

Step by Step towards Climate Change Adaptation in Four Municipalities in Madriz and in the Autonomous Region of the Northern Caribbean Coast



In the last 20 years, Nicaragua has been the fourth country most affected by extreme weather events worldwide (Germanwatch Report, 2014)⁴. The country is investing in humanitarian aid to respond to emergencies caused by hydro meteorological events, and to mitigate disaster risks and climate change impact, which have an effect on socio-environmental development nationally⁵. In the Department of Madriz, the behavior of precipitation indicates the likelihood of droughts at least once every three years. In the Northern Caribbean Coast, the main risks are floods and hurricanes, which are occurring with greater frequency and intensity.

The country's high vulnerability to hydro-meteorological hazards is increased by the deterioration its natural resources base (water, soils and forests), mainly due to deforestation and inadequate agricultural practices, land use changes and an urbanization and management of human settlements pattern that favors the concentration of population in a few cities and the advance of the agricultural frontier.

In order to decrease the vulnerability of territories to natural hazards and build the basis for institutional and community resilience, Partners for Resilience (Pfr), formed by the Nicaraguan Red Cross (NRC), CARE, the Association of Municipalities of Madriz (AMMA), the Human Promotion Institute (INPRHU), the Red Cross and Red Crescent Climate Centre, and Wetlands International, in coordination with territorial municipalities and governments, has supported the drafting and implementation of Climate Change Adaptation Strategies (CCAS) in the municipalities of Somoto, San Lucas, Las Sabanas, San José de Cusmapa, and in the Autonomous Region of the Northern Caribbean Coast (RACCN).

Tools that Favor Resilience

At the national level, after Hurricane Mitch hit the region in 1998, the National System for Disaster Prevention, Mitigation, and Disaster Aid (SINAPRED) was created to reduce disaster risk (Law 337, 2000). The Nicaraguan Government also has a National Risk Management Plan (PNGR-2010-2015).

The Nicaraguan government develops the National Human Development Plan (PNDH 2012-2016) as a state policy, which highlights a programme for environmental defense and protection, climate change adaptation and disaster risk management.

The National Environmental and Climate Change Strategy, approved in 2010 includes five guidelines, three of which are linked to Partners for Resilience work: environmental defense and protection of natural resources; mitigation, adaptation, and risk management regarding climate change; and sustainable land management.

¹ Nicaraguan Red Cross

² Editor

³ Netherlands Red Cross

⁴ <https://germanwatch.org/en/download/8551.pdf>

⁵ MARENA, 2013, V National Climate Change Forum

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Moropoto Community, San Lucas Municipality.
Photo credit: Nicaraguan Red Cross.

Despite having these national planning instruments and national institutional frameworks, the definition of local strategies or plans for climate change adaptation is necessary in order to improve response and provide planning tools to municipal, regional, and indigenous territorial governments (in the case of RACCN) before the effects of climate change. The objective is to propose priority measures that correspond to the identified problems according to the specific characteristics of each territory and take into account the population perception; in such a way, that they contribute in the municipal investment plans and other instances to earmark funding so as to reduce the effects of disasters and decrease the effects of climate change on water resources, productive systems, and natural ecosystems through recovering the adoption of successful adaptation measures.

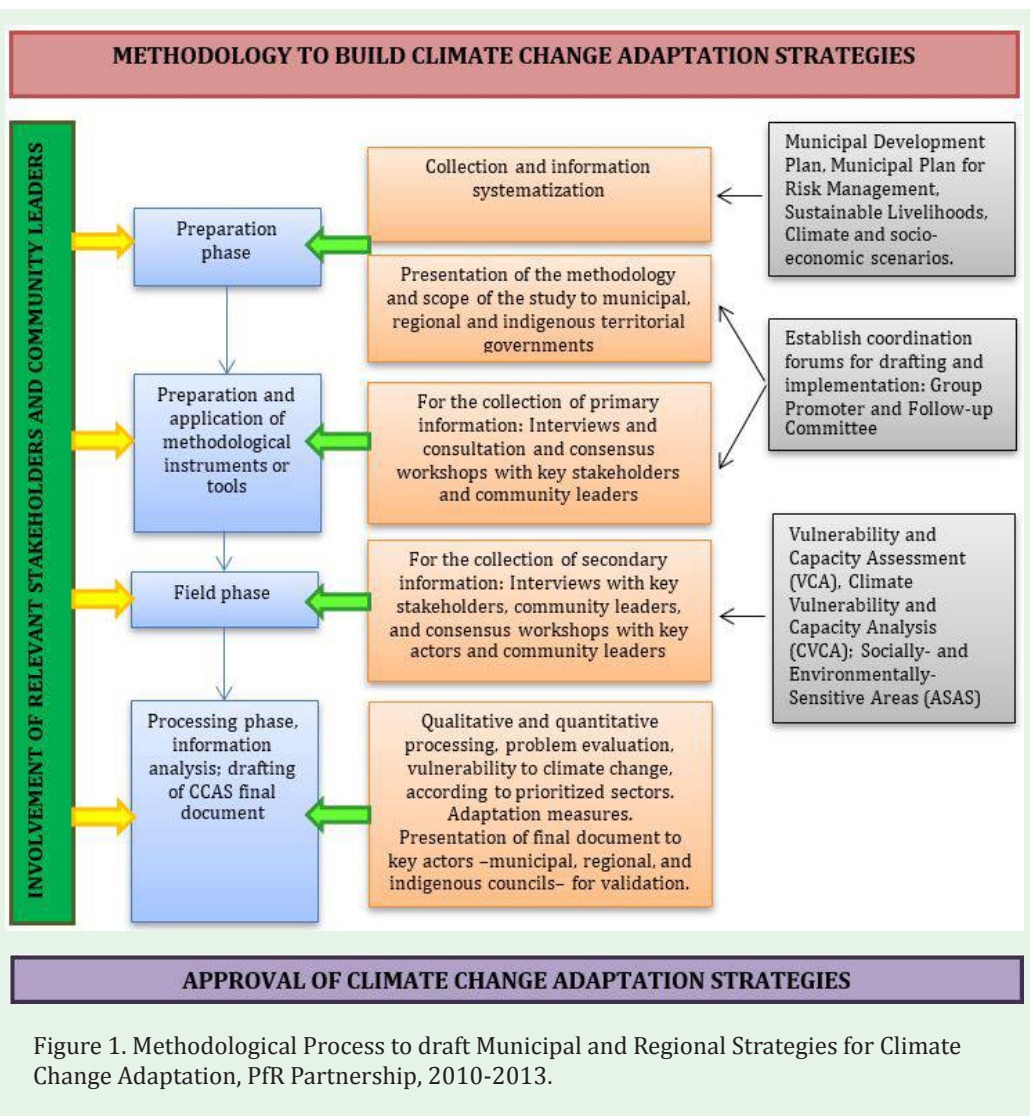


Figure 1. Methodological Process to draft Municipal and Regional Strategies for Climate Change Adaptation, PfR Partnership, 2010-2013.

An important fact is the value given by the stakeholders involved in the development of local adaptation strategies through their testimonials. *“These tools are important for decision-making at municipal and community level, allowing the empowerment of those involved”.*

Alberto Corrales; Environmental Unit Technician, Las Sabanas Municipal Mayor’s office.

Step 1. Drafting the Climate Change Adaptation Strategy

Participatory methodologies⁶ were used in the CCAS that allowed involving all key stakeholders from the municipalities, mainly community leaders, municipal mayoral offices, state institutions, territorial governments and the regional government.

The inclusion of key stakeholders in the strategy of each territory is important, since it promotes acquiring inter-institutional commitment and the search for partnerships.

Community organisations, state institutions, non-governmental organisations, multilateral cooperation organisations, civil society, the private economic sector, and universities participated in the process of building CCAS. Some of them have been included in the following diagram:

⁶ Primary Information gathering: interviews, focus groups and multicriteria analysis.





Figure 2.
Participants in the different construction phases of Climate Change Adaptation Strategies, 2010-2013

Step 2. Relevant Aspects for the Adaptation Process in Each Territory

Measures prioritized in the strategies serve as input for the municipal policy drafting process, as guidance and as necessary tools to appropriately guide efforts and resources by identifying, planning, and executing actions through guidelines that support decision making and the definition of priorities to decrease climate change vulnerability and socio-economic and environmental risks for each of the municipalities.

According to the local strategies results, the water sector is being prioritized as one of the most vulnerable. Equitable supply and distribution of this resource is becoming increasingly difficult; its availability and the lack of access to ideal sanitary conditions have resulted in the increase of gastro-intestinal diseases and loss in farming production, which causes food shortages and generates food insecurity.

According to community residents of the Autonomous Region of the Northern Caribbean Coast (RACCN), there is a decrease in river flow

resulting in water shortages in territories and communities, disappearing aquatic fauna, and difficulties in water transportation due to sedimentation along riverbeds. This decrease is associated to tree felling and the lack of forest coverage in the high areas of the rivers.

The consequences of climate variability and climate change, such as flooding and drought in San Lucas, Las Sabanas, and San José de Cusmapa are having a negative impact on the farming sector. Strengthening the capacities of farmers is necessary to contribute to increasing production without damaging the environment. Improving commercialization channels will provide the population with economic benefits while contributing to their food sovereignty and security.

The forestry sector is a very vulnerable sector, mainly due to human activities that are exerting greater pressure on natural resources through irrational exploitation, tree felling for firewood and fence posts, as well as the advancement of the agricultural frontier. The monitoring of compliance with existing Forest Management Plans by competent authorities with the participation of the private sector becomes necessary.

An evident example is that there have been significant changes in productivity over time. *“Regarding climate change, when I was a kid in class, I could see that there were a lot of green trees and birds, as well as abundant harvests in the communities. They were a lot, because my dad used to grow pumpkins and we would help him; we also had basic grains. Now, everything has changed, harvests are scarce and we do a lot of work in the field, but harvest little”.*

Victoria Espinoza from El Rodeo community, San José de Cusmapa.



Apanaje Community, Municipality of Las Sabanas.
Photo credit: Nicaraguan Red Cross.

Main Results

The Partners for Resilience Program has facilitated the drafting of three Climate Change Adaptation Strategies (CCAS) at the municipal level (San Lucas, Las Sabanas, and San José de Cusmapa) and a Regional Strategy that includes eight municipalities of the RACCN. In addition, follow-up has been provided to the CCAS implementation process in the Somoto municipality, with emphasis on the most vulnerable sectors (social, economic, productive, technological sectors). CCAS have been adopted and included in the work plan of state institutions, such as: MARENA⁷, MAGFOR⁸, INTA⁹ and MEFFCA¹⁰.

The purpose of CCAS is to help guide financial and technical resources towards the implementation of measures that contribute to increasing resilience at community and institutional levels. In that sense, all climate change adaptation strategies have been approved through resolutions by municipal governments, the regional government and the territorial indigenous government of the Autonomous Region of the Northern Caribbean Coast (RACCN).

The PforR Partnership has promoted the implementation of adaptation measures in territories with community micro projects in Madriz, according to the main problems presented and alternative solutions proposed; for example, the development of ecotourism in Somoto, Las Sabanas, and San José de Cusmapa in order to protect local ecosystems, and the goods and services they provide.

In San Lucas, the implementation of social micro projects, such as the “Improvement of the Community Lagoon and Establishment of Mitigation Works in the community of Malpaso”, aims to supply water to the population for domestic use given the severe drought problems reflected in the municipal CCAS¹¹.

Working with a focus on Integral Water Basin Management makes the solutions proposed operational. The municipal governments of San Lucas and Las Sabanas have been supported in the creation of Potable Water and Sanitation Committees (CAPS). Moreover, the recharge area for the Guata spring, which supplies the urban sector of Las Sabanas with potable water, was delimited. Water quality studies and the development of a water portfolio of the Tapacalí River and its tributaries contribute to the knowledge of the water supply in the territory to carry out specific actions that were defined.

In the Northern Caribbean Coast, there is political-technical support from the RACCN to harmonize planning instruments, strategies, plans and programs, such as the Bosawas Management Plan¹², the RACCN Forestry Development Strategy; the Forestry Management Plan, and proposals for a National Deforestation Avoidance Strategy. The Regional Climate Change Strategy was published in Creole, Miskito, and Mayangna, within the framework of respect for the multicultural nature of the region. The process for drafting a regional¹³ strategy was also documented.

⁷MARENA, Ministry of Environment and Natural Resources.

⁸MAGFOR, Ministry of Forestry and Farming.

⁹INTA, Nicaraguan Institute of Farming Technology.

¹⁰MEFFCA, Ministry of Cooperative and Associative Community Family Economy.

¹¹PforR Case study: “Community Micro Projects Improve the Livelihood of Rural Families in Madriz, Nicaragua”.

¹²The Bosawas Reserve is one of the largest tropical forests in Central America, shared by the Northern Caribbean Coast Autonomous Region (RACCN), Jinotega department, and a small part of Nueva Segovia department. It was declared a Biosphere Reserve by UNESCO in 1997.

¹³<http://masrenace.wikispaces.com/file/view/Sistematizaci%C3%B3n%20Concertaci%C3%B3n%20para%20la%20elaboraci%C3%B3n%20de%20la%20estrategia%20regional%20de%20CC.pdf/436964528/Sistematizaci%C3%B3n%20Concertaci%C3%B3n%20para%20la%20elaboraci%C3%B3n%20de%20la%20estrategia%20regional%20de%20CC.pdf>

The Regional Climate Change Roundtable promoted the drafting of a five-year implementation plan for the Climate Change Regional Strategy and acts as an advisor to the RACCN Environmental and Forestry Consulting Council. The PfR Program launched a call for proposals for the implementation of five social micro projects covering aspects of organic agriculture, indigenous knowledge, agroforestry systems, and capacity building aimed at communities in order to increase resilience.

Lessons Learned

Lesson 1:

Previous activities to create climate change awareness carried out by members of Partners for Resilience and other allied organizations such as MARENA, SERENA, Municipal Mayor's offices, Native Peoples of Cusmapa and San Lucas, GIZ, OXFAM, Red Cross, COSUDE, Volunteer Civilian Group (GVC), among others facilitated the application of the participatory methodologies to draft the CCAS.

Lesson 2:

The drafting of CCAS requires a multidisciplinary and coordinated approach with social actors involved in the process, which promotes their participation in territorial analysis and supports the definition of solutions based on particular situations.

Lesson 3:

The CCAS drafting methodology is appropriate to generate public-private partnerships through knowledge exchange and feedback, but requires active coordination and institutional commitment from municipal and regional governments.

Lesson 4:

Community participation in CCAS drafting facilitates the understanding of the impact of climate change on the population and their local livelihoods. In addition, it allows opening democratic participation spaces in the search for feasible solutions that are appropriate to the situation of each territory.

Lesson 5:

The synergy and complementary nature of the work carried out by Partners for Resilience in the drafting of CCAS promotes joint and collaborative work. In the Northern Caribbean Autonomous Region for example, a Climate Change Roundtable was created to provide follow-up to the implementation of the strategy.

Lesson 6:

Climate Change Adaptation Strategies highlight the PfR principles that help build community resilience, for example:

- * Work on different timescales through short, medium, and long term plans
- * Watershed approach recognizing geographical scales
- * Strengthening institutional resilience, and
- * Community self-management, through social micro projects, for example.



Workshop to validate the results of the CCAS of the municipality of Las Sabanas
Photo credit: Nicaraguan Red Cross

Lesson 7:

It is important to earmark funds for the implementation and follow-up of strategies with the involvement of all stakeholders at different levels, who must work in coordination and harmonization towards the same goal. The PFR Program, for example, implements social micro projects in agreement with municipal and regional development in such a way that the population can adapt and become resilient to climate change and its repercussions.

Lesson 8:

Identified adaptation measures are feasible, since they also include low-cost and high-impact options. Their adoption requires the joint management of local stakeholders and the support of municipal governments.

The process of building Climate Change Adaptation Strategies is a complex one, since it demands the participation of actors at all levels and it also requires different data collection methodologies. The documents issued through the intervention of Partners for Resilience, although aimed at climate change adaptation, highlight the Disaster Risk Reduction and Ecosystem Management and Restoration approach, which, together with the political commitment received, make the CCAS vital tools to be used in Development Plans and Investment Plans to support the most sensitive sectors, as well as guiding tools for institutions and international cooperation.



Workshop to review the Regional Strategy for Climate Change Adaptation, RACCN
Photo credit: Nicaraguan Red Cross

“Working together to build institutional and community resilience”

Alianza por la Resiliencia




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