7.0 Nicaragua

BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (Federal Ministry for Economic Cooperation and Development) (Germany)
CATHALAC	Centro del Agua del Trópico Humedo para America Latina y el Caribe (Water Center for the Humid Tropics of Latin America and the Caribbean)
CATIE	Centro Agronómico Tropical de Investigación y Enseñanza (Tropical Agriculture Research and Higher Education Centre) (Spain)
CCAD	Comisión Centroamericana de Ambiente y Desarrollo (Central American Commission for Environment and Development)
CECOCAFEN	La Central de Cooperativas Cafetaleras del Norte (Coffee Cooperatives Central Association in the Northern Regions)
CIA	U.S. Central Intelligence Agency
CIAT	International Center for Tropical Agriculture
CIFOR	Center for International Forestry Research
DFID	U.K. Department for International Development
ECLAC	United Nations Economic Commission for Latin America and the Caribbean
EU	European Union
FAO	Food and Agriculture Organization
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (Germany)
IADB	Inter-American Development Bank
INIA	Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (National Institute for Research and Technology in Agriculture and Food) (Spain)
MARENA	Ministerio del Ambiente y los Recursos Naturales (Ministry for Environment and Natural Resources)
PRODECOOP	La Cooperativa de Servicios Multiples de Productores de Cafe Organico Certificado Las Segovias
RAAN	Región Autónoma Atlántico Norte (North Atlantic Autonomous Region)
RIOCC	Red Iberoamericana de Oficinas de Cambio Climático (Ibero-American Network of Climate Change Offices)
SICA	Sistema de la Integración Centroamericana (Central American Integration System)
SIECA	Sistema de Integración Económica Centroamericana (Central American Economic Integration System)

UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
UNOPS	United Nations Office for Project Services
USDS	United States Department of State

The Republic of Nicaragua is the largest country in Central America, with an area of 129,494 square kilometers (USDS, 2011).[149] Home to most of the Central American Volcanic Arc, the geographical variation in the country—from the Pacific Lowlands to the Amerrique Mountains and the Mosquito Coast along the Atlantic Lowlands—has contributed to Nicaragua's status as a biodiversity hotspot. The country's abundant resources support most of its economy, about one-third of which is derived from agriculture, timber and fishing (USDS, 2011). Manufacturing (particularly textiles and apparel), services (retail, hotels and restaurants) and remittances also form a significant portion of the country's economy (CIA, 2011; USDS, 2011). Social and economic conditions have improved in Nicaragua since 1991 (when the Sandinistas government ended), with its ranking on the UN Human Development Index rising by 25 per cent between 1990 and 2010. Still, Nicaragua remains one of the poorest countries in Central America, with a per capita Gross Domestic Product in 2010 estimated to be US$2,900, and economic gains are uneven within the population (USDS, 2011).

A. Adaptation Needs and Priorities

Nicaragua experiences a range of climate hazards including tropical cyclones, droughts, extreme rainfall events (via tropical storms) and floods. While no clear trend has emerged as of yet with respect to the occurrence of tropical cyclones, drought events often occur in relation to El Niño, particularly on the Pacific side of the country. The frequency of these events appears to be increasing (UNDP, 2010).

Temperature projections indicate that country's the mean annual temperature will rise by 1.2° to 4.5°C by 2090, and that there will be more rapid warming in the northeast of the country. Rainfall projections show no consistent direction of change, but are mostly

[149] The population of Nicaragua is forecasted to reach 5,666,301 in July 2011 (CIA, 2011).

negative, with the strongest decreasing signal occurring for rainfall during the period of June to August, the wettest season of the year. Extreme rainfall events are not projected to increase, although such a trend is currently observed (UNDP, 2010).

In Nicaragua's First National Communication to the United Nations Framework Convention on Climate Change (UNFCCC), the government identifies agriculture and livestock, energy, ecosystems, human health and water as priority sectors (República de Nicaragua, 2001). It identified priority actions in the water sector as being: water conservation; watershed management; infrastructure for water deviation; avoidance of deforestation; land planning measures; solid and liquid waste management; improving the country's legal framework; implementation of water action plan; and decentralization and promotion of integrated use of watersheds.

In addition, Nicaragua developed a "National Action Plan on Climate Change" in 2003 (MARENA, 2003) that looks at land use, forestry, agriculture, energy and water; adaptation is addressed only in the context of agriculture and water. Similarly, a general governmental document on climate change discusses water, agriculture, forests, energy and coastal and marine resources as affected sectors (MARENA 2008a). Priorities identified in this document are, among other issues: integrated watershed management, conservation of protected areas, biodiversity conservation, reduction of environmental contamination, reforestation (with specified national targets), integrated marine and coastal ecosystems management, sustainable land use and citizen participation as key actions that help to adapt to a changing climate.

In 2010, the government elaborated the "National Strategy and Action Plan on Environment and Climate Change" for the years 2010 to 2015. It proposes actions related to climate information, as well as the water, agriculture, forestry and health sectors (República de Nicaragua, 2010). Specific priority adaptation actions noted in this plan are:

- *Water* – Building water wells and aqueducts; water capture and storage; and watershed adaptation, including riverbank protection.
- *Agriculture* – Resistant seeds, agricultural diversification, new crops and new economic activities.
- *Climate information* – Strengthening monitoring and information collection, and early warning systems and response capacity.

Further government documents include: guidelines for the development of an adaptation strategy for forest ecosystems (CAHALAC, 2009); a vulnerability assessment for the Región Autónoma Atlántico Norte (RAAN; North Atlantic Autonomous Region) that discusses impacts on water, agriculture, fisheries, natural resources and biodiversity, human systems, coasts and health (Milan Perez and Martinez Ortiz, 2010); and a United Nations Development Programme (UNDP)-led capacity building initiative that involved vulnerability assessments for water, health and coasts (described below). Recently, the Ministry for Environment and Natural Resources

(MARENA) states that biodiversity (including forests), water (in particular related to agriculture), health and coasts are priority sectors in regards to adaptation. This statement suggests an extension of the strong emphasis on adaptation in the agriculture and water sectors that has been witnessed in the past.[150]

B. National Level Policies and Strategic Documents

As noted above, Nicaragua has developed various polices and strategies that address needs in sectors vulnerable to climate change. First, in Nicaragua's "National Plan of Human Development," adaptation to climate change is mentioned under three of eight strategic programs: Productive and Commercial Strategy; Environmental Sustainability and Forest Development; and Disaster Risk Management. It does not take center stage in any of these programs, but it is mentioned as a factor to be taken into account in the development and execution of strategies and policies related to agriculture, environment, forestry and disaster management (República de Nicaragua 2009).

Second, the 2003 "National Action Plan on Climate Change" (MARENA, 2003), which does not appear to have been implemented, gives attention to adaptation, particularly with respect to agriculture and water. Third, the "National Strategy and Action Plan on Environment and Climate Change" (República de Nicaragua, 2010) describes key environmental challenges and sets out an agenda of actions for the period of 2010 to 2015 in the following areas: environmental education; defense and protection of the environment and natural resources; conservation, recovery and use of water sources; prevention and mitigation of and adaptation to climate change; and sustainable land use. In adaptation, measures relating to water, agriculture, climate information and disaster risk reduction are proposed. Lastly, an adaptation strategy was elaborated for a specific watershed, with a view to also informing policy decisions in other regions (MARENA 2008b). It identifies water and agriculture as key sectors (MARENA, 2008b). This prioritization is relevant for the national level as the watershed was selected with a view to matching sectors that are of country-wide importance.

The Climate Change Directorate of the Ministry for Environment and Natural Resources (MARENA) is Nicaragua's UNFCCC focal point, and all climate change related work of the government appears to be concentrated in a relatively small team within MARENA. Along with its various national strategies, Nicaragua has finalized one National Communication in conjunction with MARENA (República de Nicaragua, 2001). A second National Communication was expected to be published in late 2009 but is not yet available. This document will, among other things, contain an adaptation strategy for coffee production in two regions (UNDP 2010).

[150] Personal communication, representative of MARENA, February 22, 2011.

At a regional level, Nicaragua is a member of the Central American Integration System (SICA), the institutional framework for the integration of Central American states, and of the Central American Commission for Environment and Development (CCAD), a committee which brings together environmental ministries of SICA member states. Under the auspices of SICA and CCAD, a regional climate change strategy was developed in 2010 (CCAD and SICA, 2010). The strategy summarizes climate information and sectoral vulnerabilities and proposes six strategic areas, of which one is themed "Vulnerability and adaptation to climate variability and change, and risk management." Nine strategic objectives with over 150 measures relating to disaster risk reduction, agriculture and food security, forest ecosystems and biodiversity, water, health, coastal-marine systems, tourism, indigenous people and public infrastructure are mentioned under this theme. Other strategic areas are: mitigation; capacity building; education, awareness raising, communication and participation; technology transfer; and international negotiations and management.

Table 1: Key Government Policies and Reports reflecting Adaptation Needs, Priorities and Planned Actions

Name of Policy Action		Government Division Responsible	Status	Sector(s) of Focus	Summary description
1.	First National Communication to the UNFCCC	Government of Nicaragua	Released March 2001	Multi-sectoral	On adaptation, it presents available results of assessments on economic impacts, impacts on ecosystems, health and water, as well as adaptation measures for the latter sector.
2.	National Action Plan on Climate Change	Ministry for Environment and Natural Resources	Published August 2003	Multi-sectoral	Presents a national strategy on both mitigation and adaptation, containing vulnerability information and priority adaptation measures for agriculture and water. The plan does not appear to have been implemented.
3.	Adaptation to Climate Change Strategy for Water Resources and Agriculture for Watershed #64	Ministry for Environment and Natural Resources	Published 2008	Freshwater supply; Agriculture; Watershed management	Strategic document elaborated in the context of a regional adaptation capacity building project implemented by CATHALAC. Even though it focuses on one watershed, the results are meant to inform broader policy decisions.
4.	National Human Development Plan, 2009-2011	Government of Nicaragua	Released September 2009	Multi-sectoral	Sets out eight strategic programs, of which the following three mention climate change as a factor to be taken into account: Productive and Commercial Strategy, subsection on agriculture; Environmental Sustainability and Forest Development; and Disaster Risk Management.
5.	National Strategy on Environment and Climate Change (2010 – 2015)	Government of Nicaragua	2010	Multi-sectoral	Describes the key environmental challenges and sets out an agenda of key actions for the period 2010 to 2015 in the following areas: environmental education; defense and protection of the environment and natural resources;

Name of Policy Action		Government Division Responsible	Status	Sector(s) of Focus	Summary description
					conservation, recovery and use of water sources; prevention and mitigation of and adaptation to climate change; and sustainable land use. In adaptation, measures relating to water, agriculture, climate information and disaster risk reduction are proposed.
6.	Second National Communication to the UNFCCC	Ministry for Environment and Natural Resources	Forthcoming	Freshwater supply; Agriculture	This document is expected to focus its adaptation section on the water and agricultural sectors. There is a specific focus on coffee cultures and adaptation measures in this area.

C. Current Adaptation Action

Nicaragua has a very high level of adaptation project activity ongoing relative to other Central American countries. This programming has so far largely focused on capacity building at the national and sub-national levels, as well as research, mainly on water and agriculture—the country's implicit priority sectors. However, two important projects involving more specific measures, including infrastructure investments, have been approved recently. They are financed by the Inter-American Development Bank (IADB) and the Adaptation Fund and will be implemented over the next five years. As with previous initiatives, they tend to focus on agriculture and water. Other organizations, like Oxfam, are involved in community-level initiatives that are helping to build adaptive capacity.

Table 2: Current Adaptation Action in Nicaragua

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
National Actions								
1.	Local and Regional Environmental Management for the Management of Natural Resources and Provision of Environmental Services[151]	The program is composed of activities around five interrelated components: a) basin management that focuses on risk management, b) equal access to potable water and sanitation; c) provision of renewable energy to rural communities; d) promotion of productive agroforestry	Spain, through the MDG Achievement Fund *Budget:*	MARENA and other government ministries, local authorities, UNICEF, UNDP, FAO	Capacity building; Research; Knowledge communicatio n; Field implementati	2008–2011	Ecosystem conservation; Watershed management; Energy; Forestry	Bosawas Biosphere Reserve

[151] MDG Fund, http://www.mdgfund.org/program/localandregionalenvironmentalmanagementmanagementnaturalresourcesandprovisionenvironmentalse

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
		systems which are appropriate for the ecosystems of the area and generating income; and e) research, training, and communication.	US$4.5 million		on			
2.	Environmental Program for Disaster Risk and Climate Change Management[152]	This project will improve risk management, primarily at the municipal level, in the areas of risk identification and reduction and the strengthening of governance. It will also support agricultural producers to adapt to climate change.	IADB	MARENA	Capacity building; Infrastructure	2010–2015	Disaster risk management; Agriculture	National
3.	Reduction of Risks and Vulnerability Based on Flooding and Droughts in the Estero Real Watershed[153]	Reduce flood and drought risks in the Estero Real watershed, through water storage, strengthening climate resilient agro-ecological practices, enhancing institutional capacities and disseminating results and lessons-learned	Adaptation Fund *Budget:* US$5,500,950	UNDP, MARENA	Capacity building; Field implementation	2011–2015	Disaster risk management	Estero Real Watershed
Participation in Regional and Global Actions								
4.	Climate Change Adaptation and Integration into Integrated Water Resource Management[154]	Water resource managers and communities in general, are able to improve their capacity to integrate climate change adaptation into their local development plans, using their own local knowledge enhancement and individual capacity building.	UNEP	UNEP, CATIE, CATHALAC	Capacity building; Policy formation and integration	2005–2009	Freshwater supply	*Regional:* Guatemala, Honduras, Nicaragua
			In Nicaragua: Community consultations in Bluefields.					
5.	Preparedness for Climate Change[155]	The aim of this program was for the Red Cross and Red Crescent National Societies in countries particularly vulnerable to climate change to gain a better understanding of	Red Cross/Red Crescent Climate	National Red Cross/Red Crescent Societies	Capacity building; Policy formation and	Phase 1: 2006–2009 Phase 2: ongoing	Disaster risk management	*Global:* 39 countries *In Phase 1:* Costa Rica, El

[152] IADB, http://www.iadb.org/en/projects/project,1303.html?id=NI-L1048
[153] Adaptation Fund, http://www.adaptation-fund.org/project/1331-reduction-risks-and-vulnerability-based-flooding-and-droughts-estero-real-river-watersh
[154] UNEP, http://www.cep.unep.org/meetings-events/5th-lbs-istac/5th_lbs_istac_documents/cathalac-2009-climate-change-adaptation-in-iwrm-en.pdf
[155] IFRC, http://www.climatecentre.org/site/preparedness-for-climate-change-programme

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
		climate change and its impacts to identify country-specific adaptation measures in line with risks. Activities could include organizing a workshop on risks, assessment of risks through preparation of a background document, capacity building programs, and developing climate change resilient plans.	Centre		integration			Salvador, Guatemala, Honduras, Nicaragua
			In Nicaragua: All four steps of the project have been completed.					
6.	Adaptation for Smallholders to Climate Change (AdapCC)	This public–private partnership supports coffee and tea farmers of Cafédirect's supply chain in developing strategies to cope with the risks and impacts of climate change.	BMZ	Cafédirect, Más Café	Research; Field implementation	2007–2010	Agriculture; Trade	*Global:* Kenya, Mexico, Nicaragua, Peru, Tanzania, Uganda
			In Nicaragua: The project looked at drought, landslides and pests, their impacts and adaptation strategies in Nicaragua.					
7.	The Economics of Climate Change in Central America - Phase II[156]	In the second phase of this project an economic evaluation of the impacts of climate change in central America will be undertaken. The aims of the project are to foster a dialogue on different national actions and policy options in order that Central America can meet the climate change challenge. In addition, this project includes a component focused on the impact of climate change in coastal areas–C3A (Cambio Climatico en las Coastas de America Latina y Caribe).	IADB, UK, Denmark, Spain, EU, Germany	ECLAC, CCAD, SIECA	Policy formation and integration; Knowledge communication	2008–2010	Government; Coastal zone management	*Regional*: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama
			In Nicaragua: A crop impact study for agriculture has been undertaken and published.					
8.	Capacity Development for Policy Makers: Addressing	The project is a targeted capacity development initiative that supports two	United Nations	UNDP	Capacity building;	2008–2010	Government	*Global:* 19

[156] ECLAC, http://www.eclac.org/mexico/cambioclimatico/index.html

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
	climate change in key sectors[157]	goals: 1. To increase national capacity to co-ordinate Ministerial views for more effective participation in the UNFCCC process; and 2. To assess investment and financial flows to address climate change for selected key sectors. As a result of this project, both the technical understanding of key climate change issues and their economic and policy implications within the context of the Convention will be enhanced.	Foundation; Switzerland; Finland; Spain; and Norway *Budget:* US$6,953,413		Policy formation and integration; Knowledge communication			countries[158] including Costa Rica, Honduras, Nicaragua
			In Nicaragua: Vulnerability assessments were undertaken for health, water and coasts. A national inter-ministerial dialogue on climate change was held to discuss sectoral impacts and financial flows to fund climate change action.[159]					
9.	Integrating Climate Change Risks and Opportunities into National Development Processes and United Nations Country Programming[160]	The purpose of the project was to develop the capacity of UN staff and Government stakeholders to integrate risks and opportunities of climate change in national programming and development policies, such as their United Nations Development Assistance Framework, sectoral programs, and development plans.	Spain *Budget:* US$1.2 million	UNDP	Policy formation and integration	2008–2010 (closed)	Government	*Global*: Cape Verde, Colombia, El Salvador, Malawi and Nicaragua
			In Nicaragua: The project involved the development of a climate profile, institutional mapping, as well as an evaluation of the UNDAF and the National Human Development Plan in terms of climate change mainstreaming.					
10.	Climate Policy 2012: Extension of the global project "Capacity Development for Policy Makers to Address Climate Change"[161]	The UNDP Regional Bureau for Latin America and the Caribbean has expanded on the global project, "Capacity Development for Policy Makers to Address Climate Change" in the LAC region to provide technical support to national policy	Spain, UNDP *Budget:* US$3.6 million	UNDP	Capacity building; Policy formation and integration	2009–2011	Government	*LAC Region*[162]: Including Costa Rica, El Salvador, Guatemala, Honduras,

[157] UNDP, http://www.undp.org/climatechange/capacity-development.html
[158] These countries are Algeria, Bangladesh, Bolivia, Colombia, Costa Rica, Dominican Republic, Ecuador, Gambia, Honduras, Liberia, Namibia, Nepal, Nicaragua, Niger, Paraguay, Peru, Saint Lucia, Togo, Turkmenistan and Uruguay.
[159] UNDP, http://www.undpcc.org/content/nicaragua-en.aspx
[160] http://www.adaptationlearning.net/project/integrating-climate-change-risks-and-opportunities-national-development-processes-and-unite-2 and UNDP, http://www.undp.org/climatechange/integrating_cc_risks.shtml
[161] UNDP, http://www.undpcc.org/content/act_latin-en.aspx and http://www.undp.org/climatechange/docs/EEG_Flyer_EN.pdf

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
		makers and its Country Offices and strengthen capacity on budgetary issues related to the post-2012 climate regime. Activities include technical backstopping for countries that begin to consider adaptation to climate change in their National Development Plans.						Mexico, Nicaragua, Panama
			In Nicaragua: See above description for the project "Capacity Development for Policy Makers: Addressing climate change in key sectors."					
11.	Climate Change Vulnerability Evaluation of Coastal and Marine Areas[163]	This project is part of the "Ibero-American Programme on the Evaluation of Impacts, Vulnerability and Adaptation to Climate Change" (PIACC) and aims to determine the impacts of climate change on the coasts of any country in Spanish and Portuguese speaking countries of Latin America and the Caribbean. It has a particular focus on the dynamics of beaches, estuaries, lagoons, deltas, cliffs and dunes, coastal erosion, flood risks and coastal infrastructure. This initiative is linked to the project "Economics of Climate Change in Central America - Phase II"[164] funded by IADB, UK, Denmark, Spain, EU and Germany.	Spain	ECLAC, University of Cantabria, national counterparts	Capacity building; Assessment; Knowledge communication	2009–2011	Coastal zone management	Most RIOCC countries,[165] including all in Central America
			In Nicaragua: Further information required.					
12.	Mitigation and Adaptation to Climate Change in Sustainable Forest	Part of PIACC, this project aims to generate new information and knowledge and strengthen the capacity of research	Spain	INIA, CIFOR, CATIE, Polytechnical	Capacity building; Research;	2009–2011	Forestry	RIOCC countries

[162] Countries include Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela

[163] RIOCC, http://www.lariocc.net/riocc_principal/es/proyectos_iniciativas/proy_marc_piacc.htm

[164] ECLAC, http://www.eclac.org/mexico/cambioclimatico/index.html

[165] The 21 member countries of RIOCC are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Portugal, Spain, Uruguay and Venezuela. Paraguay and Uruguay are not involved in this initiative.

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
	Management in Ibero-America[166]	institutions in the forestry sector on linking sustainable forest management with adaptation and mitigation to climate change. This includes strengthening specific research activities, developing and disseminating methodologies and case studies, strengthening human resources and fostering the representation of the forest sector in the regional and international dialogue.		University of Madrid (UPM)	Knowledge communicatio n			
			In Nicaragua: Further information required.					
13.	Coffee Under Pressure: Climate change and adaptation in Mesoamerica[167]	Evaluating the impact of climate change on coffee in Central America and identifying viable adaptation options for rural communities	Green Mountain Coffee Roasters	CIAT	Assessment	2009–2014	Agriculture	*Regional:* Costa Rica, El Salvador, Guatemala, Mexico, Nicaragua
			In Nicaragua: Analysis of climate change impacts on suitable locations for coffee production; identification of adaptation options.					
14.	Climate Risk Management Technical Assistance Support Project: Phase II[168]	The project aims at increasing in-country capacities to manage current and future climate risks.	Sweden through SIDA, UNDP core finance	UNDP	Policy formation and integration	2010–2011	Multi-sectoral	*Global:* 16 countries[169] including Honduras, Nicaragua
			In Nicaragua: The project involves a literature review on current and future climate risks and risk management options, as well as a focused risk assessment of the health sector. Scientific research, community consultations and participatory methods are being applied.					

[166] Proyecto MIA, http://www.proyectomia.com/
[167] CIAT, http://dapa.ciat.cgiar.org/cup-coffee-under-pression-adaptacion-del-cafe-al-cambio-climatico-en-centroamerica
[168] UNDP, http://www.undp.org/cpr/documents/disaster/3Disaster%20Risk%20Reduction%20-%20Climate%20Risk%20Management.pdf
[169] These countries are Bangladesh, Bhutan, Dominican Republic, Honduras, India, Kenya, Maldives, Mongolia, Nepal, Nicaragua, Niger, Pakistan, Papua New Guinea, Peru, Timor-Leste and Uganda.

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
			• *Implementing Agency:* International Institute for Sustainable Development • *Priority sector:* Health					
15.	Integrating Climate Change Adaptation into National Development Processes in Latin America and the Caribbean	Build climate resilience of vulnerable human and ecological systems in the region by integrating adaptation options into national planning processes and building the associated capacity of key regional and national institutions. The project will: undertake impact and vulnerability assessments; identify good practices and gaps in integrating adaptation into policy and plans; and support adaptation planning and its integration into national development processes. It will focus on the most vulnerable sectors and ecosystems, especially water and agriculture.	Spain *Budget:* US$4,375,233	UNEP	Capacity building; Policy formation and integration	2010–2013	Government; Agriculture; Freshwater supply	*LAC Region:* Phase 1: 19 RIOCC countries[170] Phase 2: 3-5 countries (Dominican Republic 1st country selected)
			In Nicaragua: Further information required.					
16.	Peace Corps Renewable Energy and Climate Change Initiative[171]	Across the Americas the Peace Corps will, among other things, increase municipal, school and communities' awareness and knowledge of climate change (including adaptation) and support community-led projects, including on adaptation.	United States Department of State (USDS)	U.S. Peace Corps, USDS	Community-based adaptation; Knowledge communication	Ongoing	Energy	*LAC Region:* Costa Rica, Dominican Republic, El Salvador, Guatemala, Guyana, Honduras, Nicaragua, Panama, Paraguay, Peru, Suriname
			In Nicaragua: Further information required.					

[170] The 19 RIOCC countries are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.

[171] ECPA, http://www.ecpamericas.org/initiatives/default.aspx?id=35

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
17.	Boots on the Ground[172]	Strengthening the capacities of government agencies for policy support on climate change, while promoting perspectives and frameworks that encourage a better integration of development and climate change agendas; empowering governments to articulate their needs in negotiations; and advising them on the steps to transform economies to low emission, climate resilient development.	UNDP	UNDP	Capacity building	2011–2013	Government	*Global:* Nicaragua and 25 other countries worldwide
			In Nicaragua: A national advisor has been hired to achieve the above objectives.					
18.	Integrated Coastal Management with Special Emphasis on the Sustainable Management of Mangrove Forests in Guatemala, Honduras and Nicaragua[173]	Promote the sustainable use of marine and coastal resources through the development of integrated coastal management plans at the national and local levels; strengthen national capacity for implementing integrated coastal management, including the sustainable management of mangroves; support sustainable livelihoods of coastal communities that depend on coastal ecosystems, including mangroves, coral reefs and seagrass beds, protect coastlines against erosion and extreme weather events, protect coral reefs and seagrass beds from siltation, and enhance the role of mangroves in trapping sediments; maintain mangroves as nurseries for fisheries and habitats for biodiversity.	UNEP, Spain	UNEP, Ministries of Environment and Fisheries	Capacity building; Policy formation and integration; Field implementation	2011–2014	Coastal zone management	*Regional:* Guatemala, Honduras, Nicaragua
			In Nicaragua: Focus on Caribbean coast; specific tasks to be determined.					
19.	Partners for Resilience[174]	To increase the resilience of citizens against natural disasters, climate change and the deterioration of ecosystems, through	Netherlands *Budget:* €40	Dutch Red Cross, Red Cross Climate	Capacity building; Knowledge	2011–2015	Disaster risk management	*Global:* Ethiopia, Guatemala,

[172] UNDP, http://www.undp.org/gef/documents/newsletters/Pacific_Brief_September2010.pdf
[173] SIAGUA, http://www.siagua.org/?pid=4000&id=13901&tipo=noticias
[174] Red Cross, http://www.climatecentre.org/site/partners-for-resilience

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
		various intervention strategies: stimulating sustainable economic developments; strengthening the capacity of local organizations and local authorities, among other things by making a risk assessment, natural disaster risk management plans and warning systems; advocacy and stimulation of knowledge sharing between governments, civil society, knowledge institutes and the private sector in the field of natural disaster reduction and climate adaptation.	million	Centre, CARE, Cordaid, Wetlands International	communicatio n			India, Indonesia, Kenya, Mali, Nicaragua, the Philippines, Uganda
			In Nicaragua: Further information required.					

D. Proposed Adaptation Action

The "National Strategy and Action Plan on Environment and Climate Change" proposes a number of adaptation projects, along with responsible ministries and organizations, as well as funders (República de Nicaragua, 2010). These proposed initiatives are presented in Table 3. It is unclear to what extent these projects are in the process of being developed. Outside of these projects, Nicaragua is proposed to be part of a global initiative called "Up-scaling and Replicating Successful Approaches to Adaptation at the Local Level." Funding for this project has been requested from the Special Climate Change Fund.

Table 3: Proposed Adaptation Actions in Nicaragua

Name		Objectives	Type of project	Priority Sector(s)	Geographic focus (if any)
Projects Proposed in the National Strategy and Action Plan on Environment and Climate Change					
1.	Promote adaptation measures	To promote adaptation measures and responses by the Nicaraguan population in the face of climate change impacts, mainly through the construction of wells, aqueducts, rainwater capture and storage, resistant seeds, agricultural diversification, new crops and economic activities.	Field implementation	Freshwater supply; Agriculture	
			Notes: To be implemented by MARENA and other government ministries, municipal and regional governments; to be funded by the Global Environment Facility, IADB and Nordic governments.		
2.	Meteorology, seismology	Strengthen monitoring and information	Capacity building;	Climate service	Seven municipalities of

Name		Objectives	Type of project	Priority Sector(s)	Geographic focus (if any)
	and hydrology information and monitoring	mechanisms in meteorology, seismology and hydrology, in order to provide opportune and correct information to the population, improving early warning systems and response of communities and at the inter-institutional level.	Knowledge communication	information; Disaster risk reduction	the sub-watershed of Rio Viejo and of Lake Apanás
			Notes: To be implemented by MARENA and government ministries involved in civil defense and meteorological services; to be funded by IADB and Nordic governments.		
3.	Adaptation works in watersheds	Implement adaptation measures in the main watersheds, such as riverbank protection, in order to protect them from the impacts of climate change.	Implementation of measures	Freshwater supply	Main watersheds
			Notes: MARENA and other government ministries, municipal and regional governments are to be involved.		
Other Proposed Projects					
4.	Up-scaling and Replicating Successful Approaches to Adaptation at the Local Level[175]	The objectives of this project are not available.	Community-based adaptation	Unknown	Global: Indicative 10 countries – Barbados, China, Indonesia, Mali, Nicaragua, Peru, Sri Lanka, Tajikistan, Tanzania, Tunisia
			Notes: This project has been proposed to the Special Climate Change Fund.		

E. Assessment

Agriculture and water are Nicaragua's implicit priority areas for adaptation, reflecting its current climate risks and the location of its vulnerable populations. Adaptation projects have so far concentrated mostly on research and capacity building, but two larger infrastructure and capacity building initiatives have recently started. Current adaptation programming addresses needs in a number of different sectors, including agriculture and water, but also disaster risk management, coastal zone management and strengthening the capacity of government to prepare for and respond to climate change. Gaps in programming appear to be present in relation to human health and biodiversity; as well, none of the projects identified give explicit attention the gender-based impacts of climate change.

[175] GEF, http://www.thegef.org/gef/sites/thegef.org/files/publication/adaptation-actions_0.pdf

Nicaragua's finalized "National Strategy and Action Plan on Environment and Climate Change" proposes a number of adaptation programs for the period 2010 to 2015. Moreover, Nicaragua's policy framework is being strengthened, not the least through the national strategy which was adopted in 2010. Climate change is also mentioned in the country's "National Human Development Plan." Despite advancements made in adaptation measures, Nicaragua's national government experiences weak capacities; MARENA, for example, has few permanent staff.

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