

**MEMORANDUM TO THE DCI COMMITTEE
CONCERNING THE**

**2017 Annual Action Programme in favour of Nicaragua for
Climate Change Adaptation Programme in the Upper Basin of the
Coco River to be financed from the general budget of the Union**

1. Identification

Budget heading	21.02.01.00 – Cooperation with Latin America
Total cost	EUR 20 million of EU contribution This action is co-financed in joint co-financing by: – German Government for an amount which will be established in the Delegation Agreement between the EU and GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit)
Basic act	Regulation (EC) No 1905/2006 of the European Parliament and of the Council of 18 December 2006 establishing a financing instrument for development cooperation

2. Country background

Nicaragua has been showing significant economic growth since 2010 (about 4.5 % p.a.) but continues to face complex development challenges in terms of poverty, inequality as well as effects of climate change and resilience to natural disasters. Although, the economic growth combined with social transfers has helped to reduce poverty, down to 29.3 % of households rural areas maintain higher poverty levels (50.1 %). According to the United Nations Economic Commission for Latin America and Caribbean, Nicaragua is one of the countries in Latin America with higher structural gaps in income per capita and productivity, education, environment, infrastructure, health, gender and savings. Public policies and cooperation focus on these specific gaps.

Nicaragua is particularly vulnerable to the effects of climate change due to its location in the inter-tropical convergence zone and its socio-economic condition. Given that the national economy is largely based on the exploitation of natural resources and exports of agricultural commodities, any environmental degradation or climate variability have a significant impact on economic development. The adaptation of the territorial governance and agriculture practices to temperature change, extreme weather, drought, flooding and other disasters is of high priority, as is the progressive improvement of land and soil quality.

3. Summary of the Action Programme

• **Background:**

The lack of an integrated water resources management and the magnitude of deforestation and degradation of soils related to extensive practices of agriculture, livestock farming, and illegal logging, threaten the real availability of water in the country. Access to drinking water and

sanitation has improved, but remains insufficient particularly in rural areas.¹ This situation mainly affects rural women.

The main challenge of the on-going large investment in water system infrastructure in Nicaragua is to ensure a sufficient and sustainable water supply. The integrated water resource management at the country level and strengthening resilience of each watershed to the adverse effects of climate change are thus national priorities in order to achieve several development goals under the national strategies, as well as under the Agenda 2030. The EU is already co-financing the sector-wide programme on water and sanitation as well as the on-going elaboration of the National Plan of Water Resources.

In complementarity to these efforts, the present programme proposes to generate valuable expertise in implementing climate change adaptation measures addressing the origins of droughts by building partnerships in a priority watershed situated in the Central American 'Dry Corridor' for its sustainable management. Notwithstanding improving local conditions, the programme's added value will be the validation of a methodology to be applied country-wide and possibly in the Centro-American region. It will also mobilise domestic resources for the priority investments in the climate change adaptation.

- **Cooperation related policy of beneficiary country**

Trying to reduce the impact of climate hazards, the Government of Nicaragua have developed a credible legal framework addressing the problems of climate change. The country's main strategic planning documents - the National Plan for Human Development (PNDH, 2012-2016), and the Environmental and Climate Change Strategy (ENACC, 2010) - have identified a set of adaptation measures and disaster risk management, such as environmental education, protection of natural resources, conservation of water sources and preservation of water basins, sustainable land management, protection of ecosystems and forest coverage, amongst others.

The national policy documents and the CSP agree on the main issues, demonstrating coherence and alignment. The PNDH is an adequate and validated instrument at the national level. It is being updated, and poverty reduction will likely remain the overarching goal with emphasis on education.

- **Coherence with the programming documents:**

The EU Country Strategy Paper (CSP) 2014-2020 for Nicaragua has set climate change adaptation as a priority sector to be supported with EUR 50 million over that period (25 % of the total amount programmed). The context of the Nicaragua's vulnerability to climate change and the response identified in the CSP remain valid.²

The action is also aligned with the Regional Programme 2014–2020 for Latin America as it offers an opportunity to for synergies and strengthening the participation of Nicaragua in inter-regional policy dialogue under EUROCLIMA+ with the perspective of maximising the use of other, innovative EU funding instruments (blending).

The programme will address needs identified in the 2016 Latin American and Caribbean Environment Ministers Declaration of Cartagena by strengthening capacities and providing investments for adaptation measures, as essential pillars for taking action to tackle climate

¹ Only 65 % of rural population have access to secure drinking water, AGUASAN, 2017.

² Overall objective: increase the resilience of the population to the impacts of climate change by improving integrated water resources management and alleviating the pressure on natural forests.

change. It will also contribute to attaining the EU-CELAC (Community of Latin American and Caribbean States) Action Plan priorities related to climate change adaptation.

- **Identified action**

The general objective of the action is in line with the CSP 2014-2020 for Nicaragua:

To strengthen resilience of communities in the prioritised watersheds of Nicaragua to the effects of climate change, such as droughts and floods, in particular as it relates to food security, access to safe drinking water and sanitation, and ecosystems' functions.

The specific objective of the action is:

To contribute to the adaptation of men, women and communities present in the upper basin of the Coco River to the effects of climate change and increased climate variability.

- **Expected results:**

The project aims at achieving the following results:

R1. Increased availability and continuity of access of population to safe water and sanitation with gender equity approach.

R2. Implemented environment-friendly productive practices promoting restoration of ecosystems and preventing further biodiversity loss and deforestation.

R3. Increased forest resilience.

R4. Strengthened institutional and community based management capacities for climate change adaptation with gender equity approach.

- **Past EU assistance and lessons learnt.**

In the last decade, the EU has contributed approximately EUR 50 million to a sector-wide national programme on water and sanitation called PISASH. The EU enhanced the quality of investment in infrastructure, such as water resource sustainability, institutional capacities in maintenance, and the financial sustainability of network expansion. It has also been supporting with EUR 8 million the sustainable management forest and forest incentives within the ongoing bilateral project on the wood value chain (CAVAMA). Furthermore, the starting EU support of EUR 20 million to the bovine value chain promotes sustainable agricultural practices and harnesses the climate change mitigation potential of agriculture, while enhancing resilience to climate change impacts, conserving water resources, and preventing deforestation.

The past experiences show that projects aiming at the adaptation to climate change in a territory should be fully coordinated with local governments and other stakeholders which are present in the field and are familiar with the needs of the local populations.

- **Complementary actions/donor coordination.**

The present programme will be complementary and coherent with the on-going actions financed by other donors and implemented in the region of *Las Segovias* or at national level. In particular, synergies will be built with i) two Swiss Cooperation (COSUDE) actions: the project on territorial approach to climate change adaptation and vulnerability reduction and the programme on community management for adaptation to climate change in *Dipilto* Basin (neighbour basin to this action); and ii) the technical assistance project on water and sanitation (PROATAS) implemented by GIZ since 2011.

Special mention requires the opportunity for collaboration with the regional programme EUROCLIMA providing useful experience on the combination of actions in political and scientific area and the application of effective measures, such as tools on adaptation based in Ecosystems and Climate Change Academies for local authorities.

So far, there is no coordination mechanism between donors and the government in the environment and climate change sector, which would give greater efficiency and impact to cooperation. Nevertheless, the EU and its member States in Nicaragua, together with Switzerland and Canada, have developed a joint programming document, including joint analysis and response, focusing on six priority SDGs, including climate action. The joint programming has been a constructive exercise, which permitted aligning efforts on national strategies, while ensuring coherence and division of labour amongst EU donors. Gender has been also identified as a crosscutting priority.

4. Communication and visibility

This action shall contain communication and visibility measures which shall be based on a specific Communication and Visibility Plan of the Action, to be elaborated at the start of implementation.

In terms of legal obligations on communication and visibility, the measures shall be implemented by the Commission, the partner country and contractors. Appropriate contractual obligations shall be included in, respectively, the delegation agreement and procurement contracts.

The Communication and Visibility Manual for European Union External Action shall be used to establish the Communication and Visibility Plan of the Action and the appropriate contractual obligations.

5. Cost and financing

Climate Change Adaptation Programme	EUR 20 million
Total EU contribution to the measure	EUR 20 million

The German Government is committed to an indicative joint co-financing amount of EUR 1.5 million that will be confirmed in the Delegation Agreement between GIZ and the European Union. GIZ will be granted maximum fee of 7 % for budget administration.

The Committee is invited to give its opinion on the attached 2017 Annual Action Programme in favour of Nicaragua for Climate Change Adaptation Programme in the Upper Basin of the Coco River.



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ANNEX

of the Commission Implementing Decision on the 2017 Annual Action Programme
in favour of Nicaragua

**Action Document for Climate Change Adaptation Programme in the Upper Basin of the
Coco River**

1. Title/basic act/ CRIS number	Climate Change Adaptation Programme in the Upper Basin of the Coco River CRIS number: LA/2015/039-205 financed under Development Cooperation Instrument	
2. Zone benefiting from the action/location	Nicaragua The action shall be carried out at the following location: River basins of Tapacalí, Inalí and Macuelizo Rivers and surrounding areas, in the upper basin of Coco River.	
3. Programming document	Multiannual Indicative Programme 2014-2020 Country Strategic Paper for Nicaragua	
4. Sector of concentration/ thematic area	Sector 3: Adaptation to Climate change Natural Resources Management	DEV. Aid: YES
5. Amounts concerned	Total estimated cost: EUR 21 500 000. Total amount of EU budget contribution: EUR 20 000 000 This action is co-financed in joint co-financing by: – German Government for an amount of EUR 1 500 000 This action might be co-financed by potential grant beneficiaries for an amount which would be specified in the grant contracts implemented under indirect management.	
6. Aid modality(ies) and implementation modality(ies)	Project Modality Indirect management with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Indirect management with Nicaragua Direct management (evaluation and audit)	
7 a) DAC code(s)	410	

b) Main Delivery Channel	Government of Nicaragua - 52 GIZ -			
8. Markers (from CRIS DAC form)	General policy objective	Not targeted	Significant objective	Main objective
	Participation development/good governance	<input type="checkbox"/>	X	<input type="checkbox"/>
	Aid to environment	<input type="checkbox"/>	<input type="checkbox"/>	X
	Gender equality (including Women In Development)	<input type="checkbox"/>	X	<input type="checkbox"/>
	Trade Development	X	<input type="checkbox"/>	<input type="checkbox"/>
	Reproductive, Maternal, New born and child health	X	<input type="checkbox"/>	<input type="checkbox"/>
	RIO Convention markers	Not targeted	Significant objective	Main objective
	Biological diversity	<input type="checkbox"/>	X	<input type="checkbox"/>
	Combat desertification	<input type="checkbox"/>	X	<input type="checkbox"/>
	Climate change mitigation	<input type="checkbox"/>	X	<input type="checkbox"/>
	Climate change adaptation	<input type="checkbox"/>	<input type="checkbox"/>	X
9. GPGC thematic flagships	n/a			
10. Sustainable Development Goals (SDGs)	Main SDG Goal: SDG 13 – Climate action Secondary SDG Goals: SDG 5 – Gender equality; SDG 6 – Clean water and sanitation; and SDG 15 – Life on Land			

SUMMARY

In the last five years, the EU has been supporting Nicaragua to improve the quality and coverage of drinking water and sanitation services under a sector wide programme LAIF-PISASH. The main challenge of this large investment in water system infrastructure is to ensure a sufficient water supply. The integrated water resource management at the country level and strengthening resilience of each watershed to the adverse effects of climate change are thus national priorities in order to achieve several development goals under the national strategies, as well as under the United Nations (UN) Agenda 2030. The EU is already co-financing the on-going elaboration of the National Plan of Water Resources. In complementarity to these efforts, the present programme proposes to generate valuable expertise in implementing climate change adaptation measures addressing the origins of droughts by building partnerships in a priority watershed situated in the Central American 'Dry Corridor' for its sustainable management. Notwithstanding improving local conditions, the programme's added value will be the validation of a methodology to be applied country-wide and possibly in the Centro-American region. It will also mobilise domestic resources for the priority investments in the climate change adaptation.

It is expected that thanks to this programme, the forest cover of the watershed priority areas will be increased, the function of ecosystems restored and the access of local population to safe drinking water and sanitation improved. Consequently, it fully contributes to the Country Strategy Paper (CSP) 2014-2020 objective 'to increase the resilience of the population to the impacts of climate change by improving integrated water resource management and

alleviating pressure on natural forests,' and more specifically 'to support the recovery and protection of natural resources in selected river basins.'

1 CONTEXT

1.1 Country and thematic context

Nicaragua is particularly vulnerable to the effects of climate change due to its location in the inter-tropical convergence zone and its socio-economic condition. The country sustains its development in agriculture and fisheries, being one of the economies most exposed to climate hazards. In the recent history, between 1990 and 2012, the extreme weather events (e.g. hurricanes, tropical storms, floods and landslides, excluding droughts) have produced direct and indirect economic losses, estimated at 1.89 % of annual GDP¹.

In addition, a part of the territory of Nicaragua is also prone to severe drought, mainly associated with ENSO phenomenon², especially along the Central American 'Dry Corridor', a region that expands from South of Mexico to Costa Rica, including the Occidental part of Las Segovias region, where this programme will be implemented. 66 out of 153 of Nicaragua's municipalities are located in the Dry Corridor.

The lack of an integrated water resources management and the magnitude of deforestation and degradation of soils related to extensive practices of agriculture, livestock farming, and illegal logging, threaten the real availability of water in the country. Access to drinking water and sanitation has improved, but remains insufficient particularly in rural areas³. This situation mainly affects rural women, because they use to be assigned to water procurement and have to manage with domestic uses of it within scarcity restrictions. One of the main challenges in water management is also a fair distribution of water for human consumption and industrial and agricultural use while potential investments are confronted to the downward trend of water availability.

In the future, the climate change effects will likely increase the existent hazards or cause new ones. Comparing the climate statistics over 1980-2009 with a model run over the period 2010-2040, the projected climate show an increase of Nicaragua's average temperature between 0.6°C and 0.8°C. Regarding precipitation, significant changes in the rain distribution within the wet period (May-October), as well as a 5 % to 10 % increment of the number of days without precipitation are expected.⁴ In the area of Las Segovias, the likely scenarios of climate change⁵ indicate that the climate will become warmer and drier, with an increase in temperatures of 0.9°C by 2020 and 2.1°C by 2050, a cumulative number of dry months increasing from 6 to 7 months and the annual rainfall reduction of 10 – 15 %.

¹ Harmeling, S. and Eckstein, D., Global Climate Risk Index, 2013.

² El Niño–Southern Oscillation (*ENSO*) is an irregularly periodical variation in winds and sea surface temperatures over the tropical eastern Pacific Ocean.

³ Only 65 % of rural population have access to secure drinking water, AGUASAN, 2017.

⁴ Assessment of Climate Change in Nicaragua: Analysis of Precipitation and Temperature by Dynamical Downscaling over a 30-Year Horizon, Scientific Research Publishing Inc., 2016.

⁵ Clima, Eventos Climáticos Extremos, y Proyecciones futuras del Clima en Las Segovias., INETER - MARENA, supported by the TACC project, 2013.

Climate change is expected to aggravate the existing structural problems that already lead to water scarcity in many Nicaraguan regions. The adaptation of the territorial governance and agriculture practices to temperature change, extreme weather, drought, flooding and other disasters is thus of country's high priority, as is the progressive improvement of land and soil quality.

1.1.1 Public Policy Assessment and EU Policy Framework

The EU Country Strategy Paper (CSP) 2014-2020 for Nicaragua⁶ has set climate change adaptation as a priority sector to be supported with EUR 50 million over that period (25 % of the total amount programmed). The context of the Nicaragua's vulnerability to climate change and the response identified in the CSP remain valid.⁷

Trying to reduce the impact of climate hazards, the Government of Nicaragua have developed a credible legal framework addressing the problems of climate change. The country's main strategic planning documents - the National Plan for Human Development (PNDH, 2012-2016), and the Environmental and Climate Change Strategy (ENACC, 2010) - have identified a set of adaptation measures and disaster risk management, such as environmental education, protection of natural resources, conservation of water sources and preservation of water basins, sustainable land management, protection of ecosystems and forest coverage, amongst others. For the climate change axis, ENACC prioritizes water collection and distribution, the production of resistant seeds, agricultural diversification, strengthening information monitoring mechanisms, whereas in mitigation, it plans to increase investment in electricity generation using renewable sources and reducing air pollution by using clean technologies.

The national policy documents and the CSP agree on the main issues, demonstrating coherence and alignment. The PNDH is an adequate and validated instrument at the national level. It is being updated, and poverty reduction will likely remain the overarching goal with emphasis on education. As a risk management measure, the Government recently announced to integrate the cost of adaptation to climate change into all public investments. Furthermore, the public policies behind the investment plan for 2017-2021 address issues to reduce the country's vulnerability to effects of climate change (such as changing the energy matrix⁸, enhancing productivity by technological upgrade in agriculture, commercial integration and diversification, reforestation, water and sanitation, among others). The internal monitoring system of government (SIGRUN) monitors on a regular basis the fulfilment of the foreseen targets, although it focusses on activities and is not suited for results based management. Still a more integrated approach to risk assessment at the national and departmental levels is needed to counter changes in pressures that may arise from the direct impacts of climate change.

Nonetheless, the ENACC still lacks an explicit action plan. After 7 years of implementation, it should be evaluated and updated in articulation with other on-going formulations of public policies, like the National Plan of Water Resources (PNRH) and the Strategic Framework for the Dry Corridor (MECS), both currently under preparation with a technical support of World

⁶ EU Country Strategy Paper and Multiannual Indicative Programme 2014-2020 for Nicaragua.

⁷ Overall objective: increase the resilience of the population to the impacts of climate change by improving integrated water resources management and alleviating the pressure on natural forests.

⁸ By 2015, 54 % of energy was generated with renewable sources, a major change with respect to 2007 (27.5 %).

Bank. While it is too soon to shape future interventions within the PNRH, fruitful articulations must be established between programmes focused on water management and a new generation of actions in rural productive development with sustainable natural resources management.⁹ Furthermore, relevant synergies should be built with the National Strategy on Avoided Deforestation REDD+, which is being elaborated with the support of the Forest Carbon Partnership Facility (FCPF). All these strategic programmes should be coordinated for the exchange of information and lessons learned.

The national climate strategy and action is implemented by different public bodies under the leadership of the Ministry of the Environment and Natural Resources (MARENA), the country's focal point vis-à-vis the United Nations Framework Convention on Climate Change. The National Forestry Institute (INAFOR) is a decentralized body responsible for the sustainable development of forest resources and climate change adaptation, promoting reforestation, community forestry, and management, conservation, and restoration of the forest, safeguarding the production of seeds and forestry. The transversal functions of information management rely on the Nicaraguan Institute of Territorial Studies (INETER), responsible for monitoring of natural risks, production of cartography and spatial information studies (cadastral, meteorological, hydrological, geological), and research of the physical environment that contributes to the socioeconomic development and prevents risks of natural disasters. Several projects¹⁰ have been implemented within the framework of the ENACC building on the results achieved by previous actions focused on natural resources management in productive activities.¹¹ MARENA has coordinated some important projects focused on watershed management and climate change adaptation demonstrating good implementation capacity. INAFOR gathered a large experience in the management of forest incentives within the ongoing bilateral project supporting the wood value chain (CAVAMA).

Three national institutions share responsibilities in water management:

1. The Nicaraguan Water and Sewage Enterprise (ENACAL) is the national operator of water and sanitation services in urban areas. It manages directly 2 out of 6 of small towns' systems in the area of intervention, plus the medium-sized city of Somoto. ENACAL developed valuable expertise in the design and implementation of water supply and sewage systems within the ongoing sector-wide Programme for Human Water and Sanitation in 19 Cities of Nicaragua (PISASH)¹².
2. The Social Investment Fund (FISE) is a public implementation body of social policy projects, mainly in rural water and sanitation.
3. The National Water Authority (ANA) should guarantee the decentralized management of water resources across the country and support the River Basin Committees promoting the citizen participation in the management of water resources at local level.

9 NICAVIDA – FIDA, AGRIADAPTA – COSUDE, to be launched in 2017.

10 PAGRICC (Environmental program on risk disaster management and climate change in the watershed #60 – Adaptation Fund, and TACC – COSUDE / PNUD (Territorial Approach against Climate Change, adaptation measures and reduction of vulnerability in Las Segovias Region).

11 POSAF – BID (Environmental and forestry development Program), MST – GEF/PNUD, PIMCHAS – ACDI.

12 PISASH is implemented with the technical support of AECID and GIZ and funded by EIB, EU, Spain, CABEI and the Government.

Even if the Government has set the watershed management approach as the working pattern for protection and management of water resources, so far, the national context seems to be not ready for an additional step towards watershed authorities. A coordination mechanism already exists under Majors' leadership; nonetheless, it has the scope of municipal territories, so additional coordination mechanisms are necessary to achieve a comprehensive watershed management.

The facts reporting on water scarcity in many Nicaraguan regions suggest that efforts should be intensified to better manage the use of water and thereby reduce pressure on water supply sources, especially in times of droughts. All possibilities to improve water efficiency and saving should be explored under the ongoing elaboration of the National Plan of Water Resources. The greatest scope for action is likely needed to promote the efficient use of water by establishing measures preventing excessive water consumption, in particular by reducing irrigation demands which usually account for the largest fraction of total demand in water scarce regions. Other measures include reducing leakage in water distribution networks, wastewater recycling, and market-based instruments.

The 2016 Latin America and Caribbean (LAC) Environment Ministers Declaration of Cartagena reiterated that further efforts to reduce the region's climate change vulnerability are needed from all the LAC countries and the international community. This programme will address these needs by strengthening capacities and providing investments for adaptation measures, as essential pillars for taking action to tackle climate change. It will also contribute to attaining the EU-CELAC (Community of Latin American and Caribbean States) Action Plan priorities related to climate change adaptation.

The government launched in 2008 a Policy on equal rights and opportunities (Law No 648 of 2008) aimed at establishing favourable action to mainstream gender issues in the main public institutions and municipalities. The National Development Plan (PNDH) integrates principles of gender equality. The Plan explicitly states the following aspects: (i) comprehensive policy against domestic violence, sexual and gender; and (ii) policy for the development of women. The Plan also promotes the gender equity in governance, access to decision making process and participation of women in natural resource management.

The present action is in line with the Law on Equal Rights and Opportunities which provides good framework to address gender issues related to this action, in particular women role in agriculture-based subsistence economies and access to water.

The action will also contribute to the implementation of the EU Gender Action Plan 2016-2020; in particular it will contribute to the achievement of the following two Thematic Priorities:

1/ Economic, Social and Cultural Rights - Economic and Social Empowerment

- Objective 15: Equal access by women to financial services, productive resources including land, trade and entrepreneurship;
- Objective 16: Equal access and control over clean water, energy, transport infrastructure, and equitable engagement in their management, enjoyed by girls and women

2/ Political and civil rights - Voice and Participation

- Objective 20: Equal rights enjoyed by women to participate in and influence decision-making processes on climate and environmental issues

1.1.2 Stakeholder analysis

The coordination of public actions on climate change adaptation requires strategic alliances among different actors inside a watershed, as well as a strong capability of public institutions to deal with complex and simultaneous tasks related to territorial planning with a focus on integrated water management. The Government of Nicaragua implements a model of “alliances for prosperity” among national institutions, local governments, the private sector, producers, social movements and local associations. In this context, this programme integrates into its implementation the following national authorities: INAFOR, ENACAL, FISE, ANA, and INETER, under the leadership of MARENA¹³.

ENACAL is the key institution that administrates infrastructure and services to urban populations, while FISE promotes and invests in water infrastructure for rural populations. ANA regulates water use and management; thus, it plays a key role for estimating water demand by type of uses (productive, domestic and industrial). MARENA promotes and implements conservation area management and it has developed experience in promoting environmental restoration processes and ground water recharge areas. INAFOR promotes reforestation through fiscal and monetary incentives, and it has developed important experiences with CAVAMA and FONADEFO (the Regulatory Committee of the National Forest Development Fund). INETER is the key institution for environmental – related risks, as it provides information for decision making. It also governs topics such as land use and it provides water balances.

The local authorities are crucial players in promoting the economic development and sustainable management of natural resources. According to the law, they should allocate 12.5 % of its annual budget to water and environment. They are aware of risks of the climate change effects, and some have approved strategies to mitigate these risks. Other strategies developed at a municipal level include plans for the administration of drinking water facilities and the management of river (sub) basins. INIFOM is the national institution in charge of local authorities, coordinating their actions within strategic guidelines.

The programme will work with the local governments of Macuelizo and Santa Maria in the department of Nueva Segovia; and those of Somoto, Totogalpa, San Lucas, Las Sabanas and San Jose de Cusmapa in the department of Madriz as well as well-established and experienced local associations. Indigenous communities present in the area are of Chorotega ascendance and are located mainly in the municipalities of San Lucas, San José de Cusmapa, and Totogalpa. They are highly correlated with the highest rate poverty and of smaller properties.

In general, the local stakeholders, such as farmers, forestry producers, SMEs, the civil society and communitarian organisations are well organized, providing thus a strong basis for the set-up of water committees and river basin committees. In the past years, cooperation projects

¹³ MARENA has a regional office in the area of the programme, which should be further strengthened. INAFOR has two regional offices in Madriz and Segovia departments. ENACAL has two regional offices (in Somoto and Ocotal), but FISE, INETER, and ANA do not.

implemented in the region have supported these stakeholders with technical assistance and enabled an extended network of trained local promoters. These efforts already contributed to promoting sustainable agriculture, agro-forestry and anti-erosion actions among local farmers. Worth mentioning that a strong social differentiation exists within the farmer population in the zone, where 39 % of them own less than 1.4 Ha, and only 3 % have more than 70 Ha properties.

Although, the programme will prioritise rural communities, where the poverty levels are much higher than the national average, both, rural and urban families will be granted better access to safe water by promoting practices and investments that have an impact on its availability. The programme will also provide support to local farmers and forestry producers to implement climate-smart production practices in critical areas for water infiltration with the aim to restore natural functioning of the river basin, to preserve the sustainability of water resources as well as to recover and protect soils and ecosystems.

Given the role that women have in natural resources / land use and stewardship, and that environmental degradation, such as desertification and deforestation, has a major impact on women's lives, women's organization have been consulted and women in general will benefit from the action.

1.1.3 Priority areas for support/problem analysis

The 822 km long Coco River arises in the North of Nicaragua at the junctions of Tapacalí and Comalí rivers (the latter one is Honduran). The programme will focus on the sub-basins of the Tapacalí and Inalí Rivers and other smaller streams, in the Madriz Department, as well as the Macuelizo River in Nueva Segovia. The government has prioritized the Upper Coco River Basin, because of its characteristics: a relatively densely populated zone (85 inhabitants / km²), with high prevalence of poverty, frequently affected by drought and inundations and globally affected by water scarcity. Additionally, this choice allows for the building of synergies with a new project of watershed management in the neighbouring watershed of the Dipilto River, financed by the Swiss Agency for Development and Cooperation (COSUDE).

The programme will cover 943 km², involving seven municipalities: Macuelizo and Santa María at the Nueva Segovia Department; Totogalpa, Somoto, San Lucas, Las Sabanas and San Jose de Cusmapa at the Madriz department, with an estimated population of 83,500 inhabitants of which 59 % live in rural areas. The total indigenous population in the area of intervention amounts to about 24,000 inhabitants. Six of these municipalities are classified as part of the Dry Corridor, according to the last official definition. Despite of its location outside the prioritised watershed, the municipality of Santa Maria in Nueva Segovia has been included in the intervention area for its peculiar socio-economic characteristics (highest rate of poverty, lack of access to secure water and other social gaps).

Two protected areas are located in the upper basin of Coco River: the *Tepesomoto- La Patate* Natural Reserve and the National Monument *Cañon de Somoto*, covering an area of 2,770 Ha. The northern sector of the area of intervention - the basin of the Macuelizo River - is characterised by lower density of population and so far highly (40 %) forested land (pine) on the particularly fragile and poor soils. Urgent action is needed to regenerate the remaining forest and protect the natural reserves.

The zone is a tropical dry ecosystem characterized by scarce precipitations (800 – 1200 mm/year, with a long dry period up to 7 months), warm temperatures and high evaporation rates, altogether contributing to a significant deficit of water available for human consumption and irrigation purposes, in particular during the months of heatwave (from July to August). The main challenge is thus to ensure maximum recollection of rainwater during wet season and careful use of water resources during the dry season.

The topography is dominated by slopes above 15 %, which represent 36 % of the total area. 18 % is still covered with pine forest, hardwood forest, and coffee with shade, but 26 % is covered by grazing land and 46 % by scrubland, mainly used for cattle rising. Most of the soils are not suitable for the development of intensive agriculture, even if it is the main source of employment and income.

Furthermore, the inadequate use of the soil and extensive agriculture practices (such as cattle breeding, overgrazing, and lack of soil coverage technics) in the major part of the intervention area, combined with unregulated harvesting of pine forest have enhanced deforestation and forest degradation as well as the reappearance of the southern pine beetle. Consequently, there are problems of erosion; the valleys are poor in organic material, and the soils are compacted by the livestock, limiting the infiltration of water. The problems of inadequate use of soil affect about 76 % of the territory.

Also, there is little or no action taken to ease rainwater infiltration. The steep topography and lack of obstacles for running waters during heavy rains limit water infiltration with the double impact of soils erosion and little replenishment of subterranean water stocks. In some locations, the streams or surface run-off waters are contaminated due to the use of agrochemicals, lack of adequate sanitation, and soil erosion. There are, however, groups of farmers trained to sustainable agriculture, such as agroforestry and anti-erosion actions, but these efforts are still too scattered to have a significant impact on the watershed as a whole.

Because of these different factors, and in spite of some improvements made in the last ten years, access of the population to secure water and functioning sanitation is limited¹⁴. The situation is much worse for rural population which have to spend additional hours to get water. Urban population is mainly affected by an intermittent water distribution. With regards to the quality of water, the monitoring in 2015 indicated that 79 % of local water distribution systems use underground water. 45 % of them are contaminated by the lack of basic rural sanitation, and 9 % have prevalence of arsenic.

As regards to the equality between men and women, huge gaps still exist for the management of household assets as well as productive resources such as land and domestic animals. According to the last National Agricultural Census from 2011, 23.3 % of the agricultural producers are women. There is also a considerable gender difference regarding access to agricultural extension services and access to credit, as well as regarding labour market. Moreover, women are disproportionately affected by climate change. Indeed, access to water represents a heavy workload preventing women to spend more time on income-generating

¹⁴ For instance up to 90 % of population in the case of San Lucas and only 33 % in the small towns have access to secure water. Population census, 2005.

activities or to rest. Consequently, women have to play a crucial role in climate change adaptation actions.

2 RISKS AND ASSUMPTIONS

RISK	RISK LEVEL	MITIGATING MEASURES
Limited capability and level of coordination among the public institutions. Changes in the management of sectoral coordination by authorities.	Medium	The programme will apply a model of alliances and shared responsibilities among the national and local authorities, civil society and community organisations. The institutional framework and responsibilities for the programme implementation are clearly defined and agreed between the Government and the EU Delegation.
The impacts of the programme may not be continued if further investments for the adaptation to climate change effects are not carried out with public and private funds.	Medium	As foreseen in the PNDH, the costs related to adaptation to climate change should be integrated into public and private plans and investments, with the purpose of having a percentage of the budget of public and private investments for the processing of cleaner technologies and unforeseen events. The EU Delegation is developing a policy dialogue with Ministry of Finances to promote internalisation of recurrent costs of the Programme within sectoral budgets.
The regulations related to the use of water and protection of natural resources are not respected.	Medium	The programme includes activities on environmental education and awareness, as well as on institutional strengthening to better manage information, perform monitoring and enforce regulations.
A gender blind implementation could reinforce existing gender inequalities in the sector and hinder the efficiency and sustainability of the action.	Low	Gender mainstreaming applied in all phases of the project cycle; inclusion of women in the implementation of the project; gender sensitive monitoring; and use of sex disaggregated data and gender sensitive indicators.
Municipal elections in the fourth trimester 2017 may produce changes in priorities and staff in local authorities	Low	The programme was designed together with the central government authorities (including INIFOM). It was thoroughly consulted with different actors present in the intervention area and receives their full support.
Assumptions		
<p>The sectoral institutions and local governments make use of territorial planning instruments. The human and material resources are available for local authorities, which have capacities to develop alternative economic incentives to encourage the appropriate use of the land.</p> <p>The programme stakeholders are receptive to the introduction of new models of sustainable land use and have good willingness to accept the changes in production patterns to make them more environmental-friendly.</p> <p>The existing legal framework for sustainable management of natural resources and the protection of the environment, in particular, its implementing provisions, will be updated and enforced. Programmatic instruments such MECS and PNRH, currently under formulation, will enhance public investments in climate change adaptation plans. Proposed integrated water management and</p>		

sustainable land management strategies will be implemented.

Climate risks remain at current levels.

3 LESSONS LEARNT, COMPLEMENTARITY AND CROSS-CUTTING ISSUES

3.1 Lessons learnt

- Community participation is considered crucial to strengthen climate change resilience at local level. Projects aiming at the adaptation to climate change in a territory should be fully coordinated with local governments and other social players such as civil society organizations, which are present in the field and are familiar with the needs of the local populations. In this context, fruitful experience has been gain by the project on climate change adaptation in Las Segovias region (PIMCHAS) financed by Canada and implemented by MARENA as well as diverse thematic projects funded by the EU.
- Any new initiative should take advantage of experiences that have been developed and validated by previous actions. In this respect, both MARENA and INAFOR have developed valuable expertise through a portfolio of already implemented or on-going projects.
- Projects need to disseminate the results of the investigations and studies carried out to produce an effect on decision-making processes and on the design of public policies.
- There is a need to ensure a minimum geographic coverage of the natural resources management measures, in particular, reforestation, forest management, sustainable agriculture, water harvesting and soil conservation practices, to have an impact on the river basin ecosystem. Education and awareness, enforcement of regulations, and environmental information management should be part of project activities in order to ensure sustainability.

3.2 Complementarity, synergy and donor coordination

The present programme will be complementary and coherent with the on-going actions financed by other donors and implemented in the region of *Las Segovias* or at national level. In particular, synergies will be built with i) two Swiss Cooperation (COSUDE) actions: the project on territorial approach to climate change adaptation and vulnerability reduction and the programme on community management for adaptation to climate change in *Dipilto* Basin (neighbour basin to this action); and ii) the technical assistance project on water and sanitation (PROATAS) implemented by GIZ since 2011. The later has developed together with government institutions an extensive knowledge and practices in adaptation to climate change effects within the implementation of water resources management plans, such as on reforestation measures, reduction of erosion, water harvesting and monitoring of water resources for enhancing the resilience of the population.

Furthermore, the programme activities will also be coordinated with the forthcoming project on adaptation to changing markets and the effects of climate change funded by FIDA and CABEL, as well as the programme on climate change adaptation in the water and sanitation sector approved by Special Climate Change Fund and supported by the World Bank. In the same way, the programme will take into account the existing information and experience generated by the projects strengthening local capacity for the management of water and natural resources and adaptation to climate change implemented by different CSOs, local authorities and universities (e.g. Golf of Fonseca programme, Bosawas Biosphere Reservation programme).

Special mention requires the opportunity for collaboration with the regional programme EUROCLIMA providing useful experience on the combination of actions in political and scientific area and the application of effective measures, such as tools on adaptation based in Ecosystems and Climate Change Academies for local authorities. There are further opportunities for synergies and strengthening the participation of Nicaragua in inter-regional policy dialogue under EUROCLIMA+ (in particular sector 1 – forests, biodiversity and ecosystems, sector 2 – disaster risk reduction and management, and sector 5 – resilient food and production) with the perspective of maximising the use of other, innovative EU funding instruments (blending). In addition, these sectors are implemented by GIZ, also foreseen to implement this programme.

Finally, the EU donors, Canada and Switzerland are making efforts to deepen the coordination among them within the Joint Programming exercise aiming to promote aid effectiveness, harmonization, and alignment. So far, there is no coordination mechanism between donors and the government in the environment and climate change sector, which would give greater efficiency and impact to cooperation. The government prefers bilateral partnership with each donor, steered by the Presidency and coordinated by the Ministry of Foreign Affairs, the Secretariat of the International Cooperation, and involving relevant national institutions.

3.3 Cross-cutting issues

Climate change and environment are at the very heart of human rights, in particular those of children and vulnerable groups, who are most likely to suffer from its negative impact (and could, in extreme cases, become climate change refugees). The programme is designed to ensure respect of human rights as set out in the PNDH and in the EU Human Rights Strategy, in particular in relation to the access to safe food and water.

The evidences suggest that women are disproportionately affected by climate change. Indeed, processes such as environmental degradation, desertification and deforestation, has a major impact on women's lives causing longer journeys to collect water or firewood, and affecting women's ability to feed and sustain their families.¹⁵ Consequently, women also play a crucial role in climate change adaptation actions. Based on the EU Gender Action Plan 2016-2020, the programme will focus on gender mainstreaming and supports women's social and economic rights. The respect of equal opportunities for women and men in the access to and participation in the programme activities as well as empowering of women in the decision-making processes and community structures related to the water management will be fully ensured.

Special emphasis will need to be placed on indigenous communities, who frequently have experienced the smallest progress in poverty alleviation.¹⁶ Climate change compounds other important stresses on their productive resources and traditional ways of life, threatening the viability of their livelihoods and eroding their traditional cultures. Indigenous communities present in the area of intervention were consulted during the formulation, and their active participation is foreseen in the relevant activities.

¹⁵ According to UNIFEM, on average, women and girls devote over 5 hours a day for travel between 1 and 1.5 km, carrying between 15 and 20 litres of water per journey.

¹⁶ UNPFII 2006; Psacharopoulos and Patrinos 1994; Tomei 2005; Hall and Patrinos 2006.

4 DESCRIPTION OF THE ACTION

The present programme follows an integrated approach based on a combination of robust adaptation measures with cross-sectoral benefits at territorial level. It was designed on the basis of the best available information and assessment of the pressures including climate projections. The identified adaptation measures make provision for the actions being taken by other stakeholders to adapt to climate change and incorporate good practices, and lessons learnt from diverse actions tackling climate change, which were funded by international cooperation (e.g. EU, Germany, and Switzerland) and implemented by both national institutions and CSOs in Nicaragua. The programme will also contribute to the mitigation objectives, such as reforestation, and strengthen sustainable land management. The programme will build synergies with local development plans as the major part of activities will be implemented with concerned municipalities.

4.1 Objectives and results

Overall objective:

To strengthen resilience of communities in the prioritised watersheds of Nicaragua to the effects of climate change, such as droughts and floods, in particular as it relates to food security, access to safe drinking water and sanitation, and ecosystems' functions.

Specific objective:

To contribute to the adaptation of men, women and communities present in the upper basin of the Coco River to the effects of climate change and increased climate variability.

This objective will be achieved through protection and restoration of soils, forests, biodiversity and integrated water management and access.

The expected results are the following:

R1. Increased availability and continuity of access of population to safe water and sanitation with gender equity approach.

This result will be achieved by improving efficiency of existing systems and water utilisation as well as investment in new facilities.

R2. Implemented environment-friendly productive practices promoting restoration of ecosystems and preventing further biodiversity loss and deforestation.

This result will be achieved through implementation of management plans at communities, farms and protected areas levels.

R3. Increased forest resilience.

This result will be achieved by promoting sustainable forest management, natural regeneration, agroforestry, forest plantations and by strengthening the control and traceability system.

R4. Strengthened institutional and community based management capacities for climate change adaptation with gender equity approach.

This result will be achieved through the integration of hydro-meteorological and water resources analysis, territorial planning, and the promotion of environmental values and citizen participation.

This programme is relevant for the Agenda 2030. It contributes primarily to the progressive achievement of SDG Goal 13 – Climate action – 'Take urgent action to combat climate change and its impacts', but also promotes progress towards Goals: SDG 5 – Gender equality – 'Achieve gender equality and empower all women and girls'; SDG 6 – Clean water and sanitation – 'Ensure availability and sustainable management of water and sanitation for all'; and, SDG 15 – Life on Land – 'Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss'. This does not imply a commitment by the country benefiting from this programme. The programme is also in line with the European Consensus priorities: ensuring access to safe water and food (people), sustainable management of natural resources and integrating environment and climate change in development policies (planet) and fostering sustainable agriculture value chains (prosperity).

4.2 Main activities

Indicatively, activities will include the following:

Start-up activities: To set-up a monitoring system and to establish a baseline for the monitoring and evaluation of indicators; and local promotion of programme's activities.

Activities relating to R1. Access to safe water and sanitation:

R1A1. To identify, formulate and implement projects for water and sanitation at the local level, adjusted to the needs of the rural and urban population, based on the inventory of sources, and to promote the efficiency of existing systems. The performance of existing water supply systems will be enhanced by the expansion and diversification of supply sources as they are integrated in combined systems and by reducing leakage in water distribution networks. Women will be involved in designing the systems that meets their requirements.

R1A2. To build and improve small hydrologic engineering works (like water catchment, sediment retention, and flood control) using ecosystem based approach.

R1A3. To promote changes in consumer behaviour and implement technological innovations and practices in households in order to save water, improve its quality for human consumption and facilitate its storage and reuse.

R1A4. To promote improvements in the management of pollution sources affecting the quality of surface and ground water sources.

R1A5. To strengthen the capacities of the Community's Water and Sanitation Committees (CAPS) and local authorities to administrate, operate and maintain water and sanitation systems, promoting active participation of women in the decision making processes.

Activities relating to R2. Practices for the conservation and sustainable management:

R2A1. To develop and implement plans for the environmental restoration of non-productive lands of common interest (focusing on riparian areas, landslides areas, among others) with the aim to combat land degradation, increase soil infiltration and to re-establish ecosystem functions to retain and store water.

R2A2. To promote agro-ecological practices¹⁷ with a sustainable use of soil and water resources, applying climate-smart farming practices and improved pasture and cattle breeding technologies through incentive schemes for farms located in watersheds' critical areas for natural water retention and storage.

R2A3. To elaborate and implement nature protection plans promoting natural forest regeneration and management in the protected areas of Tepesomoto - La Patasta and the Somoto Canyon, including restoration of their buffer and inter-connectivity zones.

Activities relating to R3. Forest resilience:

R3A1. To strengthen forest sector partnership and institutional performance in the territory regarding monitoring of the forest cover and its phytosanitary condition, providing technical assistance to landowners to implement forest management plans, and to halt illegal logging.

R3A2. To implement forestry incentive scheme promoting sustainable forest management, natural regeneration, agro-forestry-pastoral systems and establishment of sustainable plantations with the aim to re-establish forests' function to retain and store water as well as to develop forestry activity as a sustainable source of employment and income for the local population.

R3A3. To validate and introduce forest reproductive material (germoplasm) through genetic testing and identification of seed sources adapted to local conditions and the expected future impacts of climate change.

R3A4. To implement and strengthen forest protection plans, taking into account the traditional forest management organisations of indigenous population.

R3A5. To promote specific productive initiatives for youth and women that add value to forest products and facilitate their access to markets.

Activities relating to R4. Strengthened institutional and community based management capacities for climate change adaptation with gender equity approach:

R4A1. To elaborate the diagnostic of water resources, including the inventory of water sources and recharge areas, and to establish a monitoring system of water uses, demand, and consumption.

R4A2. To establish the hydro-meteorological monitoring (including the hydro-geological) in the upper basin of the Coco River, including the monitoring of the soil and water uses (demand and consumption).

R4A3. To establish a digital platform on the monitoring of geospatial data for the territorial information management (hydro-meteorological, land use, forest cover, and carbon sinks among other).

¹⁷ Includes agriculture and cattle production, based on law no.765.

R4A4. To elaborate water balances per hydrologic unit with the aim to evaluate water availability and to analyse the water quality, as well as, to make projections according to different climate change scenarios.

R4A5. To strengthen the capacity of natural risk management in the territory by designing and implementing the early warning system of floods and droughts.

R4A6. To elaborate territorial watershed plans for climate change adaptation and to develop action plans for implementing adaptation measures at municipal level, promoting gender equity, meaning equal access to information and decision making to women and men.

R4A7. To design and implement an integrated communication, visibility and awareness raising strategy on the climate change adaptation with wording and method adjusted for different sectors of the population, promoting gender equity and women's empowerment. The strategy will include specific action plans on raising public awareness about climate change adaptation, sustainable management of ecosystems and in particular woodlands and promoting responsible environment behaviour among population in respect to protected areas and natural ecosystems and encouraging water-saving practices and the sustainable use of natural resources.

R4A8. To strengthen capability of local stakeholders to participate in coordination mechanisms (watershed committees, drinking water and sanitation committees, and other relevant collaborative bodies) and to enhance their engagement to realise decisive measures to tackle water scarcity by protecting ecosystems and sustainably managing natural resources. Active participation of women in the decision-making processes will be promoted.

4.3 Intervention logic

The intervention logic of this programme is based on closing the gap between water availability and demand in a territory affected by long-term water scarcity, so to increase the resilience of local communities to climate change and desertification. River basin management approach offers considerable potential for addressing the consequences of drought and water scarcity issues. It provides scope for analysing pressures, setting objectives and establishing cost-effective countermeasures to increase resilience of people and ecosystems to the adverse effects of climate change. The common concern of water supply underlines the need for close coordination and active participation of all interested parties in the river basin within strategic partnerships, extending beyond national and local authorities mandates, and including other main stakeholders (such as community and indigenous representatives, productive associations, and CSOs).

As climate change and human impacts at catchment scale affect water availability, the management of man-induced pressures and the restoration of natural functioning of the river basin is an essential part of this climate change adaptation programme. The operational strategy is to focus on the investments of the expected results no. 2 and 3 on the restoration of natural ecosystem functions, in particular, its ability to retain and slowly release water and to degrade pollutants. By promoting climate-smart management and production practices and applying adaptation measures combined with environmental compensations and incentives, the present programme will seek to preserve the sustainability of water resources, to secure supply of water for human consumption and production as well as to recover and protect soils and ecosystems. Additionally, the programme will increase the access and continuity of rural and urban population to secure water and appropriate sanitation (expected result no.1) based on a comprehensive diagnostic of existing water sources and their mode of utilization.

The articulation among components of the programme will be initially facilitated by the common diagnostic of water sources and strengthened by the baseline building (start-up activity), both coordinated by GIZ. Besides providing technical assistance and institutional strengthening to enhance the implementation of programme's activities, GIZ will also ensure overall coordination and articulation among programme's components. Further, it will coordinate investments in infrastructure and equipment related to water and sanitation and hydro-meteorological monitoring systems, under components 1 and 4 and possibly provide grants to the benefit of local authorities and/or civil society (e.g. indigenous and/or productive associations) to implement/participate in some programme's activities.

More specifically, the expected result no. 2 should be attained by combating land degradation and increasing natural water retention and storage capacity in the non-productive lands (like riparian areas and slopes affected by landslides) and farms located in the critical catchment zones and protected areas. The programme will provide assistance to farmers to elaborate and implement environmental friendly adaptation plans and grants for the implementation of productive adaptations within these plans. It will also promote effective functioning of protected areas by strengthening environment authority (MARENA) to enforce nature protection regulations and supporting landowners to develop alternative income generation (such as that resulting from ecotourism) according to the protected area management plan.

The activities to achieve result no. 3 will be implemented in the watershed's critical areas (outside the protected areas) to re-establish forests' function to retain soils store water and improve local climate conditions. The programme will enhance forest governance and monitoring and provide assistance and grants to forest owners to promote sustainable forest management, increase forest cover by promoting the sustainable management of forest biodiversity and strengthen sanitary condition of woodlands. The institutional performance of national forest authority INAFOR will be strengthened in the territory as regards monitoring of the forestry condition and control of illegal logging. Forestry activity as a sustainable source of employment and income for local population will be promoted.

Gradually, under the result no. 1, the programme will increase the continuity of access of rural and urban population to safe water and appropriate sanitation. Projects on improvement of water and sanitation systems will be implemented by both ENACAL (in urban areas) and FISE (in rural areas). Participation of local stakeholders in water and sanitation management/coordination committees and other forms of corporative water management will be promoted, with emphasis on empowering women in decision-making. Climate change adaptation will require more efficient use of water and the reallocation of water availability to those uses that are deemed socially as more appropriate. The programme will assist municipalities to further explore utilisation of non-conventional water resources including wastewater recycling and to improve waste management, in critical areas for water catchment. It will also promote technics at household-level for an increased reuse of water and alternative sources; e.g. rainwater and greywater harvesting, the appropriate use of irrigation reservoirs, and matching different water qualities to different uses.

The evidence shows that an appropriate river basin management response to climate change impacts can only be based on a sufficiently robust long-term monitoring network of reference sites linked to hydro-meteorological data. Target monitoring and reporting of effects is essential to identify and react to climate change signals as they emerge and to bring forward adaptation interventions as required. Indeed, monitoring and reporting are crucial elements of the present programme.

Consequently, the programme (under its result no. 4) will support INETER and ANA to establish a monitoring system that will help benchmark and track long-term climate change impacts as they materialise, and monitor water demand and long-term trends in water supply. First, it will assess how best use can be made of available data from existing networks, and how the sites with relevant long data records should be sustained over coming years as part of wider surveillance efforts. A comprehensive set of indicators at appropriate temporal and spatial scale will be developed to link phenomena and predict drought and water scarcity impacts within a forecast and early warning system.

All activities under the expected result no. 4, such as monitoring and analysis, territorial planning, communication and awareness building, aim to build conditions for the sustainability of the watershed management and climate change adaptation and strengthening capabilities for development of relevant corporative water management committees and other forms of citizens' participation. Eventually, advanced social and economic analyses should identify the most cost-effective combinations of measures to be integrated in the Territorial Adaptation Plans at municipal level under a plausible range of climate change and water supply-demand scenarios.

5 IMPLEMENTATION

5.1 Financing agreement

In order to implement this action, it is foreseen to conclude a financing agreement with the partner country, referred to in Article 184(2)(b) of Regulation (EU, Euratom) No 966/2012.

5.2 Indicative implementation period

The indicative operational implementation period of this action, during which the activities described in section 4 will be carried out and the corresponding contracts and agreements implemented, is 84 months (60 months for implementation plus 24 months for closure) from the date of entry into force of the financing agreement.

Extensions of the implementation period may be agreed by the Commission's authorising officer responsible by amending this decision and the relevant contracts and agreements; such amendments to this decision constitute technical amendments in the sense of point (i) of Article 2(3)(c) of Regulation (EU) No 236/2014.

5.2.1.1 Procurement (direct management)

Subject in generic terms, if possible	Type (works, supplies, services)	Indicative number of contracts	Indicative trimester of launch of the procedure
Evaluation and audit	services	2	02/2019 and 02/2020

5.2.1.2 Indirect management with a Member State

A part of this action may be implemented in indirect management with Germany (Deutsche Gesellschaft für Internationale Zusammenarbeit - GIZ) in accordance with Article 58(1)(c) of Regulation (EU, Euratom) No 966/2012. GIZ will bind this action to part of the PROATAS¹⁸ program, which is an ongoing programme since 2011, mainly in areas such as water and sanitation access and watershed management.

This implementation entails the following:

- investments in infrastructure and equipment related to water and sanitation and hydro-meteorological monitoring systems, under components 1 and 4;
- possibly a grant programme to benefit local authorities and other actors (e.g. indigenous and/or productive associations); and
- provision of technical assistance and institutional strengthening, as well as overall coordination and articulation of the programme's components. This assistance will be demand

¹⁸ Programme to improve efficiency in the drinking water supply and sanitation sectors (PROATAS) <https://www.giz.de/en/worldwide/13998.html>

- driven, and it will cover technical issues as well as capacities for communication, organization, and networking.
- provision of technical assistance on gender equity and women's empowerment in general and in the specific sectors.

This implementation is justified because of the technical and administrative competence that GIZ possesses. GIZ has over 30 years of experience with technical cooperation in Nicaragua promoting conservation and sustainable management of natural resources and mainstreaming adaptation to the effects of climate change as cross-cutting axe in all its activities. GIZ has long-standing cooperation relations with MARENA, INETER, MAG (Ministry of Agriculture and Livestock), INAFOR, MEM (Ministry of Energy and Mines), ENACAL and ANA, as well as municipalities and the regional governments. Its expertise results from international state-of-the-art know-how and methodological capacities to adapt this knowledge to local conditions.

The entrusted entity would carry out the following budget implementation tasks: provision of technical assistance, procurement of services, works and goods, awarding grants, monitoring, communication, and providing programme visibility.

GIZ will sign grant agreements with national counterparts that will be responsible for receiving the funds to implement the activities under the project. Each of these national partners will receive a grant from the GIZ based on its rules and regulations, and the GIZ will be responsible of the coordination of the project's implementation. The responsibility of each of these institutions, both technically and budgetary, will be clearly described in the corresponding grant agreements. GIZ will retain control of the grant beneficiaries during the implementation of the action tasks and ensure that ex-ante and ex-post necessary checks are performed to ensure sound financial management of EU funds.

The Commission authorises that the costs incurred by the entrusted entity may be recognised as eligible on the date of the signature of the financing agreement because expenditure could be needed to prepare the full implementation of the delegation agreement, in particular when it comes to the start-up activity under point 4.2.

5.2.1.3 Indirect management with the partner country

A part of this action with the objective of restoration of natural ecosystems' and forests' function (results 2 and 3) may be implemented in indirect management with the Government of Nicaragua in accordance with Article 58(1)(c) of the Regulation (EU, Euratom) No 966/2012 according to the following modalities:

The Government of Nicaragua will act as the contracting authority for the procurement and grant procedures. The Commission will control ex ante all the procurement procedures except in cases where programme estimates are applied, under which the Commission applies ex ante control for procurement contracts above EUR 100 000 (or lower, based on a risk assessment) and may apply ex post control for procurement contracts up to that threshold. The Commission will control ex ante the grant procedures for all grant contracts.

Payments are executed by the Commission except in cases where programmes estimates are applied, under which payments are executed by Government of Nicaragua for ordinary operating costs, direct labour and contracts below EUR 300 000 for procurement and for grants.

In accordance with Article 190(2)(b) of Regulation (EU, Euratom) No 966/2012 and Article 262(3) of Delegated Regulation (EU) No 1268/2012, the Government of Nicaragua shall apply procurement rules of Chapter 3 of Title IV of Part Two of Regulation (EU, Euratom) No 966/2012. These rules, as well as rules on grant procedures in accordance with Article 193 of Regulation (EU, Euratom) No 966/2012, will be laid down in the financing agreement concluded with the Government of Nicaragua.

5.3 Scope of geographical eligibility for procurement and grants

The geographical eligibility in terms of place of establishment for participating in procurement and grant award procedures and in terms of origin of supplies purchased as established in the basic act and set out in the relevant contractual documents shall apply, subject to the following provisions.

The Commission's authorising officer responsible may extend the geographical eligibility in accordance with Article 9(2)(b) of Regulation (EU) No 236/2014 on the basis of urgency or of unavailability of products and services in the markets of the countries concerned, or in other duly substantiated cases where the eligibility rules would make the realisation of this action impossible or exceedingly difficult.

5.4 Indicative budget

	EU contribution (amount in EUR)
Result 1 Access to safe water and sanitation	4 700 000
5.3.2.2. – <i>Indirect management with GIZ</i>	4 700 000
Result 2 Practices for the conservation and sustainable management	5 000 000
5.3.2.2. – <i>Indirect management with GIZ</i>	1 000 000
5.3.3.3. – <i>Indirect management with Government of Nicaragua (MARENA)</i>	4 000 000
Result 3 Resilient forest cover	6 600 000
5.3.2.2. – <i>Indirect management with GIZ</i>	1 300 000
5.3.3.3. – <i>Indirect management with Government of Nicaragua (INAFOR)</i>	5 300 000
Result 4 Strengthened institutional and community based management capacities for climate change adaptation with gender equity approach¹⁹	3 000 000
5.3.2.2. – <i>Indirect management with GIZ</i>	2 600 000

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¹⁹ Includes start-up activity, establishment of base lines, set-up of monitoring system, and communication and visibility activities of the program.

<u>5.3.3.3. – Indirect management with Government of Nicaragua (MARENA - communication under result 2)</u>	<u>200 000</u>
<u>5.3.3.3. – Indirect management with Government of Nicaragua (INAFOR - communication under result 3)</u>	<u>200 000</u>
5.7 – Evaluation, 5.10 – Audit	300 000
5.2.1.1. Procurement (direct management)	
Contingencies	400 000
5.3.2.2. – Indirect management with GIZ	
Sub-total 5.3.2.2. – Indirect management GIZ	10 000 000
Sub-total 5.3.3.3. – Indirect management with Government of Nicaragua	9 700 000
Sub-total 5.2.1.1. Procurement (direct management)	300 000
Totals	20 000 000

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The German Government is committed to an indicative joint co-financing amount of EUR 1 500 000 that will be confirmed in the Delegation Agreement between GIZ and the European Union. GIZ will be granted a maximum of 7 % for remuneration costs.

The expected co-financing from the Government of Nicaragua would be EUR 2 400 000.

5.5 Organisational set-up and responsibilities

The budget administration of the action will be shared between MARENA, INAFOR (programme estimates) and GIZ (delegated cooperation), as specified above. When necessary, inter-institutional agreements could be signed by national implementing institutions: MARENA, INAFOR, municipalities, ENACAL, FISE, INETER, and ANA. The Programme will be coordinated by MARENA and implemented through close articulation among components and thus among implementing institutions, their regional offices, and local authorities. GIZ will facilitate overall coherence and technical support for all components, coordination of chronograms and planning of activities and monitor the implementation.

For the planning and supervision of the action, a Steering Committee will meet at least twice a year, and as often as necessary, for which an internal regulation will be elaborated. The Committee will be composed by representatives of implementing institutions, GIZ, and the EU Delegation, as well as the Ministry of Foreign Affairs of Nicaragua. Upon request of the members, the Committee could invite to its meeting representatives of other institutions involved in or cooperating with the project. The Steering Committee will be assisted by a Technical Coordination Committee integrating local delegates of the above national institutions, representatives of local authorities directly involved in the programme implementation. MARENA will coordinate both, Steering and Technical Coordination Committees.

The implementing institutions will share the implementation of activities as follows:

GIZ will facilitate the implementation of activities relating to result 1: 'Access to safe water and sanitation' working with relevant national institutions involved in water management –

ENACAL, FISE, and integrating ANA and municipalities; as well as relating to result 4: 'Monitoring, communication, and sustainability' working with INETER and ANA, and integrating municipalities and other stakeholders.

Main activities relating to result 2: 'Practices for the conservation and sustainable management' and result 3: 'Forest resilience', will be implemented under two programme estimates with MARENA and INAFOR respectively. GIZ will provide technical support and guidance. When necessary GIZ will provide grants to local authorities and/or other key local stakeholders for activities directly implemented by them.

Local coordination set up:

In order to facilitate the coordination among sectoral institutions (ENACAL, FISE, ANA, INETER, MARENA, INAFOR), municipalities (7), watershed committees (4), community committees for water and sanitation (12) and indigenous communities (2), GIZ and MARENA will establish an office located in the municipality of Somoto. This office will be the program headquarters and it will host the Technical Coordination Committee. MARENA is the leader of the program, and will set up coordination and participatory mechanisms working with INIFOM²⁰ in municipalities, with ANA in community-level committees, and with INAFOR in indigenous communities.

5.6 Performance monitoring and reporting

The day-to-day technical and financial monitoring of the implementation of this programme will be a continuous process and part of the implementing partner's responsibilities. This requires that the implementing partners establish a permanent internal, technical and financial monitoring system for the action and elaborate progress and final reports. Every report shall provide an accurate account of implementation of the action, difficulties encountered, changes introduced, as well as the degree of achievement of its results (outputs and direct outcomes) as measured by corresponding indicators, using as reference the logframe matrix. The report shall be laid out in such a way as to allow monitoring of the means envisaged and employed and of the budget details for the action. The final report, narrative and financial, will cover the entire period of the action implementation. Progress Report should be reviewed and approved by the planning and supervision bodies defined in the organizational set up.

The Commission may undertake additional project monitoring visits both through its staff and through independent consultants recruited directly by the Commission for Independent Monitoring Reviews (or recruited by the responsible agent contracted by the Commission for implementing such reviews).

The setting up of the monitoring system will be ensured by GIZ through the following steps in the start-up phase:

- Review, extension, and adaptation of the matrix of indicators,
- Conducting the baseline study;
- Design and implementation of the monitoring system;

In the implementation phase, GIZ will ensure:

²⁰ National Institute for Municipal Development

- Technical and management support for enhancing institutional performance
- Management of the monitoring system;
- Analysis of monitoring data and production of periodic monitoring reports; and
- Conducting impact assessment.

Specific indicators for this programme, their source of information and institutions responsible for providing them are provided in the logical framework. The identified gender sensitive indicators will be monitored and the relevant indicators will be disaggregated by sex.

5.7 Evaluation

Having regard to the nature of the action, a mid-term and final evaluations will be carried out for this action or its components via independent consultants contracted by the Commission.

Mid-term and final evaluation will be carried out for problem solving and learning purposes, in particular with respect to the level of execution and expected impact of the action.

Final evaluation will be carried out for accountability and learning purposes at various levels (including for policy revision), taking into account in particular the fact that this action is the first foreseen in the third priority sector (Climate Change) of the EU CSP for Nicaragua.

The Commission shall inform the implementing partner at least 15 days in advance of the dates foreseen for the evaluation missions. The implementing partner and the national institutions shall collaborate efficiently and effectively with the evaluation experts, and inter alia provide them with all necessary information and documentation, as well as access to the project premises and activities.

The evaluation reports shall be shared with the partner country and other key stakeholders. The implementing partner and the Commission shall analyse the conclusions and recommendations of the evaluations and, where appropriate, in agreement with the partner country, jointly decide on the follow-up actions to be taken and any adjustments necessary, including, if indicated, the reorientation of the project.

Indicatively, one contract for evaluation services shall be concluded tentatively in the second trimester 2020.

5.8 Audit

Without prejudice to the obligations applicable to contracts concluded for the implementation of this action, the Commission may, on the basis of a risk assessment, contract independent audits or expenditure verification assignments for one or several contracts or agreements.

Indicatively, one or two contracts for audit services shall be concluded tentatively under a framework contract in 2019.

5.9 Communication and visibility

Communication and visibility of the EU is a legal obligation for all external actions funded by the EU.

This action shall contain communication and visibility measures which shall be based on a specific Communication and Visibility Plan of the Action, will be coordinated by GIZ and it will be elaborated at the start of implementation, approved by the EU Delegation in Nicaragua and supported with the budget indicated in section 5.3.3.3 above.

In terms of legal obligations on communication and visibility, the measures shall be implemented by the Commission, the partner country, contractors, grant beneficiaries and/or entrusted entities. Appropriate contractual obligations shall be included in, respectively, the financing agreement, procurement and grant contracts, and delegation agreements.

The Communication and Visibility Manual for European Union External Action shall be used to establish the Communication and Visibility Plan of the Action and the appropriate contractual obligations.

APPENDIX - INDICATIVE LOGFRAME MATRIX²¹

The activities, the expected outputs and all the indicators, targets and baselines included in the logframe matrix are indicative and may be updated during the implementation of the action, no amendment being required to the financing decision. It was not possible to quantify some baselines and targets at formulation stage due to lack of statistics. The geographic area of the programme intervention refers to a watershed covering parts of 7 municipalities. So far, the data are collected only by administrative departments/municipalities. However, the expected changes/progress at level of impacts, outcomes and outputs were defined. The baselines will be established and targets quantified at the start-up of the project within the set-up of monitoring system for the monitoring and evaluation of indicators (to be implemented by GIZ). The indicative logframe matrix will evolve during the lifetime of the action: new lines may be added for including the activities as well as new columns for intermediary targets (milestones) for the output and outcome indicators whenever it is relevant for monitoring and reporting purposes. Note also that indicators will be disaggregated by sex whenever relevant.

If not specified differently, indicators refer to the geographic area of the programme intervention.

	Results chain	Indicators	Baselines (incl. reference year)	Targets (incl. ref. year)	Sources and means of verification	Assumptions
Overall objective: Impact	To strengthen resilience of communities in the prioritised watersheds of Nicaragua to the effects of climate change, such as droughts and floods, in particular as it relates to food security, access to safe drinking water and sanitation, and ecosystems' functions.	<p>O.1. Number of km² of watersheds in Nicaragua with integrated water resource management plans implemented.*</p> <p>O.2. Proportion of population using an improved²² drinking water source. ** matching with EU RF #22L1, disaggregated by sex.</p> <p>O.3. Proportion of population using an improved sanitation facility** matching with EU RF #25L1, disaggregated by sex.</p> <p>O.4. Surface (ha) of infiltration and ground water recharge areas under sustainable land management.</p>	<p>O.1. TBC²³</p> <p>O.2. 19 % in 2017</p> <p>O.3.TBC</p> <p>O.4. 0 ha in 2017</p>	<p>O.1. BL + 940 km² in 2022</p> <p>O.2. TBC (BL+ 32,462 persons)</p> <p>O.3. TBC (BL + 4,369 persons)</p> <p>O.4. 5,500ha in 2022</p>	<p>O.1. MARENA institutional data</p> <p>O.2. Institutional data of ENACAL, FISE, municipalities, SIASAR.</p> <p>O.3. Institutional data of ENACAL, FISE, municipalities</p> <p>O.4. Programme periodic survey</p>	

²¹ Indicators aligned with the relevant programming document are marked with '*' and indicators aligned to the EU Results Framework with '**'.

²² Refers to new access as well as improved continuity (hours of supply) and quality

²³ Up to now the following projects were working in 8 watersheds: PROATAS-GIZ: Mayales (69- 95256), Río Sapoa/Brito (70- 95337554); ACDI-MARENA-PIMCHAS-PAGRICC-BID-COSUDE: Río Viejo (69-952257); ACDI-MARENA-PIMCHAS: Río Estelí (45-95618); ACDI-MARENA-PIMCHAS-PNUD/GEF: Estero Real (60-9533768); ACDI-MARENA-PIMCHAS: Negro (58-9533762); ENEL-BID-COSUDE: Lago de Apanás

Specific objective: Outcome	To contribute to the adaptation of men, women and communities present in the upper basin of the Coco River to the effects of climate change and increased climate variability.	S.1. Rate of net forest cover change** matching with EU RF #23L1. S.2. Surface (ha) of protected areas managed. ** matching with EU RF #24L2 S.3. Tons of carbon captured by increased protection and enhancement of sinks and reservoirs of GHGs (avoided deforestation).	S.1. 17.5 % in 2017 S.2. 0 ha in 2017 S.3 TBC	S.1. 25.23 % in 2022 S.2. TBC (2,770 ha in 2022) S.3 TBC	S.1. Forest inventory – INAFOR; S.2. Institutional data of MARENA S.3. Reports of INAFOR and GIZ	Proposed water and land management strategies will be implemented. Climate risks remain at current level. The relevant legal framework will be strengthened and enforced.
	Outputs	R1. Increased availability and continuity of access of population to safe water and sanitation with gender-equity approach. R2. Implemented environment-friendly productive practices promoting restoration of ecosystems and preventing further biodiversity loss and deforestation.	1.1. Water supply per system (average hours per day). 1.2. Number of household with access to water and sanitation services 1.3. Number of households implementing technologies saving and reusing water. 1.4. Proportion of rural water and sanitation systems designed within the programme integrating women´s recommendations. 2.1. Number of water sources under protection and restauration scheme. 2.2. Surface of land (ha) under agro-ecological farming plan promoting environmental restauration in areas of water retention and storage.	1.1. urban: 12 rural: 10h/day in 2017 1.2. TBC 1.3. TBC 1.4. TBC 2.1. TBC 2.2. TBC, estimated 0 ha	1.1.urban:16 rural:12 h/d in 2022 1.2. BL+ 6,242 (water) + 840 (sanitation) households ²⁴ 1.3. TBD 1.4. 100 % 2.1. BL+200 sources 2.2. 5,500 ha	1.1., 1.2.: Institutional data of ENACAL, FISE, municipalities 1.3. Programme periodic survey 1.4.: Reports of public consultations of ENACAL and FISE. 2.1. , 2.2.: Programme periodic survey and implementation reports.

²⁴ Water: urban areas: 5,567 households with improved service + 410 with new connection; rural areas: 265 with a new access. Total of 6,242 households.
Sanitation: urban areas: 528 households with new access; rural areas: rural areas: 312 households with a new access. Total of 840 households.

						production patterns.
R3. Increased forest resilience.	<p>3.1. Natural forest area (ha) under a forest management plan.</p> <p>3.2. Surface of land (ha) under natural regeneration.</p> <p>3.3. Surface of land (ha) under an agroforestry system.</p> <p>3.4. Surface (ha) of forest plantations.</p>	<p>3.1. TBC</p> <p>3.2. TBC</p> <p>3.3. TBC</p> <p>3.4. TBC</p>	<p>3.1. BL+1,500ha</p> <p>3.2. BL+2,000 ha</p> <p>3.3. BL+1,500ha</p> <p>3.4. BL+1,000ha</p>	3.1., 3.4. : Forest inventory and institutional data of INAFOR.	No major forest fire and drought will affect intervention area	
R4. Strengthened institutional and community based management capacities for climate change adaptation with gender equity approach.	<p>4.1. Number of hydro meteorological stations providing information to the national network.</p> <p>4.2. Number of territorial plans for adaptation to climate change integrating women's recommendations on vulnerability assessments implemented.</p> <p>4.3. Proportion of directive posts headed by women in the reactivated Watershed Committees.</p>	<p>4.1. 7 in 2017 all meteorologic al stations</p> <p>4.2. 0 plans in 2017</p> <p>4.3. 10 % / 2017</p>	<p>4.1. 20 in 2022 11 meteo. and 9 hydrometeo- rological</p> <p>4.2. 7 plans in 2022</p> <p>4.3. 50 % / 2022</p>	<p>4.1. Programme periodic survey;</p> <p>4.2. Institutional data of municipalities and reports of public consultations.</p> <p>4.3. Institutional data of Water Management Committees.</p>	The sectoral institutions and local governments make use of territorial planning instruments and have capacities and resources to encourage the appropriate use of land.	