Guzmán	***Conservación Internacional***
Marcos Quesada	***Conservación Internacional***
José Courrau	***UICN***
Alberto Salas	***UICN***
Jorge Jiménez	***Fundación Marviva***
Alejandra Pacheco	***Fundación Marviva***
Viviana Gutiérrez	***Fundación Marviva***
Shirley Malespín	***Fundación Marviva***
Carlos Murillo	***Fundación Marviva***

Luis Diego Marín	***Preserve Planet***
Nydia Rodriguez	***Terra-Nostra***
Vivienne Solís	***COOPESOLIDAR***
Marvin Fonseca	***COOPESOLIDAR***
Daniel Matul Romero	***Proyecto Regional Centroamérica – FUMPADEM***
Mario Fernández	***Universidad de Costa Rica-Programa PREVENTEC***
Daisy Arroyo Mora	***Universidad de Costa Rica – Escuela de Biología***
Fred Denton	***Fundación CRUSA***
José Courrau	***UICN***
Jenny Ash	***SINAC-Costas***
Michael Schloenvoigt	***GIZ - BIOMARCC***
Rodrigo Villate	***GIZ - BIOMARCC***
Guillermo González	***Universidad Técnica Nacional***
Ricardo Segura	***Universidad Técnica Nacional -Sede Pacífico***
Fernando Villalobos	***Universidad Técnica Nacional -Sede Pacífico***
Juan Diego Jaen	***Ciencias Políticas***
Adriana Benjarano	***MINAE - Viceministerio de Agua y Mares***
Gabriela Hernández	***MINAE - Viceministerio de Agua y Mares***
Ángel Herrera Ulloa	***Parque Marino Pacífico***
Cristina Alvarado	***Universidad de Costa Rica-Vice Rectoría de Investigación***
María Fernández Arce	***Universidad de Costa Rica***
Bernardo Aguilar	***Fundación Neotrópica***
Walter Carvajal	***DECORMAC***
Agricultural Sector	
Roberto Ramírez	***Ministerio de Agricultura y Ganadería/INTA***
Laura Ramírez	***Ministerio de Agricultura y Ganadería /INTA***
Sergio Abarca	***Ministerio de Agricultura y Ganadería /INTA***
Roberto Azofeifa	***Ministerio de Agricultura y Ganadería***
Tania López Lee	***Ministerio de Agricultura y Ganadería***
Víctor Vargas	***Ministerio de Agricultura y Ganadería***
Mauricio Chacon	***Ministerio de Agricultura y Ganadería***
Roy Rojas	***Ministerio de Agricultura y Ganadería***
Johnny Ureña	***Ministerio de Agricultura y Ganadería***
Martin Madrigal	***Ministerio de Agricultura y Ganadería***
Mario Chávez	***Ministerio de Agricultura y Ganadería***
Yuner Alvarado	***Ministerio de Agricultura y Ganadería***
Fernando Gonzáles	***Ministerio de Agricultura y Ganadería***
Marcos Rojas	***Ministerio de Agricultura y Ganadería***
Oscar Solano	***Ministerio de Agricultura y Ganadería***
Beatriz Molina	***Ministerio de Agricultura y Ganadería***
Ileana Alvarado	***Ministerio de Agricultura y Ganadería***
Annie López	***Ministerio de Agricultura y Ganadería***

Dagoberto Elizondo	***Ministerio de Agricultura y Ganadería***
Romerio Arias	***Ministerio de Agricultura y Ganadería***
Juan Moya	***Ministerio de Agricultura y Ganadería***
Pedro Alfaro	***Ministerio de Agricultura y Ganadería***
Luis Molina	***Ministerio de Agricultura y Ganadería***
Geovanna Valverde	***Ministerio de Agricultura y Ganadería***
William Murillo	***Ministerio de Agricultura y Ganadería***
Juan Carlos Mora	***Ministerio de Agricultura y Ganadería***
Rafael Mena	***Ministerio de Agricultura y Ganadería***
Alberto Chinchilla	***ACICAFOC***
Roel Picado	***ACICAFOC***
Ruth Martínez	***ACICAFOC***
Carlos Blanco	***ACICAFOC***
Francisco Fonseca	***CEDECO***
Jonathan Castro	***IICA***
Marjorie Hartley	***Universidad Nacional - CINPE***
Fiorella Salas Pinel	***Universidad Nacional - CINPE***
Marianela Cortez	***Universidad de Costa Rica***
Ana Gabriela Pérez	***Universidad de Costa Rica***
Carlos Méndez	***Universidad de Costa Rica***
Guillermo González Cabezas	***Universidad Técnica Nacional***
Ricardo Segura Amador	***Universidad Técnica Nacional***
Fernando Villalobos Chacón	***Universidad Técnica Nacional***
Reinhold Muschler	***CATIE***

Climate Change and Risk Management

William Álpizar	***MINAE – Dirección de Cambio Climático***
Iván Delgado	***MINAE – Dirección de Cambio Climático***
Cynthia Córdoba	***MINAE – Dirección de Cambio Climático***
José Lino Chavez	***MINAE - Viceministerio de Agua y Mares***
Jacklyn Rivera Wong	***MINAE - Viceministerio de Agua y Mares***
Rubén Muñoz	***MINAE***
Julia Clerici	***SINAC***
Pascal O. Girot Pignot	***CARE-PECCN***
Carlos Picado	***Comisión Nacional de Emergencias***
Álvaro Montero	***Comisión Nacional de Emergencias***
Lenin Corrales Chávez	***Comisión Nacional de Emergencias***
Rodrigo Gómez Lobo	***Instituto Nacional de Biodiversidad INbio***
Andreas Nieters	***GIZ***
Sergio Musmanni	***GIZ***
Irene Cañas	***GIZ***
Mauricio Castro	***ICICOR***
Manfred Cooper	***Asociación para el Desarrollo Empresarial***

Milton Madriz	***Asociación para el Desarrollo Empresarial***
Anabelle Calderón	***Asociación para el Desarrollo Empresarial***
Jefferson Arguedas	***Asociación para el Desarrollo Empresarial***
Manuel Blandes	***Asociación para el Desarrollo Empresarial***
Enrique Carazo	***FUNDECOR***
Ana Ureña	***FUNDECOR***
Pedro Zúñiga	***FUNDECOR***
Yendry Fernández	***Universidad de Costa Rica***
Carlos Campos	***Universidad Estatal a Distancia***
Alicia Mata	***Universidad Estatal a Distancia***
María de Mare	***Universidad Estatal a Distancia***
Marco Córdoba	***Universidad Estatal a Distancia***
Mathieu Dumas	***Consultor***
Juan Carlos Quiñones	***Consultor***
Rodrigo Ganes	

Annex 4. Minutes
3.1 Workshops

3.1.1 Agricultural Sector

- ✓ *January 17th, 2013*

Fondo de Adaptación – Taller Agricultura – Fundecooperación
Memoria Taller

1) ***Bienvenida e introducción del taller***
2) ***Introducción de la participación de Fundecooperación***
3) ***Presentación de los participantes***
4) ***Introducción del Fondo de Adaptación***

Características particulares:
-Acceso directo a fondos
-Análisis de vulnerabilidad

Costa Rica, expuesta ante el cambio climático, por lo que se fomenta para que acceda a los fondos. Para ello se desarrolló una estrategia del cambio climático donde la mitigación y la adaptación van de la mano. Tenemos que afrontar las causas (Mit) y consecuencias (Adap), donde podamos desarrollar proyectos que sean medibles, verificables y reportables. Es importante contar con proyectos que demuestren impactos, desarrollo de capacidades y gestión de tecnologías, sensibilización.

Prioridades del País:
- Se definieron sectores prioritarios, del Fondo Adaptación: Recurso Hídrico, Agropecuario (seguridad alimentaria) y Recurso Marino y costas.

¿Qué es adaptación?
- Ajustes o respuestas a seres humanos y partes naturales.
- Estimula aspectos climáticos reales y sus efectos.
- Aprovechamiento de oportunidades

¿Qué es vulnerabilidad?
- Incidir en políticas públicas
- ¿Dónde hay mayor sensibilidad o mayor impacto?
- Alto impacto y capacidad adaptativa

Programas y proyectos:
- No cubren estudios ni consultorías
- Se debe contar con justificaciones de vulnerabilidad y el incremento de la capacidad adaptativa
- Ser tangibles (MRV)
- Siempre debe incluir la consulta a las comunidades (proyectos participativos, consultivos y consensuados)
- Impulsar soluciones

Información → www.cambioclimaticocr.com

Modelo y acceso al fondo:
- Con PNUMA se realizó una valoración de posible entes implementadores-
- Se cuenta con ente implementador y un ente ejecutor:

a. El ente implementadores les corresponde a parte administrativa, gestión de proyectos, supervisión financiera y presentación de informes.
b. El ente ejecutor se responsabiliza por la implementación y cuantificación.

- Los fondos no están disponibles aún, se debe desarrollarse una propuesta innovadorea y atractiva, que de aceptarse se establecerá los criterios de participación y acción.
- Los proyectos no son de estudios o investigación, no es mitigación, es de proyectos concretos de adaptación al CC donde se aprecien resultados.
- Como parte del proceso, se realiza un mapeo de actores y proyectos. Por lo que se desea realizar un conservatorio de acciones.

5) Iniciativas y Enfoques

- Laura Ramírez, INTA: Medir impactos en agricultura depende de los ciclos agrícolas con los cuales se trabajan para así establecer los plazos de los proyectos. Asimismo debe considerarse los plazos para trabajar con las comunidades. RETOS: Se necesita realizar la zonificación agroecológica del país, el INTA se está proponiendo ese reto, es algo que hace falta.
- Francisco, CEDECO: ¿Hay objetivos y criterios prioritarios? Hay a nivel de vulnerabilidad nada más. Elena, AECID: A nivel de plan de acción: seguridad alimentaria y granos básicos. Francisco: En café ya se cuenta con elementos de estudios de priorización.
- Laura Ramírez, INTA: Ley 7779 sobre manejo de conservación de suelos, un elemento incluye a las comunidades, donde se establecer la conformación de comités a nivel de las cuentas hidrográficas para tener un plan de conservación a nivel de suelos y de aguas. Para así lograr una estructuración de las acciones de adaptación.
- Roberto, MAG Dpto. Producción Sostenible: En la propuesta el concepto económico debe estar vigente, considerar sistemas que cuenten con menor dependencia de los insumos externos. A nivel de MAG se tiene una priorización de cuáles son las más vulnerables (rutas definidas).
- Carlos Mendez, UCR: Definir claramente el concepto de seguridad alimentaria pues en CR se incluye un factor además de cantidad de alimentos, también es calidad nutricional. RETOS: Como parte de los retos es determinar nuevos procesamientos de los alimentos para maximizar el aprovechamiento de los mismos. Buscar también nuevas tecnologías y técnicas que den valores agregados y accesibles a los más vulnerables.
- Fiorella, CINPE-UNA: Cuáles son las escalas? No hay nada establecido, sólo que existan intervenciones locales y que pueden lograr impactos específicos.
- Sergio Abarca, INTA/MAG: RETOS> establecer cuantificadamente cuáles son las causas para trabajar en ese tema, de manera que ante la variación del clima y la cuantificación de sus afectaciones, se puede justificar la necesidad de los fondos! Tener esas cuantificaciones de background que nos soporte la propuesta de cambio que nos ponemos.
- Reinhold, CATIE: RETOS >> Diversificar los sistemas productivos de manera q alcancen mayor resistencia y diversidad. Pero antes de los sistemas productivos, también es un factor de diversificar la mentalidad de los consumidores. Es importante considerar el rescate de semilla!! Producción más limpia, como reducir el consumo de insumos externos por materiales locales y de manera más efectiva.
- Laura Ramírez, INTA: RETOS>> Rescate de la semilla local de manera que le quede a la comunidad. FAO está realizando una iniciativa de rescate a nivel de maíz y frijol. También debemos considerar la transformación de productos, de manera que se reduzca la huella de carbono. CONSULTA >> Cómo diferenciamos la validación, estudio de caso e investigación? De existir estudios previos debe considerarse validar tecnologías, pero debemos validar!! INVESTIGAR COMO CONSIDERAN ESTOS CASOS!!!
- Roberto, MAG: Establecer cuáles son las zonas muy vulnerables ya está, el nivel de la participación comunitaria es el reto! RETO: Generar encadenamientos, poner a las comunidades a trabajar en conjunto.
- Carlos Mendez, UCR: PROPUESTA> Investigación participativa! Es una opción en la cual ya se tiene experiencia. Además hay un modelo de expansión que se usa a nivel Centroamericano “escuelas de campo”, que se convierten en centros de capacitación dirigidos por los mismos productores.
- UCR: Hay iniciativas que desean trabajar:
  - Sistemas de policultivos, huerto tropical, agricultura familiar o periurbana, manejo de residuos (considerar el aspecto de contaminación!)
  - Manejo y conservación de los suelos
  - Manejo del agua, ver factores como los niveles de contaminación
  - Zonificación agrícola, qué sucede cuando hay cambios climáticos, genéticos, plagas, etc.
  - Manejo de plagas y enfermedades (uso de microorganismos, inocuidad de alimentos, etc.)

- Manejo de información para la toma de decisiones!!!!!!

- Elena, AECID: Oportunidades > Fortalecer los sistemas de PSA y las alianzas público-privadas, más enfocado a los más vulnerables (pensar en la sostenibilidad y el alto impacto). INICIATIVAS: Ejemplos de proyectos locales de alto impacto: PROMES. RETO>> Unificar los esfuerzos de la academia con el sector privado, no sólo de trabajo investigativo sino también financiero (fondos). RETO>> Coordinación interinstitucional.
- Fiorella, CINPE-UNA: RETO> Métrica, antes DURANTE y después! Ahora si hay información entre las diferentes instituciones, debería existir un sistema que permita compartir dicha información y también, para estandarizar.
- Laura Ramírez, INTA: Retoma el aspecto de investigación, pensar por ejemplo que los impactos locales sumen y sean país, pero si no hay instrumentos que permitan tomar decisiones para acciones concretas de adaptación. Se deben resolver cosas macro país para incidir micro.
- Francisco, CEDECO >> Incluir mitigación sería un plus para lo de adaptación.

RECOMENDACIONES:

- Marco de fondo de adaptación: 3 a 4 años con un máx $10mill para los 3 sectores. Por tanto lo importante es crear nuevas iniciativas que puedan ser sostenibles y replicables.
- Definir cuáles son los criterios de priorización y considerar proyectos bilaterales (transfronterizos).
- Lograr a través de los proyectos cambios específicos y con impactos cuantificables.
- Investigar si se pueden considerar proyectos de validación de innovaciones agrícolas.
- Investigar la estrategia CADER
- Pensar siempre en las herramientas para MRV, pensar que los viables son aquellos que tienen una cuantificación previa.

Taller de Consulta Fondo de Adaptación

Sector Agropecuario

- Como parte de las medidas que ha desarrollado en el sector pecuario en materia de pastos y forrajes ante el cambio en las condiciones climáticas, la Cámara Nacional de Productores de Leche (CNPL), con el apoyo del MAG y el Instituto Nacional de Investigación y Transferencia de Tecnología Agropecuaria (INTA), conformaron una Red Nacional de Pastos y Forrajes, cuya meta es identificar los pastos, forrajes, tubérculos, rastrojos y desechos agroindustriales, entre otros, que puedan utilizarse en la alimentación eficiente y rentable de vacunos. Con estas medidas en la alimentación del ganado, se ha logrado contrarrestar los efectos adversos por el retraso en la llegada de las lluvias en la zona Norte del país. Ej. A pesar de la escasez de agua, debido a 45 días de sequía adicionales, la preparación de los productores logró evitar la muerte del ganado en San Carlos.

- El fenómeno oceánico-atmosférico ENOS ha provocado cambios como el incremento de la temperatura mínima, humedad relativa, nubosidad y precipitación en en las zonas de vida de bosque tropical húmedo pre-montano, así como una reducción de la radiación solar. Las variaciones de la temperatura y la precipitación debidas al Fenómeno ENOS, han provocado una disminución en la producción de Rambután en la Zona Sur de Costa Rica en el periodo 2004-2010, ya que ha afectado la época de polinización, floración y fructificación. Asimismo, se ha registrado otros casos, como la afectación de la floración de repollo en Alvarado de Cartago y el caso de de productores de queso (Fenómeno ENOS La Niña Periodo: 1999 – 2011) en Santa Cruz de Turrialba.

- La enfermedad de la “flecha seca” que afecta a la palma aceitera se ha extendido principalmente por las plantaciones de palma del Pacífico Sur del país. La “flecha seca” causa que la planta se torne amarillenta, por lo cual pierde fuerza y deja de producir el fruto utilizado para la extracción del aceite. El diagnóstico inicial se ha dirigido hacia eventuales problemas de drenaje de las fincas, por lo que instituciones como el Servicio Nacional de Aguas Subterráneas, Riego y Avenamiento

(SENARA) y el IICA han planificado proyectos de drenaje. Ej. el IICA está desarrollando un proyecto de mejoramiento de tierras agrícolas con drenaje en la zona de Matina.

- La modificación de las temperaturas y la humedad han alterado las interacciones biológicas en los ecosistemas tropicales, generando una mayor presión de plagas sobre los cultivos y comunidades naturales. En algunos casos produce un mayor stress fisiológico aumentando la vulnerabilidad de las plantas de cultivo ante las plagas. Por otra parte, incrementa la difusión de plagas y la severidad de sus ataques, principalmente hongos. Ej. roya en café. En Costa Rica, la solución que se ha implementado, es el incremento en el uso de plaguicidas, a tal punto que ha generado alertas en EUA por el alto índice de aplicación de los mismos. Ej. Aplicación de fungicidas en plantaciones de banano.

Medidas identificadas
COMPONENTE 1
1.
Aumentar la cobertura vegetal para aumentar la cobertura vegetal para aumentar la infiltración de agua en el perfil del suelo.
Técnicas innovadoras en conservación del suelo adaptadas a fuertes aguaceros.
Aumento cobertura vegetal (biomasa forrajera)
Prácticas agroconservacionistas
Incentivos basados en OCI (opciones climáticamente inteligentes)
Fomentar y aplicar la legislación vigente aplicable
Protección nacientes, recuperación de bosques, bosquetes
Planificacion uso del suelo

2.
Técnicas de alimentación para épocas críticas (suplementos y forrajes)
Promover los cultivos y las exportaciones protegidas: invernaderos, estabulados etc
Coberturas para animales que sirvan tanto para la época seca como para la lluviosa.
Establecimiento de sistemas silvopastoriles G semiestabulado bancos proteínas forrajes
Fortalecimiento organizacional por microcuencas (comités área)
Descripcion de biodiversidad por comunidad

3.
Transformación de la actividad o manejo de la finca
Infraestructura para uso de biomasa, compost, etc.
Cierre ciclo de energías
Prácticas que promuevan agrosistemas
Agricultura de precisión
Fomento de la producción orgánica
Variedades adaptables a diferentes cambios en temperaturas
Diversificación en cultivos sostenibles con técnicas amigables
Fincas integrales didácticas
Programa BDE. Adaptación
Uso de productos biológicos que reduzcan el uso y abuso de agrotóxicos
Sistemas de producción bajo ambientes protegidos
Mecanización mediante labraje minimo

4.
Aprovechamiento de agua (cosecha de agua de lluvia), reservorios de agua, uso de arietes y horias
Infraestructuras que mejores la infiltración de aguas en zonas de recarga (mayor disponibilidad de agua para consumo, menos escorrentía)

5.
Eco etiquetado
Buenas prácticas agrícolas
Programa seguros agrícolas de uso universal y pólizas subsidiadas

6.

Implementación de estaciones meteorológicas para alerta temprana y estudios a largo plazo (planificación)
Mejorar los sistemas de predicción climática
Informativo climático permanente.
Medición de datos meteorológicos a nivel de finca
Desarrrollo de sistemas de información y monitoreo de variables con alertas tempranas
Uso de TIC
Uso de SIG

7.
Sistematización de casos exitosos
Capacitación a productores
Intercambio de experiencias
Campañas de sensibilización al consumidor orientadas a aumentar la valoración de la agricultura.

Componente 3

3.1 Preparación comunitaria mejorada a través del desarrollo y consolidación de sistemas y protocolos de alerta temprana y estrategias de recuperación para agricultura, recursos hídricos y zonas costeras en cambio climático.
3.2 Comunidades, productores, instituciones y grupos de interés informadas en los riesgos asociados al cambio climático
3.3 Capacidades institucionales para la observación sistemática del cambio climático fortalecidas, con el fin de prevenir e informar sobre la evolución de fenómenos atmosféricos.

1. Información

- Realizar encuesta para medir conocimiento sobre CC
- Desarrollar planes de reducción de riesgos comunales agropecuarios sobre CC
- Realizar análisis de condiciones climáticas en cada zona del país donde existan estaciones meteorológicas
- Identificación de potencialidades por cambios en el clima –cultivos que antes no se adaptaban-
- Sistematización de información sobre variabilidad climática por territorios de interés /prioridad agropecuaria

2. Planificación

- Planificación sectorial considerando potencial afectación
- Generación de sistemas meteorológicos de alerta temprana
- Realizar simulacros de validación de planes de RR
- Realización de escenarios nuevos de zonificación agropecuaria
- Desarrollar procesos de capacitación para conocimiento del tema

3. Capacitación

- Que las capacitaciones contengan datos con ejemplos de la zona y tiempo para que exista interacción entre los participantes
- Llevar este proceso a ser parte de la educación formal
- Que el contenido de capacitación sea dirigido a actividades preventivas basadas en estudios de vulnerabilidad
- Capacitar productores, asociaciones, instituciones, antes de!
- Que las organizaciones comunales se involucren en la toma de decisiones y motivación comunal
- FORMACIÓN
- Desarrollo de redes de comunicación relacionadas con CC/Adaptación
- Mapeo de actores, movilización de información y articulación de partes afectadas/interesadas/obligadas
- Intercambio de experiencias positivas entre productores

4. Divulgación

- Realizar difusiones radiales sobre la problemática y con datos de cada zona para sensibilizar a la población

- Elaboración de materiales impresos, audiovisuales, pago de servicios para difusión masiva
- Contar a nivel regional y local con medios para divulgar las experiencias exitosas
- Crear herramientas tecnológicas (página web)
- Identificación de opciones tecnológica por introducir con el cambio de las condiciones climáticas
- Usos de sistemas de información para divulgar los efectos de cambio climático videos-videoconferencias
- Informar de la conveniencia del desarrollo de una producción y consumo agroecológicos
- Fortalecimiento del consumo de productos locales.

3.1.2 Water Sector

Fondo de Adaptación – Taller Recurso Hídrico – Fundecooperación
Memoria Taller

6) Bienvenida e introducción del taller
7) Introducción de la participación de Fundecooperación
8) Presentación de los participantes

Rolando Marín, Acueducto Rural Grecia (Presi UNAGUAS y COFORSA)
- Gestión comunitaria del agua
- Creación de acueductos comunales
- Ser participante del Fondo

Edgar Chacón, Acueducto Tanque San Carlos
- Participación de los procesos de COFORSA
- Miembro de COPELESCA – Cooperativa de electrificación rural
- Miembro del Consejo Municipal de San Carlos

Yolanda Martínez, Subgerencia de Sistemas comunales del AyA
- Delegación de aguas para la administración de ASADAS
- Asesoras entes que operan sistemas comunales
- Enfoque de un esfuerzo país
- Evaluación de ASADAS en la zona costera (4km – 135 ASADAS del Pacífico)

Magda Campos, IMN Dpto. Climatología e Investigaciones aplicadas
- "Sin lluvia, no hay agua" – Proyectos rec. hídrico con financiamiento internacional
- Sector Agrícola – Colaboración de la DCC en talleres centroamericanos sobre comunidades participativas y vulnerabilidad, conceptos y acciones.
- Biodiversidad – 3ra Comunicación nacional coordinada por el SINAC (incluye energía, desechos sólidos, V inventario, no incluye rec. Hídrico)

Marta Perez, UICN – Unidad de gestión de agua
- Gestión de cuencas
- Adaptación al cambio climático
- Proyectos interregionales – Gobernanza del agua y adaptación cambio climático (México, Salvador, Panamá, Costa Rica) – Sistema normativo e instituciones.

Ana Gabriela Perez, UCR
- Centro de investigaciones, Laboratorio para el análisis del aire (Inventarios de gases de efectos invernadores en el sector agrícola + equipamiento para analizar los ciclos). En colaboración del Dr. Germán B. (Patrones de lluvia y sistemas climatológicos)
- Laboratorio especializado para la gestión en calidad del agua

- Coordinadora UCR – Red de competitividad y producción más limpia (Coordinación de un proyecto de energía y clima: gestión de agua y eficiencia energética en proyectos en Osa). Actúan como facilitar la gestión. Esfuerzos de varias escuelas académicas.
- Miembro de la comisión de la Gestión de la Cuenca del Río Tempisque.

Isa Torrialba, Yamileth Astorga – Programa de Gestión Ambiental Integral

- Gestión Ambiental y Biodiversidad
- Gestión de Recurso Hídrico con proyectos a nivel nacional y la Universidad
- Sede Pacífico UCR, Proyectos de historia ambiental (Puntarenas y Nicoya)
- Especialista de Gestión Ambiental y Sustentabilidad

Elena Orozco, Cooperación Española
- Apoyo al MINAE en la implementación Estrategia de cambio climático y plan de acción
- Trabajos con el AYA en aspectos de recurso hídrico
- Proyectos en América Latina, asentamientos campesino con INDER (IDA)
- Proyectos para construcción acueductos en Santa Rosa Pocosol, Upala, Guatuso, Los Chiles. Más de un millón de dólares.
- 54 ASADAS de la zona norte

Juan Carlos, Director de Planificación de SENARA
- Encargado de la política pública en materia de riesgo y drenajes
- Generación de una política en cambio climático
- Protección contra inundaciones en zonas productivas

Alberto Quirós, Asesor de la Gestión del agua
Lizeth Arias y José Montes, ASADA Turrialba
Jorge Polimeni, Fundación Bandera Ecológica y Presidente del Comité de Miembros (UICN)
Fundación CRUSA

9) Introducción del Fondo de Adaptación

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10) Iniciativas y Enfoques

- UCR + PROGRAI (Programa de Gestión Ambiental Integral) + ProDUS: Foro institucional para la adaptación al cambio climático, programa de prevención de desastres y vulnerabilidad. RETOS: "Protección del agua": Protección de los mantos acuíferos en los cantones de alta vulnerabilidad. Las aguas superficiales, riesgos de contaminación, cómo aminorar el ingreso de aguas contaminadas a los acuíferos de aguas superficiales. Prevención de la inclusión salina para no contaminar los acuíferos, hay estudios de la UCR al respecto. Gestión integral de cuencas: Áreas de retiro de sectores productivos, donde se protege de contaminación del agua. Infraestructura: dado las concentraciones de episodios de lluvia, en adaptación es importante maximizar el aprovechamiento de dichas concentraciones y a la vez, aminoramos los impactos de inundación (ej: solución – humedales).

- AYA: Incluir los entes que están operando los sistemas, no hacer esfuerzos aislados sino unificar y entrelazar para generar impactos. Se debe incluir grupos aislados por limitaciones económicas (alta vulnerabilidad) que requieren representación. Fomentar la participación de organizaciones comunales que utilicen los recursos de manera racional y eficiente. AYA dispone de datos interesantes de las zonas indígenas y de alta vulnerabilidad. Se debe incluir a la Unidad de Unidad CC del AYA. La gestión de riesgo es un tema que requiere de fortalecimiento (principalmente ASADAS). Buscar alianzas!! 30% a cargo de ASADAS, cómo fortalecerlos!! Cómo apoyarles financieramente.

- AYA: Carlos Vargas, Estudios de estaciones meteorológicas.

- MINAE, Dirección de aguas: Estrategia Nacional de Rec. Hídrico.

- IMN: Las medidas de adaptación también incluye la institucionalización. Pues ya se realizaron esfuerzos de análisis para determinar medidas de adaptación y vulnerabilidad. INICIATIVA: Hay un informe principal que se llama "Fortalecimiento de capacidades para el fortalecimiento del índice de vulnerabilidad" financiado por PNUD. Se han realizado 3 análisis de vulnerabilidad: recurso hídrico, salud y biodiversidad. Falta en energía. RETO: Determinar la vulnerabilidad. En CR no hay un registro de todos lo acuíferos, se debe hacer investigación en este aspecto.

- UICN: Estudio de gobernanza del agua para la adaptación y planes de adaptación para el manejo del recurso hídrico. RECOMENDACIÓN: Prioridades!! Detallar más las del Plan Nacional de Adaptación, para fomentarlas mediante la implementación. Afinar las ideas!! RETOS: Comunidades + vulnerables: comunidades costeras y comunidades fronterizas, deberían quedar cubiertas. INICIATIVA: MIDEPLAN y UICN han trabajado con le comisión nacional de Sixaola en un reglamento que trabaja en proyectos de adaptación.

- AECID: Adaptación es la gestión integrada del recurso hídrico, consolidar un sistema alerta y de prevención de riesgo. Planes Nacionales son necesarios. Hay que delimitar más los enfoques, buscar las secciones que son más vulnerables (por lugar

y personas). Enfocarse en los que más necesitan para no crear expectativas. Reto: enlazar los esfuerzos! Informar a todos los entes que trabajan en ello!

- INDER (IDA):
- Comisión de Emergencias: Vulnerabilidad + Gestión de riesgo.
- COFORSA y Consejo consultivo nacional de RS (comité de ambiente): Como iniciativas tienen también el fortalecimiento de capacidades de entidades comunales.
- Dirección de aguas:
- SENARA: Gestión Integral de RH.
- Fundación CRUSA: Fomenta proyectos de gestión del recurso hídrico. Propone trabajar de manera conjunta con fondos contrapartidas: $1mill/año x 3años.
- Mesa Nacional Indígena: Ya tiene definido una dirección de CC para su accionar al respecto.
- Fundación Bandera Ecológica: Incluir al sector financiero que tienen programas verdes dirigidos al recurso hídrico y al SINAC. RETO: Tema de comunicación: informar a los costarricenses la definición de los conceptos de adaptación. Dar a comprender las acciones y resultados al respecto.
- Global Water Partnership: Mauren Ballestero.
- Dirección de Aguas: La gestión del recurso hídrico debe diferenciarse como recurso y como servicio. AYA puede delegar en cualquier institución privada el manejo del recurso. Los acueductos comunales podrían fortalecerse a nivel de gobernabilidad (Ley 17914 en la Asamblea – protección del recurso hídrico, tarifas, gestión integral de recursos).
- UCR: RETOS: Visibilizarían de las comunidades y sus acciones (divulgación). Mantenimiento de agua sana.
- CRUSA: ¿Cómo se llega al público meta? ¿Cómo se garantiza que se llega a los más vulnerables?.

RECOMENDACIONES:

- Estudiar a fondo los Planes Nacionales: los objetivos de la propuesta puede ser fomentar sus objetivos ante los más vulnerables. Criterios de priorización! Analizar el capítulo en el Plan de Acción (Página 29).
- Analizar quiénes son los más vulnerables y entonces alinear todos los esfuerzos existentes hacia a ellos.
- Matriz interés/importancia: como metodología para definir las prioridades.
- PROPUESTA: Ya hay una identificación de zonas y temas, entonces concretar una propuesta conjunta con innovación en el uso del recurso hídrico, su aprovechamiento y abastecimiento.
- Programas que incluyan varios componentes y que todas las partes definan esos componentes.
- Planes de seguridad hídrica + Construcción de capacidades y tecnologías + Sensibilización.
- Marco conceptual: Es poner en evidencia que otros financiamientos e iniciativas podrían seguir en contrapartida a la propuesta. Además de mapas conceptuales en donde se pueda detallar los ejes de acción.

TALLER AGRICULTURA

- Mencionar la mecánica del concepto, programa y luego propuestas.
- Bajar expectativas.

3.1.3 Coastal Sector

Fondo de Adaptación – Taller Agricultura – Fundecooperación
Memoria Taller

1) ***Bienvenida e introducción del taller***
2) ***Introducción de la participación de Fundecooperación***
3) ***Presentación de los participantes***

- Cristina Alvarado, UCR Vice Rectoría de Investigación
- Ana Gloria, Conservación Internacional
- Marco Quesada, Conservación Internacional
- Mario Fernández, PREVENTEC- UCR
- Guillermo González, Universidad Técnica, Coordinador TCU – Ciudad de Puntarenas hacia la Carbono Neutralidad
- Juan Diego Jaen, Ciencias Políticas
- Alberto Salas, UICN
- Daniel Matul, Proyecto Regional Centroamérica – FUMPADEM
- Michael Schloenvoigt, GIZ - BIOMARC
- Alejandra Pacheco, MARVIVA
- Adriana Benjarano, MINAET - Viceministerio de Agua y Mares
- Marvin Fonseca, Coopesolidar
- Vivian Solis, Coopesolidar
- Ricardo Segura, Universidad Técnica Nacional – Sede Pacífico
- Fernando Villalobos, Universidad Técnica Nacional – Sede Pacífico
- Gabriela Hernández, MINAET - Viceministerio de Agua y Mares
- Angel Herrera Ulloa, Director del Parque Marino Pacífico
- Bernardo Aguilar, Fundación Neotrópica

4) ***Introducción del Fondo de Adaptación***

Características particulares:
- Acceso directo a fondos
- Análisis de vulnerabilidad

Costa Rica, expuesta ante el cambio climático, por lo que se fomenta para que acceda a los fondos. Para ello se desarrolló una estrategia del cambio climático donde la mitigación y la adaptación van de la mano. Tenemos que afrontar las causas (Mit) y consecuencias (Adap), donde podamos desarrollar proyectos que sean medibles, verificables y reportables. Es importante contar con proyectos que demuestren impactos, desarrollo de capacidades y gestión de tecnologías, sensibilización.

Prioridades del País:
- Se definieron sectores prioritarios, del Fondo Adaptación: Recurso Hídrico, Agropecuario (seguridad alimentaria) y Recurso Marino y costas.

¿Qué es adaptación?
- Ajustes o respuestas a seres humanos y partes naturales.
- Estimula aspectos climáticos reales y sus efectos.
- Aprovechamiento de oportunidades

¿Qué es vulnerabilidad?
- Incidir en políticas públicas
- ¿Dónde hay mayor sensibilidad o mayor impacto?
- Alto impacto y capacidad adaptativa

Programas y proyectos:
- No cubren estudios ni consultorías
- Se debe contar con justificaciones de vulnerabilidad y el incremento de la capacidad adaptativa
- Ser tangibles (MRV)
- Siempre debe incluir la consulta a las comunidades (proyectos participativos, consultivos y consensuados)
- Impulsar soluciones

Información → www.cambioclimaticocr.com

Modelo y acceso al fondo:
- Con PNUMA se realizó una valoración de posible entes implementadores-

o Se cuenta con ente implementador y un ente ejecutor:

a. El ente implementadores les corresponde a parte administrativa, gestión de proyectos, supervisión financiera y presentación de informes.

b. El ente ejecutor se responsabiliza por la implementación y cuantificación.

o Los fondos no están disponibles aún, se debe desarrollarse una propuesta innovadorea y atractiva, que de aceptarse se establecerá los criterios de participación y acción.

o Los proyectos no son de estudios o investigación, no es mitigación, es de proyectos concretos de adaptación al CC donde se aprecien resultados.

o Como parte del proceso, se realiza un mapeo de actores y proyectos. Por lo que se desea realizar un conservatorio de acciones.

5) ***Iniciativas y Enfoques***

- Coopesolidar: Construir sobre la base del camino hecho. Incluir la temática de género como eje transversal. DOC > Memoria de los talleres. INICIATIVA > Participar con las comunidades de pesca artesanal en iniciativas de pesca responsable con indicadores sociales de manera que ellos mismos se evalúen. Así también establecer una RED de áreas marinas de pesca responsables.
- GIZ-BIOMARC: Consulta sobre el proceso del Fondo. Será posible desarrollar una segunda fase del programa. Consultar con el Fondo.
- Cristina, UCR: Se debe incluir investigación de la parte académica hacia los enfoques prioritarios del fondo en el tema de costas, por ejemplo: CINGEFI.
- Bernardo, F. Neotropica: Modelos de conservación comunitaria son proyectos que han desarrollado UCR y UNA. Humedales.
- Guillermo, Universidad Técnica: Cómo incluir la participación de la Universidad? Se explica es que debe haber un estudio previo que justifique la acción en la zona.
- Daniel, FUMPADEM: RETO> Las líneas base en comunidades costeras son muy débiles/bajas, por lo que es algo que se debe fortalecer. Además, en función de esa línea de base se pueden encontrar buenas prácticas pero se requiere trabajar en la gobernanza (mantener en pie la comunidad), se requiere de normativa o estándares. RETO > Manejar las variables de biodiversidad, calidad de vida y cambio climático, cómo estos tres temas se enlazan. OPORTUNIDAD > Ya se sabe que hay que hacer algo, pero no el cómo?! Es importante intercambiar experiencias de otras zonas exitosas. RETO > Como desarrollar oportunidades productivas responsables, se requiere un plan de acción comunicativa en las comunidades para que aumenten su comprensión y compromiso hacia las acciones ante el CC. RETO > Buscar alternativas de mercado a las comunidades pesqueras. También el tema de generación de capacidades (de regulación/autorregulación, planificación y presupuestar, capacidades de ejecución – faltan capacitaciones prácticas). DOC > FUMPADEM tiene una guía para fortalecer estas 4 capacidades. Video de Cambio Climático en pág web o INBIO, youtube.
- Alberto, UICN: La mitigación es global y la adaptación es local. Cree que el programa puede ser orientador de las políticas. RETO> Adoptar experiencias locales para sistematizarlas y así replicarlas en otras comunidades. Además de hacerlo formar parte de las políticas públicas. DOCS > Informes y experiencias en centroamerica
- Viceministerio de Aguas: RETOS > Fomentar la pesca responsable para prever la sobreexplotación del recurso marino,
- Bernardo, F. Neotrópica: CIV.net Experiencias comunitarias en Brasil y Costa Rica. RETOS> Se conversa sobre políticas públicas y establecimiento de proyectos, pero eso es sobre la dependencia de existencia de fondos donantes, por lo que por experiencia es que debe plantearse proyectos que sean sostenibles, que el sector privado local pueda conformar parte y apoyarlas para así darles una ciclicidad. Como enlazar los esfuerzos de cooperación con el sector empresarial para adentrarlos en sus programas de RS para efectos de mantener constante la ejecución de los proyectos. RETO> También lograr encadenamiento entre las actividades de tierra y agua. Actividades costeras y actividades marinas. DOCS > recopilar las lecciones aprendidas de proyectos previos, IMN, Universidad Técnica Nacional.. de hecho pensar en los régimenes de la comunidad.
- Alejandra, Marviva: RETO> Comprometer el turismo en la sensibilización y accionar de la adaptación al cambio climático.
- Angel, Parque Marino: RETO> Modelaje local y contaminación. Pensar en los modelos de emergencia, cómo se hace el comportamiento de las reglas ante un riesgo de catástrofe. Pensar en los niveles de contaminación

- Mario Fdez, PREVENTEC: Es importante estudiar un poco más sobre los alcances y consecuencias del CC. Se debe enfocar hacia la vulnerabilidad.
- Marco, Conservación Internacional: CR tiene potencial para demostrar resultados e impactos que se pueden replicar. RETO> proponer proyectos capaces de ser replicados.
- Michael, GIZ-BIOMARC: CC es Gestión y prevención de riesgo, así como cuáles son los efectos a nivel global, regional y local. Es importante como parte de lograr un impacto, registrar resultados a nivel local para ver si las estimaciones globales son acertadas! Es importante que los resultados permitan concluir en una estrategia de cómo debemos adaptarnos. RETO> Enfocarnos en un concepto sólo local, sino regional y nacional. Pensar entonces en una región, cuáles son los sistemas marinos costeros más importantes, arrecifes o manglares, enfocarlo temáticamente. O bien, en Talamanca por ser una región de escasos recursos, vulnerables. Golfo de Nicoya, en nivel de vulnerabilidad, de altas necesidades y que además tiene potencial en adoptar áreas con potencial en trabajar también en recurso hídrico y agricultura, además de costas. Buscar trabajar en sistemas capaces de adaptarse. DOCS> Estudios de vulnerabilidad de las costas Pacífico y Caribe, cuáles son los distrito más vulnerables. Con CATIE y SINAC. También datos de vulnerabilidad de zonas protegidas y de la tierra. También un primer estudio de movilización de especies arboleas en función de los cambios de precipitación y temperatura (siempre en áreas protegidas). OBSV: Es importante considerar los niveles de vulnerabilidad, es diferente para costas, agricultura y rec. Hídrico… hay datos pero eso según la perspectiva. RETO> Incluir el pensamiento de cambio climático en las planificaciones locales (municipales y de desarrollo).
- Gabriela, Asesora de comunicación de MINAET: Se ven 4 ejes
  - Fortalecimiento de políticas públicas para la adaptación al CC
  - Información y comunicación
  - Participación comunitaria
  - Biodiversidad no debería separarse del tema de costas, como la contaminación afecta a todo nivel y siempre llega a las costas.
- Bernardo, F. Neotrópica: RETOS> Política verde y competitividad ambiental. Modelo de gestión que permita implementaciones efectivas y en las zonas vulnerables.
- Guillermo, Univ. Técnica: RETOS> Tema de la capacitación y comunicación a la comunidad para que comprendan el riesgo y las implicaciones que se tiene a nivel de CC. Las comisiones de emergencia, no están con todo el conocimiento y capacidad para enfrentar problemas. Temas puntuales: gestión de residuos, lugares de procesamiento, aprovechamiento de recursos, energías alternativas, etc.
- FUMPADEM, Daniel: Proponer plataformas integrales.

3.2 Evaluation Committee Minutes

COMITÉ DE EVALUACIÓN
CONVOCATORIA FONDO DE ADAPTACIÓN
Minuta de la reunión
Fecha: 07 de julio de 2014 **Hora:** 1:00 pm – 5:30pm
Lugar: Oficinas Fundecooperación

Asistentes:
Marianella Feoli Peña – *Fundecooperación*
Carolina Reyes Rivero – *Fundecooperación*
Karen Araya Varela – *Fundecooperación*
Tania López Lee – *Consultora*
Pascal Giró – *UCR*
Álvaro Montero – *Consultor*
William Alpízar – *DCC*

Agenda del día

1:00 – 1:30 pm Antecedentes y contexto Fondo de Adaptación
1:30 – 2:00 pm Marco Lógico
2:00 – 3:00 pm Análisis de propuestas: Componente Agro
3:00 – 4:00 pm Análisis de propuestas: Componente Hídrico y Costas
4:00 – 4:30 pm Consideraciones adicionales
4:30 – 5:00 pm Siguientes pasos

Objetivo de la reunión

Discutir y validar la propuesta país incluyendo las propuestas presentadas mediante la convocatoria, establecer indicadores, actores y áreas.
Analizar el mapeo general de propuestas preseleccionadas para confirmar cuáles tienen prioridad, incluir recomendaciones, unir proyectos, identificar vacíos y eliminar duplicidades.

Desarrollo de la reunión

Antecedentes y contexto

Figura 1. Proceso llevado hasta la fecha

- Se abrió una llamada de propuestas con un marco claro y definido, aprobado a nivel de concepto para que organizaciones nacionales presentaran sus proyectos. De dicha convocatoria se presentaron 100 propuestas que fueron debidamente evaluadas según diferentes instrumentos. Se han comunicado a las diferentes organizaciones los resultados de la evaluación de su propuesta (rechazada o preseleccionada) y que su aprobación dependerá de la resolución final del AF Board sobre la propuesta país (Las propuestas preseleccionadas no se envían al FA, lo que se envía es la propuesta país. Se incluye indicadores, posibles entes implementadores, beneficiarios. Se busca que la implementación del FA presente un mecanismo lo más transparente y participativo posible).
- Actualmente se está trabajando en el desarrollo de la estrategia de implementación de la propuesta país al AF Board, la cual debe entregarse antes del 4 de agosto para que sea considerada en la segunda sesión del Board a realizarse en octubre. La ejecución de los proyectos iniciaría en el 2015.
- Se mencionan actores importantes: IMN, INCOPESCA, SENARA, CNE, MINAE, MAG, AyA.

- Se evidencian los vacíos de propuestas en sectores prioritarios como la Zona Norte y Caribe, mientras se tiene varios proyectos en Osa y Guanacaste, lo cual se atribuye a la presencia o ausencia de organizaciones consolidadas en dichas zonas con capacidad de gestionar proyectos. Debido a este vacío en las zonas prioritarias, se discute la posibilidad de hacer una reserva del presupuesto del FA, el cual será designado a un ente ejecutor designado por la EIN posteriormente seleccionado.
- Las propuestas presentan presupuestos poco detallados, por lo que se plantea revisar y reformularlos según corresponda.
- Se tiene una mayor cantidad de propuestas que el presupuesto disponible ($9.150.000).

Análisis de las propuestas preseleccionadas del Componente 1 – Sector Agropecuario

➢ **006-14 Cámara de Ganaderos de Guanacaste**

- Ya existe una empresa especializada en extracción de agua con molinos de viento. Es una propuesta importante, se debe ampliar las opciones tecnológicas como reservorios, fertirriego -hacer sinergias con otras propuestas que proponen tecnologías de riego como CNPL (Tania).
- Sector muy organizado y concientizado en la problemática.
- A pesar de que la propuesta no incluye otras medidas silvopastoriles, como sombra, con abordadas por la NAMA Ganadería (Pascal, Tania).

➢ **007-14 ACICAFOC**

- No existe conflicto de intereses por formar parte de la JD, ya que la propuesta fue analizada por evaluadores externos y la JD no ha tomado parte en la evaluación.
- La Región Brunca y Pacífico Central son las que presentan mayores precipitaciones, la sequía no es justificada. Por lo tanto, la implementación de sistemas de recolección y cosecha de agua de lluvia no proceden, debido a que la sequía no es un escenario de vulnerabilidad.
- ¿Cómo se procede en ese caso? ¿Cómo se trabaja la propuesta si el escenario climático no es el correcto y por lo tanto las medidas consideradas no son válidas? (William)
- Se debe ajustar la propuesta a la vulnerabilidad por eventos hidrometeorologicos, no simplemente proponer medidas - tanque de agua perpetuo- (Pascal).
- Avance de la línea costera (William).
- Revisar el componente 2 de la propuesta.

➢ **014-018 MAG Huetar Norte (ASA Santa Rosa, Upala, Los Chiles y Guatuso)**

- Zona con una alta vulnerabilidad social y condiciones de pobreza (Tania).
- Fincas integrales: fincas modelos de donde se hace extensión por los mismos productores con un enfoque sostenible, enfocan recursos en desarrollar tecnologías que otros productores van a percibir (Tania).
- El MAG tiene un fondo de transferencias (incluye salarios, etc.)
- El proyecto sigue un enfoque BAU, cómo sugerirles una forma de medir si están adaptando o no, cuál criterio están utilizando para medirlo. Aterrizar las propuestas a nivel de indicadores (Pascal).

- Debido a que el FA Board ha dispuesto que los fondos no son para inversiones en estudios, sino que sean un disparador que genere un efecto revolutivo, se garantiza que en estos proyectos que el disparador es el correcto debido a que se consideró la creación de capacidades (componente 3) y el efecto multiplicador (William, Marianella.
- La zona presenta las condiciones para justificar la asignación de los fondos, y además presenta una alta contrapartida (Álvaro).

Conclusión: Agrupar las propuestas de ASA Los Chiles y Santa Rosa (Proyecto 1), así como ASA Upala y Guatuso (Proyecto 2), y asignar $350mil a cada grupo.

- **023-14 Coopepuriscal**

- La propuesta sigue un criterio más enfocado a mitigación que a adaptación (manejo de excretas).
- Debe contar con el apoyo de la CNPL (Tania).
- El tema de suelos es muy importante, degradación, laderas, deberían justificarlo (Tania).
- Los Daneses han lanzado su NAMA Facility (Adaptation, Mitigation, Readiness, - ADMIRE) con financiamientos hasta $250mil.

- **033-14 CNPL**

- Este tema amerita 3 propuestas? No son pequeños productores, cómo cambia la propuesta si no tiene el apellido adaptación? Insistir en el tema de multiplicación (Pascal).
- Fertirriego ya es una tecnología conocida, la CNPL están involucrados en el NAMA Ganadería que ya propone estas medidas. Como recomendaciones, se debería empezar por una región y no asignar $750mil (Tania)
- El proyecto presenta un interesante efecto demostrativo y escalamiento (William).
- Aclarar a quién se le entrega el financiamiento, debe estar dirigido a pequeños productores (Álvaro)

Conclusiones: Se tomarán como prioridad las Regiones Chorotega y Huetar Norte con un presupuesto entre $300-350mil, y se solicitará más contrapartida.

- **037-INTA**

- Importante porque involucra el tema de zonificación.
- No hay comentarios adicionales.

- **043-14 UNAFOR**

- Hojancha tiene un gran camino recorrido en el tema agroforestal (Tania).
- Es de las pocas propuestas que presenta medidas en recarga de acuíferos (Álvaro)
- Contrapartida ACT, CATIE.
- Debe definirse cuánto se invertirá a nivel de finca, aporte de beneficiarios (Pascal).
- Se debe considerar el establecimiento de polos regionales de capacitación, aprovechando a las instituciones

que cuentan con infraestructura en las diferentes regiones del país (Pascal).

- **044-14 UNA**

- William: Tienen actividad agropecuaria en ese cantón? Todo para implementar, nada administrativo
- Alvaro: oportunidad de mejora, involucrar a otros actores, importante que trabaja en sector urbano,bajarla a talves
- Tania: A nivel cantonal, es innovador. Como si no está MAG, Centro Agricola Cantonal, Escuela de Ciencias Agrarias UNA
- Pascal: 25mil por beneficiarios, fondos solicitados muy altos
- Marianella: bajarlo a $125mil

- **050-14 INDER**

- El INDER es la institución con mayor presupuesto en el sector agro, incluso en la zona se tiene el proyecto Binacional MAG-BID (Tania).
- No se demuestra participación del INA quienes cuentan con infraestructura y recursos en la zona, lo cual representaría una oportunidad de multiplicación. También se encuentra la finca integral didáctica El Oroco.
- Especificar cuánto presupuesto será destinado a los beneficiados, de manera que el enfoque no sea top down. ADITTICA y ADITIBRI (Pascal).

- **066-14 Centro Científico Tropical**

- No se evidencia un involucramiento de FONAFIFO (Tania).
- Presenta un alto porcentaje de gastos administrativos, incluso supera el máximo permitido.
- No está demostrado que la forestería análoga tenga beneficios a nivel de adaptación, sólo a nivel de conectividad, se puede decir que presenta cobeneficios en adaptación. Asimismo no es claro el costo beneficio de la propuesta (Pascal).
- La propuesta abarca otro tema diferente a adaptación en el sector agropecuario y presenta un presupuesto muy elevado (William).

Conclusiones: Propuesta no prioritaria (Tal vez).

Componente 2 – Zonas Costeras

- **047-14 Asociación Corredor Biológico Talamanca Caribe**

- La zona presenta muchos cooperantes, mucha experiencia en fincas integrales, y no se evidencia claramente la adaptación. También está la UICN con proyectos en Talamanca. Se siguen financiando proyectos que ya tienen financiamiento. Cómo escalar a mas allá de pilotos (llevan 25 años haciendo pilotos) tienen capacidad, buena red de promotores, zona en la que se puede escalar.

Conclusiones: Se debe ajustar la propuesta a un enfoque de gestión integral de la costa (Tal vez).

- **062-14 Coopesolidar**

- Para que la acción empiece a implementar, ya tiene que estar diseñado el plan de adaptación.
- Se debe hablar de Sistema de Vigilancia Multiamenaza.
- Coopesolidar es el creador del concepto AMPR, se están considerando amenazas antrópicas, no climáticas (Pascal).
- Definir qué es lo que quieren vigilar? (Álvaro).

COMITÉ DE EVALUACIÓN

CONVOCATORIA FONDO DE ADAPTACIÓN

Minuta de la reunión

Fecha: 09 de julio de 2014 Hora: 11:00 am-2:15pm
Lugar: Oficinas Fundecooperación

Asistentes:

Marianella Feoli Peña – *Fundecooperación*
Carolina Reyes Rivero – *Fundecooperación*
Karen Araya Varela – *Fundecooperación*
Carlos Picado - *CNE*
Tania López Lee – *Consultora*
Rodrigo Gómez Lobo – *INBio*
Lenin Corrales Chávez - *Consultor*
Pascal Giró – *UCR*
Álvaro Montero – *Consultor*

Análisis de las propuestas preseleccionadas del Componente 2 - Recurso Hídrico

- **009-14 COOPESANTOS**

- Busca solventar diversas problemáticas que enfrentan las ASADAS a nivel de gestión, que no corresponden a un proyecto de adaptación, y que además no han sido abordadas por las instituciones respectivas. La adaptación no podrá solucionar estas problemáticas, por lo que si las propuestas tienen este enfoque no serán efectivas. Pascal: es muy general, es cualquier cosa, no tiene adaptación, cualquier fondo, el problema para evaluar (Pascal).

- Se busca fortalecer la capacidad de las ASADAS para responder al cambio climático, de ahí que se consideren estas propuestas debido a los co-beneficios asociados (Marianella).
- A pesar de ser involucrar el tema de cuencas, no se evidencia la participación de actores clave como el ICE - Proyecto Pirris, Cuenca Río Parrita, Naranjo, Savegre, Paquita. Se contempla el Plan de Manejo de la Cuenca Savegre u otros estudios ICE? (Tania, Lenin).

- Las organizaciones en general carecen de información básica para hacer un planteamiento, así como falta

de capacitación (Carlos).

- Todas las propuestas deben tener un componente de creación de capacidades, no es justificable un proyecto que proponer acciones como medida de adaptación que son obligadas por ley, Ej - conservación de acuíferos (Lenin).

- Para aceptar esta propuesta se amplía mucho el concepto de adaptación. Se deben encontrar otras alternativas, para tener acciones concretas.

- La nueva ley de aguas obliga a la elaboración de los planes de manejo de cuenca, crea Consejos de Cuenca. El SINAC, ICE tienen conceptos de manejo de cuenca diferentes, incluso el INDER emplea manejo de territorios y por ende cuencas (Lenin).

- Al ser una cooperativa la organización ejecutora se tiene un componente innovador, por lo que se sugiere involucrar otros actores, como el AyA, y desarrollar un plan piloto que sea aplicable para otras zonas (Tania).

Conclusión: Ubicar la propuesta en componente 3, trabajar a nivel de ASADAS a través de un módulo de capacitaciones e invitar a COOPESANTOS como ejecutor.

➢ 021-14 PRODUS

- La medida "*Reducción del consumo de agua por persona mediante educación e inducción financiera, reparación fugas, desbordes*" es la única acción en adaptación de la propuesta.

- Falta el tema de los escenarios de consumo, escenarios de crecimiento de la población y de disponibilidad de agua. El tema de adaptación pasa por tomar agua de otro lado o migrar la población. A nivel nacional consumimos el doble del agua que el resto del mundo (Lenin).

- El país cuenta con una encuesta realizada a ASADAS por Yamileth Astorga, y se evidencia que las propuestas coinciden con las principales problemáticas identificadas en dicha encuesta (Lenin).

- Se cuenta con datos de la huella hídrica, en la Región Chorotega se tienen índices de los más altos del planeta (Tania).

- No todos los productos de la propuesta tienen el tema de adaptación. Por ej. el tema de mapas de uso de suelo, mediciones. De ahí que esta propuesta se puede considerar en un proyecto aparte en el tema de potabilidad y accesibilidad al agua.

- El país tiene una orientación a la elaboración de Planes de Seguridad del Agua en la ENCC.

- El cantón de Osa no es tan vulnerable, Caribe es prioridad (Lenin).

- Las propuestas deben incluir como requisito la elaboración del PSA con valoración de la infraestructura ante el CC (Marianella).

Conclusión: Unir las propuestas de COOPESANTOS con PRODUS, paquetes de proyecto por cuenca y por afinidad, trabajar un marco conceptual basado en seguridad hídrica.

➢ 032-14 CIEDES

- Todo proyecto de este tema tiene que considerar la demanda y proyección a futuro: disponibilidad del agua para cuánta gente y por cuánto tiempo (Lenin).

- Aclarar si el acueducto es manejado por la municipalidad.

- Analizar la participación de CEMEX (interés por pozos o responsabilidad social).
- Analizar los escenarios de aumento de nivel del mar del bajo Tempisque, esta es la zona de mayor aumento en las temperaturas -hasta en 7ºC- (Pascal, Lenin).
- Las soluciones son propuestas desde un punto estructural, hace falta incluir acciones a nivel de ecosistemas.
- Solicitar una guía (incluir cláusula en el contrato).

➢ 054- ACEPESA

- Muy poco presupuesto para las actividades planteadas

➢ 055- LAA

- En la propuesta se habla de vulnerabilidad del recurso hídrico (concepto erróneo).
- Se debe incluir proyecciones de disponibilidad hídrica con escenarios.
- Existen 1586 ASADAS a nivel nacional.
- Se plantea la necesidad de contar con un inventario de aguas a nivel nacional.
- WASE: tema capital natural en cuentas verdes. El país no puede cuantificar ni bosque ni recurso hídrico porque no tiene datos. Se creó una comisión institucional en estadística del agua, liderada por el INEC.

➢ 057-CFIA

- Revisar el costo asociado al soporte técnico por Engineers Canada.
- Solicitar un producto adicional, una guía del protocolo PIEVC tropicalizada y con manual de capacitación (Lenin).
- En el caso del Río Cañas, existe un proyecto redes comunitarias de la UNICEF, un proyecto SAT, un proyecto de JICA, proyecto parte baja media de la cuenca, hay una fuerte estructura en el tema de prevención y respuesta, debería articularse con el enfoque de gestión local, cuenca, redes de comunidad.
- Los beneficiarios serían las comunidades u hoteles? Se incluye la zona costera del cantón? Crear mapas de las ASADAS participantes (Pascal).
- Corresponde a una de las zonas de atención más urgente en tema de escenarios climáticos, se debe enfocar en la demanda de agua.
- Trabajar con el sector turístico, agrícola, en disminución del consumo de agua.
- Este proyecto requiere de datos climáticos históricos. El país (y el mundo) presenta deficiencias en estos registros, actualmente existen técnicas de reconstrucción histórica de datos a nivel regional (proyecto CATIE, Brasil, CIGEDI).

- **064-IMN**

- La propuesta no tiene un enfoque costero. El IMN debe integrar la parte marina (Lenin).
- La CNE desarrollo un proyecto análogo en Sarapiquí. Sin embargo, el único que soportaría el concepto de SAT es la cuenca del Tempisque (Carlos).
- Incorporación del ámbito municipal.
- SAT por sequía.
- Se deben identificar bien las cuencas que van a incorporar en el proyecto.
- Se plantea realizar una reunión con el sector marino costero (CIMAR, Instituto Geográfico, comités asesores técnicos en marinología).
- Omar, proyecto de alertas por telefonía celular.
- En los cantones de Nicoya, Nandayure y Hojancha han desarrollado el Plan de Desarrollo Cantonal Humano que incluye gestión del riesgo (todos los cantones deben incluir la gestión del riesgo). El cantón de La Cruz aún no lo ha desarrollado por lo que debería ser considerado en el proyecto. (Álvaro).

- **079-CEDARENA**

- Existe un proyecto del Banco Central a nivel país para la internalización de costos ambientales.
- Como resultado de este proyecto se tendría un aumento de los costos hacia los usuarios.
- Éticamente la propuesta presenta un problema. Ya existen mecanismos como el canon de aprovechamiento del agua, de donde debería salir el financiamiento en adaptación, mientras que se busca la transferencia del problema climático al consumidor.
- La ESPH implementa una tarifa hídrica, analizar lecciones aprendidas.
- Herramientas cuántos se ven afectados, iniciativa con MIDEPLAN.
- PSA debería incluir costos para la protección de fuentes de agua.
- El ejercicio que plantea la propuesta es válido, permitirá conocer cuáles son los costos asociados (la acción de medir es válida). De esta propuesta se podría obtener como producto el costo y luego establecer hacia dónde transferir los costos (Tania).

Conclusiones

- La propuesta país debe enmarcarse dentro de las zonas priorizadas, con respecto a la línea base y criterios previamente definidos. Las propuestas presentadas son aleatorias, corresponden a diferentes iniciativas pero no necesariamente se enmarcan dentro de esas zonas prioritarias, de ahí que existan grandes vacíos en zonas prioritarias como el Caribe, Zona Norte, y el sector costero guanacasteco.
- En el sector costero guanacasteco se plantea el tema de disponibilidad de agua, el factor de desalinización por la extracción del recurso de pozos, principalmente por proyectos hoteleros. De ahí que se plantea la necesidad de una rectoría en el agua de consumo, que existan datos disponibles en cuanto a cantidad de pozos, el impacto asociado en la cantidad y calidad de agua disponible, qué medidas se están tomando a nivel municipal para evitar y controlar el uso del agua por desarrolladores turísticos. Se identifica como actor en este tema a la Dirección de Aguas.
- Considerando que este programa constituirá un ejemplo a nivel mundial, es importante incluir proyectos en adaptación basada en ecosistemas. Las propuestas presentadas tratan de resolver un problema de finca, de unidad productiva. Actores identificados: SINAC; INBio; CATIE

- Se tienen tres grandes usos del capital natural: desarrollo urbano, desarrollo agrícola-pesquero y zonas protegidas, de los cuales se busca usufrutuar los servicios de dichos ecosistemas, sin una coordinación entre los diferentes sectores. Por lo tanto, se plantea la necesidad de un consorcio entre los diferentes actores e instituciones para generar una visión de conjunto, y contar con información para tomar decisiones integrales
- En la Zona Norte se debe trabajar el tema de las prácticas agrícolas con respecto al manejo del recurso hídrico. Se presentan disparidades entre diferentes cantones, en un radio de 5km una población tiene agua y la otra no. en que una tiene agua y otra no (ej. Los Chiles). Combinar con el tema de los incendios
- Revisar actores que no presentaron propuesta. Por ejemplo, el MAG está desarrollando un proyecto con pequeños agricultores en la Zona Norte en conjunto con la UNA en la parte de riesgo (A cargo de David Smith – también se desarrollaron talleres de aplicaciones climáticas con el MAG). También el proyecto REGATTA – UNEP desarrollado en Los Santos, verificar si la propuesta de COOPESANTOS está relacionada. También se desarrollaron proyectos en la parte sur de Limón en adaptación
- Desarrollar un módulo en gestión de capacidades dedicado a las ASADAS, en el que se puede trabajar con otras instituciones que quizás no estén involucradas actualmente
- El tema del cambio en el nivel del mar está ausente. El programa no podrá subsanar zonas como Puntarenas, pero se pueden intervenir otras comunidades costeras - Caribe
- Fortalecer el tema de análisis de demanda final de agua, trabajar con el INA, INTA u otros actores en tecnologías de ahorro de agua a nivel de uso domiciliar, urbano, agrícola, que permita ir desarrollando el concepto de un la creación de un instituto en tecnologías de agua a nivel nacional
- Trabajar el tema de "mala adaptación", el como la adaptación de uno puede implicar el riesgo a otro. Generación de impacto ambiental estratégico
- Coordinar la priorización de regiones por las diferentes instituciones como FONAFIFO, MAG, CNE
- Nuevo mapa de plagas y enfermedades en agricultura y ganadería
- Acciones en adaptación que no se realizan afectan cuenca abajo. Ej. Cuenca del Río Jesús María relacionado en conservación de suelos, afectando a otras zonas como Caldera y Barranca
- A nivel marino costero, hay que abrir el espacio de discusión, debido a que está orientado a investigación, se debe plantear un enfoque de acciones concretas en adaptación-
- En el marco de las propuestas presentadas se evidencian vacíos a los que hay que destinarle recursos y establecer los actores asociados, por ejemplo, desarrollar plan específico relacionado a la gestión integral de la costa, por medio de un piloto en la comunidad (Ej. Cahuita). Falta construir la propuesta final de manera que se destinen los $10 mill a los sectores prioritarios aunque aún no se tengan identificados quiénes serán los ejecutores. Dentro de las propuestas preseleccionadas, corresponde reevaluar las prioridades, ajustar presupuestos, para nivelar recursos para las nuevas ventanas dentro del programa FA a nivel de país.
- Incluir un proyecto que busque remediar el conflicto entre zonas costeras y agricultura. Por ejemplo, en el Pacífico Central, plantaciones como arroz y la palma africana han ido invadiendo sistemas costeros. Actualmente las soluciones se buscan a nivel sectorial, por lo que se debe abordar el elemento de adaptación territorial. En el Caribe la invasión de las zonas costeras ha sido de infraestructura humana, por lo que se deben desarrollar ejercicios de donde se realice una gestión comunal costera más integral.
- Requisitos para las propuestas:
    - Agro: Enfoque conservación de suelos y recurso hídrico
    - Recurso hídrico: Enfoque seguridad hídrica (Implementación de Planes de Seguridad de Agua orientado a vulnerabilidad climática)

Annex 3. Final Technical Review (Response Sheet)

Programme proposal: **"Reducing the vulnerability by focusing on critical sectors (agriculture, water resources, and coastlines) in order to reduce the negative impacts of climate change and improve the resilience of these sectors**"

Reviewer and contact person: **Daniel Gallagher**
Co-reviewer(s): **Franck Jesus**
NIE/MIE Contact Person: **Marianella Feoli**

Background: The Government of Costa Rica through Fundecooperacion initially submitted the programme proposal on August 26th, 2013. On September 16th, the Adaptation Fund Board secretariat sent its initial technical review findings for the aforementioned programme proposal. These findings are referred to as "Clarification Request –CR" and have been detailed in the Initial Technical Review Sheet sent on September 16th 2013.

On October 3rd 2013, further comments have been provided through the "Final Technical Review" and some CRs have been officially closed and are indicated as "addressed" in the technical review table. Please find below Fundecooperacion's detailed response to the clarification requests (CRs) that have remained opened. These responses summarize the changes that have been brought to the programme proposal, based on the CRs that have remained opened. The revised proposal document is attached, in both clean and track change formats as requested.

CR1: Please consider revising the description and justification of specific programme activities with a view to demonstrating how they have been selected to build resilience to climate change. In doing so, it may be useful to revise the tabular presentation of impacts and benefits on pages 49-52 to clearly focus on how activities build resilience. Additionally, the scale and geographical target of the proposed activities remains somewhat unclear. At the sub- national level, it is clear that a detailed prioritisation of regions has been undertaken, (summarised in Table 6) which suggests, for example, that the Chorotega Region has high vulnerabilities in the coastal areas and agricultural sector, whereas the Huetar Norte region has no coastal areas and the Central Pacific Region has no significant agricultural production. This level of detail has not been translated to the activity-level, where Table 8, for example, refers to a large number of possible local areas in every one of the six regions of Costa Rica without describing which activities are being targeted to which area. Additionally, several outputs seem to refer to activities that could have a national application scale (e.g. subsidized insurance policies programme).
Comment 3 Oct 2013: Mostly addressed. The proposal should clearly articulate how the proposed technical options enhance climate resilience in the agricultural sector, and on access to clean and safe water. Specific reference should be made to how the proposed activities are designed to be commensurate in overcoming the climate impacts in the areas of intervention, in the context of climate change in Costa Rica.
Response to 3 Oct 2013 comments:

The activities' potential to be commensurate in overcoming the climate impacts in the areas of intervention highly depends on the activities' specific characteristic, and therefore it needs to be assessed on a project basis. A paragraph was added at the beginning of PART II, explaining that the Programme Screening Methodology, presented in Annex I, will ensure that the technical options are commensurate in overcoming the climate impacts in the specific areas of intervention, on a project basis.

Additional explanations have also been added in each of the relevant activities. Two tables have also been added for each component 1 and 2 (Table 9 and 11), which describe in details how each specific technical option enhances resilience, along with concrete examples.

CR2: Please more clearly define the geographical target of the proposed activities, providing some granularity to the description of target areas for each specific activity described.

Comment 3 Oct 2013:

Addressed.

Response to 3 Oct 2013 comments:

N/A

CR3: Please provide a clear description of where, and on what scale, the adaptation, modernisation and improvement of community infrastructure of Output 2.2.3 is planned to take place on. In doing so, please describe how this infrastructure would be made resilient to climate change and extremes, to avoid maladaptation.

Comment 3 Oct 2013:

Not fully addressed.

Response to 3 Oct 2013 comments:

Output 2.2.3 has been modified to only include the revolving funds.
Additional explanations have been provided regarding the revolving funds, as also requested through CR5.

CR4: Please provide details on the proposed global agricultural insurance and subsidised insurance policies and programme, making specific reference to the goal of such a scheme, how it would work, who would manage it, and what source of fund would be used to finance it.

Comment 3 Oct 2013:

Not fully addressed.

The proposal should detail how the proposed insurance schemes are designed to alleviate climate impacts, rather than being based on the occurrence of previously established climate events. If such schemes were only designed on the basis of previous events, they would not achieve the objective of adapting to climate events that have not yet occurred or whose intensity and level of occurrence may increase in future.

Response to 3 Oct 2013 comments:

Additional explanation was added into the section “how it would work” within activity 1.2.1., indicating that insurance products that include climate risk for smallholder agriculture will also include the integration of seasonal climate forecasts into the index.

CR5: Please provide details on the proposed revolving funds of Outputs 1.2.2 and 2.3.4, making specific reference to the goal of such activities, how these funds would work, who would manage them, and what source of funds would be used to finance it. If there are synergies with the micro-finance schemes managed by Fundecooperación, please identify these. If this is the case, then please identify the added value of the programme on that domain.

Comment 3 Oct 2013:

Mostly addressed.

The proposal should make specific reference to the goal of the revolving funds under subcomponent 2.2.3, addressing how these funds would work, who would manage them, what source of funds would be used to finance them, and how the financing of the funds would be sustained in the long term.

Response to 3 Oct 2013 comments:

Additional explanations have been provided in sub-component 2.2.3, specifying the following items:

- Goal
- How it works
- Management
- Financing

CR6: For the activities targeting the reduction of erosion under Output 1.1.4, please clarify whether the proposal has considered the utilization of erosion reduction techniques such as cover crops (direct seeding on permanent plant cover) as a way to drastically reduce erosion, maintain soil humidity, and maintain a source of income on the land in question. If such approaches are not considered appropriate, please state why not.

Comment 3 Oct 2013:

Addressed.

Response to 3 Oct 2013 comments:

N/A

CR7: Please clarify the meaning of the title of Component 2, and consider reformulating and editing sections of the concept that could be more clearly communicated.

Comment 3 Oct 2013:

Addressed.

Response to 3 Oct 2013 comments:

N/A

CR8: Please provide a brief explanation of how the specific project activities will comply with the national technical standards identified.

Comment 3 Oct 2013: Addressed. Compliance with relevant national standards is included as an eligibility criterion in the Screening Methodology for project activities.
Response to 3 Oct 2013 comments: N/A

CR9: Please clarify the reference to complementarities that will exist between the specific programme activities and other initiatives. Clearly identify what is being done by other initiatives and what the programme will develop that is complementary.
Comment 3 Oct 2013: Addressed.
Response to 3 Oct 2013 comments: N/A

CR10: Please state how the proposed project is aligned with the Adaptation Fund results framework.
Complementary comments – CR10: Not fully addressed. This is a requirement of the technical review of implementation arrangements, hence can be more fully assessed at the full proposal stage.
Response to CR10:

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government[2] *Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:*

Mr. William Alpízar *Climate Change Office Director* *Ministry of Environment and Energy*	Date: *July 28th, 2014*

B. Implementing Entity certification *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (National Development Plan, a National Climate Change Strategy, a Carbon Neutral Country Program, State Policy for Climate Change in the Agriculture and Food, Strategy and National Plan of Integrated Water Resources and Coastlines Management and Action Plan for the National Strategy on Climate Change) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
Marianella Feoli Implementing Entity Coordinator Fundecooperación para el Desarrollo Sostenible	
July 28th, 2014	Tel: (506) 2225-4507 email: mfeoli@fundecooperacion.org
Project Contact Person: Marianella Feoli	
Tel. And Email: (506) 2225-4507 mfeoli@fundecooperacion.org	

6. Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.