

## SUMMARY

This project aimed to intervene a process of reforestation through the planting of 2 species of trees that are in critical danger due to climate change and human activity, so the ECOCEANOS corporation carried out this project in order to recover part of the tropical dry forest located in the municipality of Momil, corregimiento of Córdoba, Colombia, improving the socioeconomic conditions of the Zenú indigenous community present there, which have been for years settlements of scarce resources that subsist on what is produced by nature for the maintenance of livelihoods, the production of food, handicrafts, fishing and tourism.

The project "CONSERVATION PROJECT FOR 2 ENDANGERED SPECIES OF TREES IN MOMIL COLOMBIA" began in 2014 by the ECOCEANOS corporation with the help of the Zenú de Momil indigenous community which was the main influenced in order to intervene in the process of urban deforestation and recover tropical dry forests, while improving the socio-economic conditions of families. The project was completed in 2018 in the company of local staff, hired and trained by community leaders through resident associations, with the aim of increasing job opportunities in the areas affected by the initiative.

**KEY WORDS:** Water resource, climate change, environmental damage, biodiversity, native plants, reforestation, community.

## INTRODUCTION

The Colombian government has authorized commercial activities (mining licenses, road construction and unsustainable tourism) that have deforested 70km of tropical dry forests in the municipality of Momil Córdoba between 2009-2013, eliminating the biodiversity of the area.

Fauna and Flora International, the Zenú indigenous community and our corporation, have formed a team to coordinate multilateral and multifunctional conservation projects (benefits of various species) to stop the advance of 'legal' activities that prevent the conservation of ecosystems, especially the species: Cedars (*Cedrus*) and Guayacán (*Guaiacum officinale*).

The immense Momil region, Córdoba has an area of 152.00 km<sup>2</sup> and is home to 14,160 inhabitants, including Zenú indigenous reserves. Extremely rapid growth and the lack of adequate planning tools have led to uncontrolled development, which has exceeded Momil's capacity to generate basic services, creating an

unsustainable environmental situation. The most disadvantaged classes, most of whom live in informal settlements called "palm huts", are under pressure from the most serious problems: overcrowded and insufficient housing, inadequate access to health care services, unemployment, poor hygiene, insufficient infrastructure and environmental degradation. At first, much of its area was dedicated to the planting of corn, which was abandoned once the soil was exhausted.

Momil has a long history of losses in flora and fauna as a result of the deforestation caused, also causing economic problems for these indigenous reserves that consider these resources as their daily sustenance. Over time, the rain that directly affects the soil increases its compactness, reduces its infiltration capacity and therefore increases runoff. This results in increased soil erosion and sediment deposit in riverbeds and streams, clogging natural drainage and causing flooding that affects all residents. Other consequences of deforestation are the proliferation of mosquitoes carrying diseases

such as dengue, the obstruction of streams and sources, as well as changes in the local microclimate, such as rising temperatures.



## **1. REFORESTATION AND ENVIRONMENTAL EDUCATION PROGRAM**

Actions were developed that would allow the conservation of water as a basic resource to generate clean energy. In 2014 he began an initiative with the Zenú de Momil indigenous community that sought the restoration of watersheds with the planting of native trees in the protection areas of the region's water sources.

During the first year, 562,000 cedar and guayacan trees were planted on 524 hectares in the municipality. However, that was only the beginning, since the objective is to plant 4 million trees cultivated and cared for in an estimated period of 10 years with the participation of rural and peasant communities, generating around 400 direct jobs in charge of planting, isolation and maintenance in reforested areas.

### **Objectives:**

- The Zenú indigenous community was sensitized and trained about the importance and need to take care of their green environment, encouraging the participation and leadership of the caciques to exercise greater control in the reforestation activities in the reservations.
- The learning of 122 children was improved with the help of 20 professionals from the

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ECOCEANOS corporation with didactic and playful activities, resulting in the positive development of favorable attitudes towards the environment.



### 2. PREVENTION PROGRAM AGAINST OTHER CAUSES OF DEFORESTATION

Community input is part of one of the best and most effective forms of organized community participation in the main issues that are self-interest. In the case of forest fires, it is completely applicable and timely to undertake. This is intended, on the one hand, to position in the minds of people a change in the attitude of the population aimed at reducing risk situations that may be conflictive and that can generate forest

fires, and on the other, to carry out activities on the ground aimed at reducing the danger of spreading this type of fire.

For its part, through the culture of self-protection, it is intended to create a space and achieve a permanent commitment of public and private actors related to the environmental issue of the region.

#### Objectives:

- Diagnose the situation of forest fires at the local level (at least 5 sectors per year), providing prevention measures to be developed in the areas of greatest risk.
- Register existing organizations in sectors identified as critical.
- Implement prevention action plans with each social organization that is detected and identified as participatory.
- Manage advice to develop local prevention activities (signs, brochures, among others).

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- On the part of the inhabitants, rural and interface areas, the environment of their homes must be kept clean, eliminate live or dead fuels that could spread the fire to and from their homes; clean roofs and gutters frequently; maintain easy and clear access for the arrival of emergency vehicles; keep emergency numbers updated; give notice of the intention to use fire to the ZENÚ INDIGENOUS COMMUNITY.

### 3. PROGRAM TO GENERATE EMPLOYMENT IN INDIGENOUS MOTHERS HEADS OF HOUSEHOLD.

The work articulated between the ECOCEANOS corporation, the Zenú indigenous community and the municipal administration of Momil achieved the intervention of 63 properties in basin areas, in which landscape management tools have been implemented with the planting of 16,800 plants; in 124 thousand square meters in which forest enrichment has been advanced, native species have been planted such as; : Cedrus

(Cedrus) and Guayacán (Guaiacum officinale) for the restoration of the territory.

"Managing to become linked to the workforce after for years the lands of my population were not in the optimal conditions to produce food for their own consumption and for commercialization and thus find a means of sustenance, was a difficult time from which I was able to recover thanks to the resources I managed to obtain for my reforestation work," thanked Ximena Ricardo, one of the young beneficiaries of the agreement.



#### 4. VULNERABLE SPECIES STATUS ASSESSMENT PROGRAMME

25 reports were initiated to assess the state of biodiversity, the first of which was prepared in 2014 and included a first nationwide inventory of the affected species. However, it should be noted that contributions to flora and fauna inventories have 165 antecedents that go back several decades. A process of systematization of information was generated that unified partial efforts of both public, private, academic and international cooperation institutions. These first inventories were nourished by programs such as Flora de Colombia led by the National University and the ECOCEANOS corporation coordinating and unifying the efforts together with the Zenú indigenous reserves.

The analysis of the change in the human footprint on ecosystems can be very useful to advance in the monitoring of conservation strategies such as restoration, the identification of priorities for conservation or the role of protected areas to control human pressures. Therefore, it can be known whether such strategies effectively

mitigate or reduce the human footprint for a specific ecosystem.

#### Objectives:

- Identify risks in the interface areas with frequent occurrence and prepare 1 report for each month of the year.
- Encourage preventive forestry actions by individuals, mainly in interface areas.
- Implement a program of periodic maintenance of roads to the Zenú indigenous community (especially sectors defined as critical).
- Respond to the information requirements of the Zenú indigenous community for the elaboration and / or updating of land use plans.



**5. DISSEMINATION CAMPAIGN  
AGAINST DISEASES CAUSED BY  
THE PROLIFERATION OF  
MOSQUITOES.**

The ECOCEANOS corporation, together with the local authorities and the leader of indigenous reserves Zenú, developed the necessary intersectoral management in order to optimize resources and bring together all possible efforts in the control of dengue. Likewise, for the development of strategic actions through social and community mobilization that promote civic, solidarity and responsible behaviors and concrete actions of vector control such as elimination of hatcheries in homes and properties adjacent to homes, protection of water tanks, collection of useless, filling of materas, vases and other containers where rainwater can accumulate.

Promotion: It seeks to link the Zenú indigenous community in the actions of prevention, control and surveillance in public health, and to control the infestation by *A. aegypti* combining different actions and methods of prevention and control through the execution of actions such as the following washing / covering:

Elimination of mosquito breeding sites by protecting drinking water tanks and destroying or filling containers that can accumulate rainwater.

- Prevention of mosquito bites through the use of awnings to isolate the sick or as a measure of protection of all people.
- Use of repellents, protection of doors and windows to prevent the introduction of the mosquito into the home.
- Effective control of epidemics through the adoption of chemical control measures and the timely attention of febrile cases.

Social communication: The social communication component aims to cover large sectors of the population in the shortest possible time, seeks to inform, motivate and mobilize the population to participate in the different relevant actions to avoid the greatest number of infections by the disease.



Colombia. CIFOR.

• Alves, B. H. (2015). Resiliencia ambiental: el uso de la infraestructura verde en la cuenca de

Itacorubi, municipio de Florianópolis, Brasil. *Territorios en formación*, (9), 5-22.

• Arbeláez, D. M. L., & Sagre, J. D. Q. (2015). Compensaciones de biodiversidad: experiencias

en Latinoamérica y aplicación en el contexto colombiano. *Gestión y Ambiente*, 18(1), 159-177.

• Armenteras, D., González, T. M., Vergara, L. K., Luque, F. J., Rodríguez, N., & Bonilla, M. A.

(2016). Revisión del concepto de ecosistema como “unidad de la naturaleza” 80 años después

de su formulación. *Revista Ecosistemas*, 25(1), 83-89.

### BIBLIOGRAPHIC CITES

• Alcaldía Municipal de Facatativá (2014). PLAN DE ORDENAMIENTO TERRITORIAL. [en línea] obtenido de: [https://notinet.com.co/verdes\\_impuesto.php?taxesdep=4051](https://notinet.com.co/verdes_impuesto.php?taxesdep=4051) [acceso 19 Feb.

2019].

• Almanza, C. A. B., Sánchez, R. D. P. M., & Wunder, S. (2010). Pagos por Servicios Ambientales en Marcha: la experiencia en la Microcuenta de Chaina, departamento de Boyacá,



- Aroca, I. A. A., Intriago, D. L. M.,  
Moreira, G. N. M., & Párraga, J. P. M. (2019).  
Reforestación  
de las cuencas hídricas del sitio  
Mosquito. Revista San Gregorio, (28).
- Blanco, J. T., Wunder, S., &  
Navarrete, F. (2008). La experiencia colombiana  
en esquemas de  
pagos por servicios ambientales.  
RECURSOS NATURALES EN COLOMBIA,  
109
- Bocanegra, P. F. (2016) Primera etapa  
de la revegetalización y restauración ecológica  
del  
parque arqueológico de Facatativá.  
Ministerio de Cultura, dirección de patrimonio-  
grupo
- intervención bienes de interés cultural
- Buitrago, G. A. F. (2016). La madera  
colombiana, oportunidad de regeneración del  
flujo de los  
ríos mediante una producción sostenible  
y competitiva. Revista de Tecnología, 15(2),  
103-114.
- Camargo, E. S. C., Carreño, J. A. F., &  
Barón, E. M. P. (2015). Los servicios  
ecosistémicos de  
regulación: tendencias e impacto en el  
bienestar humano. Revista de Investigación  
Agraria y
- Díaz, F. Martínez, R. Villar, LA.  
Criterios clínicos para diagnosticar el  
dengue en los primeros días de  
enfermedad. Biomédica 2006; 26:22-30