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RECOVERY OF PLANT PATRIMONY IN THE PINE, CYPRESS AND OAK FORESTS IN JOATECA, MORAZÁN.



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Joateca is a municipality located in the Department of Morazán in the Republic of El Salvador. It borders to the North and East with the Department of La Paz, Honduras, to the South with the Municipalities of Corinto and Cacaopera, and to the West with the Municipalities of Meanguera and Arambala.

The inhabitants of this municipality are mainly dedicated to agricultural activities, mainly harvesting basic grains such as corn, beans and sorghum, as well as bovine livestock and free-range birds. There is a moderate level of commerce, basically small stores that commercialize basic food staples, home appliances and clothing.

The municipality also has a protected pine forest that covers approximately 262 hectares. This area has been seriously affected by illegal tree cutting, forest fires, and by the southern pine bark beetle.

The people of the municipality, motivated by the need to protect the forest and ensure the supply of potable water for the current and future generations, made the decision of constituting a Potable Water, Health and Environment Administration Association (ASAPSMA, for its Spanish acronym), which has been formally and legally constituted since May 26th, 2000.

ASAPSMA has 228 members; 87 women and 141 men. The main purpose of this Association is to manage, implement and administer a water distribution system. The association is responsible for 19 hectares of protected area, and coordinates all necessary actions to safeguard and sustainably use the forest,

with the Ministry of the Environment and Natural Resources (MARN, for its Spanish acronym) of El Salvador.

ASAPSMA Board members, Alberto Portillo (Chairman) and Jacobo Pereira (surveillance manager), explained that the population was greatly concerned for the constant decline and degradation of the water that was being consumed, which was mainly due to deforestation around the main water sources that supply the communities.

“Without a forest, we have no water, air or wild animals; and without these, we have no life”

- Jacobo Pereira
ASAPSMA Surveillance Manager

Deforestation started many years ago, and went unchecked because of the lack of environmental awareness of the inhabitants who would cut down trees within the protected areas with the purpose of obtaining wood to build their houses, and firewood for cooking.



Another cause that deteriorated the forest in this area was forest fires that mainly occurred in the dry season basically due to climate variability and change. The inhabitants did not have the proper know-how and capacities to address these climatic phenomena. In addition, in 2018, the area saw the invasion of the southern pine bark beetle, which significantly reduced the forest coverage of the region.

The scarce vegetation coverage, plus the extreme slope of the terrain and aridness of the territory resulted in a greater surface runoff during the rainy season, generating severe soil erosion and preventing the filtration of water to the aquifer.

Before, the villagers did not value water and really made a bad use of this precious resource. The over-exploitation of this resource during the dry season, also generating social problems among neighbors.

Evidently, all these conditions made it necessary to ration the resource, by limiting access to potable water during hours or even days to the community. This started generating problems at the educational centers in the community and developed diseases related to the consumption of contaminated water, lack of hygienic conditions (washing hands, fruits and vegetables) and a greater number of mosquito borne diseases (because water was being stored inadequately).

ASAP SMA started developing actions that would help mitigate these problems, and were complemented by the Central

American Community Farmer's and Indigenous AgroForestry Coordination Association (ACICAFOC, for its Spanish acronym) funded by the German Development Bank (KfW) from the Federal Republic of Germany.

Subproject "Recovery of Plant Patrimony in the Pine, Cypress and Oak forests in Joateca, Morazán" was implemented in 2019 with the intention of recovering the local plant patrimony in pine forests affected by the southern pine bark beetle in the community of La Ermita, canton of Paturla in the Municipality of Joateca. It had a total investment of EURO €90.000; 44% of which came from contributions made by the community and directly benefitted over 228 families and over 1200 families indirectly.



Specifically, this subproject sought to promote the recovery of the local forest by planting native tree species and vegetation with a significant cultural value, as well as protecting trees as part of the natural regeneration process of the protected area.

Similarly, the participation of ASAPSMA members was encouraged for the development of community forest management practices; primarily by fostering the engagement of children and youth. Also, awareness workshops were carried out with the participation of several stakeholders in the local communities.

Regarding the results obtained from the subproject, a communal nursery was established that produced over 30 000 local native plants: 17800 pine, 12000 cypress and 200 oak trees. These trees were later planted in the protected area under the administration of ASAPSMA, in conjunction with the government. The entire planting, caring, transportation, transplant and weed control process is carried out by members of the association.

In addition, the subproject allowed establishing a fertilizer production plant which produced over 7000 centners (1 centner is equivalent to 100 kg) of bokashi, used to fertilize trees transplanted to the protected area.

The subproject also implemented several complementary works to support the recovery and protection of the forest. Over 200 rainwater infiltration wells were built and over 4500 linear meters of waterways were constructed to properly channel

rainwater. Additionally, 3 water springs were protected with a perimeter fence to prevent access and potential contamination by wildlife and vandalism.

A forest management plan was developed that allowed a better use of natural resources and to mitigate degradation. The capacity of ASAPSMA members was strengthened to deal with forest fires. Forest firebreaks were established around the outer border of the protected area; community forest rangers were hired to improve surveillance and help mitigate any risks of fire; a forest inventory was made with the support of the Ministry of the Environment and Natural Resources of El Salvador.

Regarding community awareness, the subproject facilitated 10 workshops that included the participation of over 300 people. These workshops focused on activities related to the subproject, such as the elaboration of bokashi¹ fertilizer, an awareness of community management and sustainable use of natural resources, the importance of stopping deforestation and developing adequate reforestation practices, engaging in adequate forest fire management practices, using firefighting water pumps and the correct construction of firebreaks to help stop the spread of forest fires.

¹Bokashi is organic waste matter fermentation with microorganisms, such as fungi and bacteria. Ingredients are key to provide good fodder to microorganisms and achieve quick growth. It takes around three weeks for it to be ready to be used in a farm. (National Organic Agriculture Program, Ministry of Agriculture and Animal Husbandry of Costa Rica).

When the subproject implementation phase was completed, we started to see the main effects or impacts in the quality of life of the beneficiaries, primarily in the availability of water, the improvement in the organizational capabilities of the community, women and youth empowerment through an active engagement and participation in actions that help protect the forest and greater awareness in the management of natural resources.

“In the winter we had to boil and strain water, we had to go look for water in other places, such as communal water fountains or we had purchase it because it was always murky and dirty and we simply didn’t trust that water to drink. But now we actually have nice and clean water, it actually taste different. Now we actually take care of it and we definitely don’t waste it, even though we have it available all day long and not just for short periods of time”.

- María Gutiérrez
subproject beneficiary

Reforestation activities and the works to channel and improve rainwater infiltration have allowed increasing groundwater flows, and therefore there is a noticeable increase amount of water that can now be made available to the inhabitants, and thus considerable reducing the affectation of related diseases.

Similarly, forest fires have been significantly reduced, and whenever a fire sparks, the community’s response has been swift and coordinated, drastically reducing any affectation, allowing maintaining the forest coverage.

This experience allowed members of the community to actively engage in the

subproject, by forming teams that worked simultaneously in different areas, which strengthened the bond amongst the members of ASAPSMA, deepening their sense of identity and desire to work together to resolve the different issues affecting the community.



In conclusion, thanks to the support of the German Cooperation Agency and ACICAFOC, the inhabitants of the Municipality of Joateca have been able to significantly improve their relationship with the forest and other natural resources, ensuring adequate conditions for its development and for future generations.

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