

DIAGNOSIS OF COASTLINE LOSS SITUATION AND ITS IMPACT ON THE LIVELIHOODS OF THE COMMUNITY OF GARACHINÉ, CHEPIGANA DISTRICT, DARIEN PROVINCE

INTRODUCTION

The project “Diagnosis of the situation coastline loss and its impact on the livelihoods of the community of Garachiné, Chepigana district, Darien province” seeks to document and systematize the dimension of the coastal erosion problem in the community of Garachiné, to collaborate in the search for ecosystems based adaptation solutions (EbAs) from the perspective of the natural environment and people.

The project aims to reinforce the importance of coastal ecosystems (mangrove forests) to mitigate coastal erosion and, at the same time, strengthen the knowledge of the Garachiné community about the existence of ecosystem-based options to face the problem. The vision is aimed at generating evidence so that the coastal community of Garachiné can manage actions both at the local and national levels to stabilize its coast, beginning to adapt its infrastructure and continue with the fishing activity that represents its main livelihood.



COASTAL EROSION DIAGNOSIS

The research carried out jointly between the Wetlands International Foundation and the Ministry of the Environment for

the diagnosis of coastal erosion in the community of Garachiné, located in the Ensenada de Garachiné in the Gulf of San Miguel, between coordinates 8° 4'8.89 "N, 78° 21'46.10" W and 8° 4'10.77 "N, 78° 22'1.40" W. Administratively, the community of Garachiné is located in the village of Garachiné, district of Chepigana, province of Darién. The study area delimited for this project comprises approximately one thousand two hundred forty (1240m) meters of coastline in the community of Garachiné.

The study resulted in the identification of erosive and cumulative processes in the study area. Erosive processes are evident throughout the landing area or entrance to the town of Garachiné, represented on the identification map of erosive and cumulative processes with shades ranging from red to yellow (approximately 950 meters long). As can be seen in the map, the most predominant level of erosivity in the study area is intermediate. However, it is important to note that there is a point on the right (looking at the map) represented with red tones, which indicates a more critical process, showing an increase in the level that goes from intermediate to maximum. Calculating the average of the linear regression data it can be concluded that the regression rate for the coastline of the town of Garachiné is approximately -0.94 meters per year. Similarly, when carrying out an average calculation of the net movement of the coastline in the community of Garachiné, it is obtained that in total there is approximately a setback of 35.57 meters in a period of 35 years from 1984 to 2019.

PARTICIPATIVE DIAGNOSIS

The research included elements of participatory research, action research and non-experimental-descriptive, allowing the community to be interpreted and analyzed. The research procedure carried out consisted of semi-structured dialogues and

direct observations, as well as a review of secondary sources and workshops.

The information obtained in the workshops was initially collected in documents called workshop reports, these documents were delivered as a means of verification to the SGP (Small Grants Programme - GEF), as a support for the activities carried out, in addition to constituting the source of information for the analysis of the documents to generate (diagnosis and action plan).



The identification and ranking of problems associated with coastal erosion in the area was carried out. This exercise represents a first level of order for the solution of difficulties. The community of Garachiné, in an assembly, voted for the consideration of its priorities with respect to the advancement of the coast, as shown below (Table N°1):

Table N°1. Prioritization of the Problems in the Community of Garachiné - Related to the Advancement of the Coast.

Problems	Priority
Coastline advance	I
Global Climate Change	II
Floodings	III
Sand extraction (to build homes)	IV
Mangrove logging	V
High tide	VI
Buildings on the sand strip	VII

Source: Project Diagnosis of the coastline loss situation and its impact on the livelihoods of the community of Garachiné, Chepigana district, Darien province. Fundación Wetlands International, 2019-2020.

ACTION PLAN

SCOPES

- Incorporate the community of Garachiné, actively and participatively in search of enabling sustainable development in the face of the resilience of the coastal advance and the use of resources in a rational and socially sustainable way.
- Launch with the community of Garachiné, a comprehensive development process based on the conservation of

ecosystems, the integration of human and economic progress with the conservation of the natural and cultural environment, traditions, and support for educational activities, training, research, conservation and sustainable development.

COAST PROTECTION MEASURES

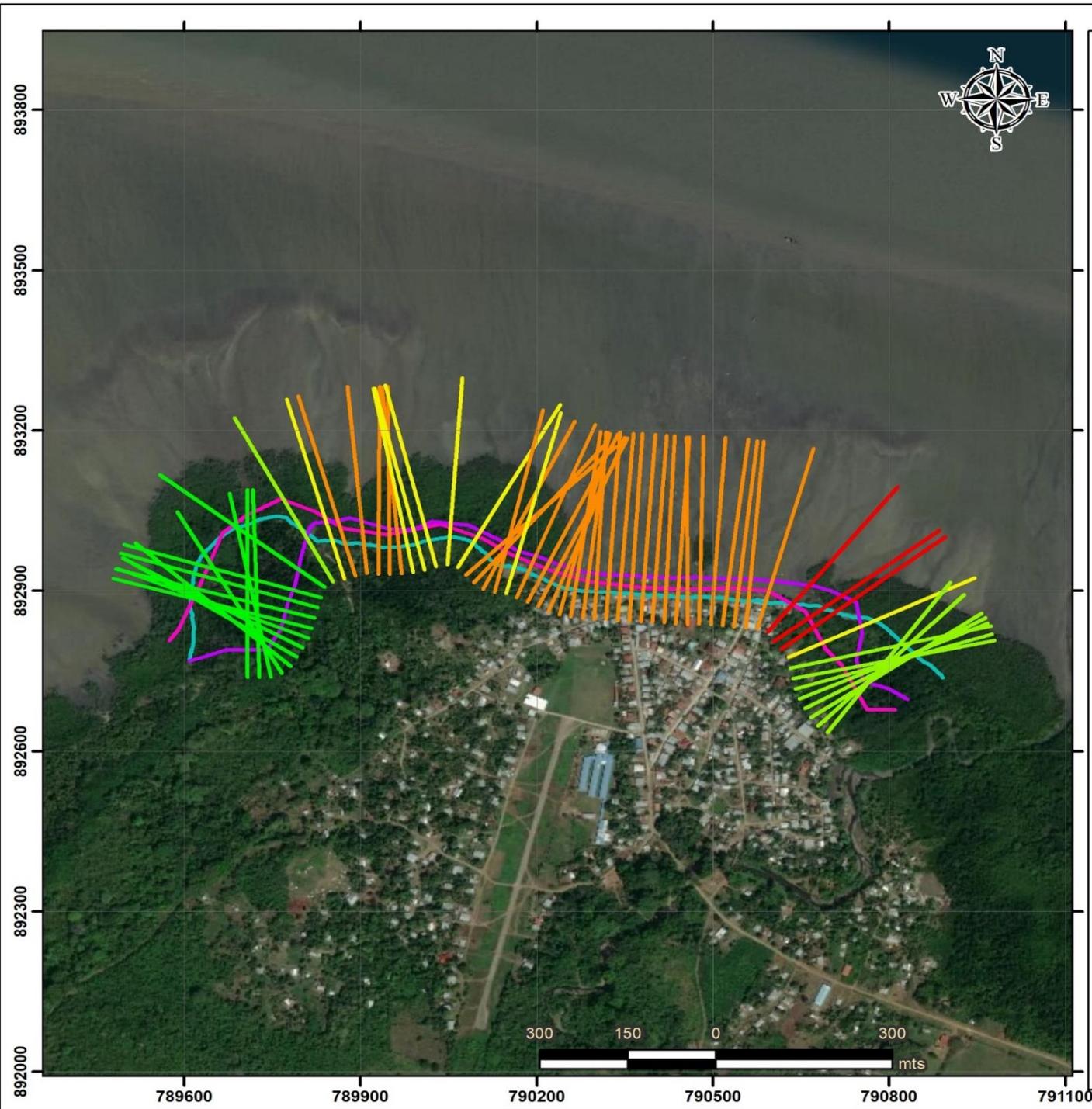
To reduce the process of coastal erosion in the community of Garachiné and based on the biophysical characteristics studied, it can be pointed out that, in addition to the traditional gray infrastructure measures, such as the construction of a retaining wall, it is feasible to implement measures based on solutions in nature, such as those described below.

Alternative 1: The use of permeable barriers: Using palisade and bower, the product of cutting or maintenance of the living fences in the farms of the area as basic material. What this barrier does is reduce the erosive effect, retain sediments and allow the retention of propagules and the development of their roots through community revegetation efforts to repopulate the mangrove in the front part of the community (which implies low costs and rapid implementation).

Alternative 2: The construction of oyster castles: It involves a pilot for the construction of cement-based structures, where the oyster population can be recovered in areas where it is necessary to protect the eroded coasts as a pilot plan. This option is feasible considering the large quantity of oysters found in the substrate and even in the mangrove roots, which in the future may be harvested for the consumption of the population.

COMMUNITY ACTION MEASURES

- Open permanent channels of listening among all stakeholders.
- The constant circulation of the same information for everyone.
- The constant tendency to coordinate efforts.
- The constant search to overcome isolated efforts and arbitrary programs.
- The involvement of all stakeholders.
- The concretion in the practice of the community intervention would be in that the integrated and programmed action of the different administrations, the coordinated action of the set of services and the involvement and participation of the population is seen jointly.



IDENTIFICACIÓN DE PROCESOS EROSIVOS Y ACUMULATIVOS, EN LA LÍNEA DE COSTA DE LA COMUNIDAD DE GARACHINÉ, DISTRITO DE CHEPIGANA, PROVINCIA DE DARIEN.

Proyecto - Diagnóstico de la situación de la pérdida de la línea costera y su impacto en los medios de vida de la comunidad de Garachiné, distrito de Chepigana, provincia de Darién



- LEYENDA**
- Línea de Costa año 1984
 - Línea de Costa año 2000
 - Línea de Costa año 2019
- EROSIÓN O SEDIMENTACIÓN**
- Máxima Erosión
 - Erosión
 - Mínima Erosión
 - Mínima Sedimentación
 - Sedimentación



Escala: 1:10.000

Sistema de Referencia Espacial:
 Elipsoide WGS 1984
 Proyección Universal Transversal de Mercator
 Datum Vertical: Modelo Gravitacional Terrestre 1996 (EGM 96)
 Datum Horizontal: WGS 84 / Marco de Referencia Terrestre Internacional 2008
 Zona 17 Norte

Fuente:

Mapa base: Digital Globe (ESRI); División político-administrativa (Contraloría General de la República de Panamá).

Elaborado por: Wetlands Internacional - Mayo de 2020

