GEF Small Grants Programme

PERU: Cultivating Tara to Reforest Degraded Riverbanks and Other Areas at Risk of Landslides in El Agustino, Lima

Project No: PER/OP4/RAF/08/03

Grantee: Central Distrital de Bancos Comunales de los Distritos de El Agustino y Santa Anita

Location: Distrito de El Agustino, Lima

SGP Contribution: 50,000 USD

Co-Financing: 46,140 USD

Project Duration: 01/2009 - 03/ 2013

Number of people participating: 100 women and their families

Number of people benefiting: 180,000

Background

The project is located in Lima's El Agustino district – a densely populated urban area of approximately 180,000 inhabitants. The banks of river Rímac had suffered from extensive land degradation and illegal garbage disposal, which increased the risk of landslides and pollution. One hundred local women organized themselves into a group called "Promotoras Ambientales" to rehabilitate the river banks and surrounding hills with Tara trees and other medicinal plants. An artificial wetland with a biofilter was also created to cleanse the water for irrigation. The project has enjoyed continued support from the district municipality.

Background

In Lima, the hillside district of El Agustino and its degraded Rímac river banks constitute high risk areas for natural disasters. Frequent landslides occur due to a lack of vegetation cover on El Agustino's slopes and riverbanks, whereas the flow of the Rímac periodically swells during the rainy season in the Andean Highlands. Lima itself is located in one of the most arid regions in the world, - and one that is said to be highly affected by the effects of climate change. In Peru, hydrometreological phenomena such as drought, heavy rains, floods, frost, and hail have increased more than six fold between 1997 to 2006, while extreme weather events such as landslides, floods, frost and El Nino have increased in frequency and intensity.

In metropolitan Lima, communities face the combined challenges of climate change, environmental degradation, population growth, and poverty. Similar to many other mega-cities, Lima has seen strong population growth with newcomers often settling along risk prone areas. In addition to landslides, soil erosion and flooding, the 180,000 some residents in El Agustino face contamination from solid waste. In light of these environmental risks, 100 women of the CBO Community Banking of El Agustino and Santa Anita, organized themselves into a group called "Promotoras Ambientales" to improve the resilience of this area by reforesting the slopes with Tara trees. With that, the women also revived the ancestral knowledge of Tara's medicinal properties. As in many places around the world, traditional knowledge of medicinal plants is slowly being lost due to rural-urban migration and the prevalence of conventional medicines.

Tara is a leguminous tree endemic in Peru

Project Objectives and Key Activities

The goal of the "Promotoras Ambientales" or environmental activists was to improve El Agustino's resilience to natural disasters, while improving livelihoods of the poor households in the community. One of the key strategies was to cultivate Tara (*Caesalpinia spinosa*), a small leguminous tree, to reforest degraded and high risk areas along the hillsides of El Agustino and its Rímac river banks. Tara trees were chosen because of its many benefits. Most significantly, the deep, networked roots of the Tara tree help secure soil and prevent landslides. Tara is also used for medicinal purposes (fever, wounds, and stomach problems), natural dyes, tanning, gum production and agroforestry.

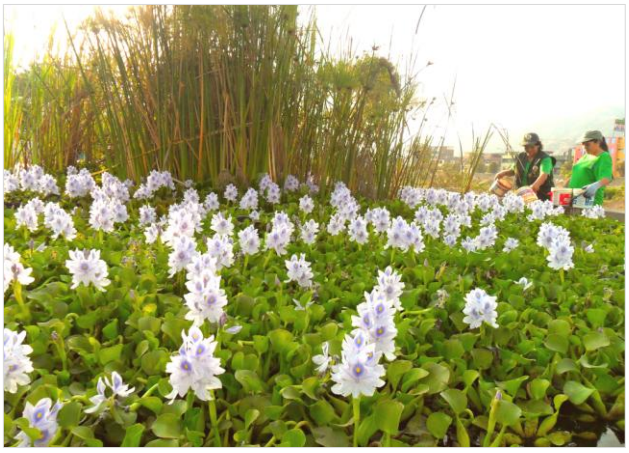
Cultivating Tara to rehabilitate land

The project trained 100 "Promotoras Ambientales" in the production of organic fertilizer as well as nursery and reforestation techniques for the area. The women established a plant nursery and constructed an artificial wetland to decontaminate the polluted water of the Rímac for the irrigation of the plants. The organic fertilizer was used to prepare the degraded land for the new plants after the women and their families had removed solid waste from the area to create a litter free zone.

Environmental Impact

To date, the 100 women have managed to reforest 17,900m^2 of degraded, risk prone land with more than 2,500 Tara trees. Nearly half of that area, that is 7,890 m^2, is located at the banks of the river while the rest was planted in the residential hills to reduce the risk of landslides. The Tara cultivation activities contributed substantially to the conservation of Tara as an endangered species, while the commercialization of Tara-based products provides an economic incentive for the women to sustain these activities. The women also planted 1,000 Aloe vera plants and other medicinal herbs to extend the green cover and subsidize their livelihoods.

The artificial wetland and its associated "biofilter" have become an integral part of the area's irrigation scheme. The bio-filter is a simple, low-cost technology, which cleanses the water with the help of minerals, including gravel and rocks, to remove solid waste. Fast-growing, decontaminating plants such as water lilies, papyrus and cane in the wetland then complete the cleansing process of the water. The wetland now even provides a habitat for fish and frogs.



Minerals in the biofilter and plants in the wetland cleanse the water

The successful implementation of the project has brought the women great recognition as effective environmental advocates and agents of change. The mayor of El Agustino's municipality has consequently officially entrusted the women with the management of the land for a period of five years, - with the possibility of renewal. The local green spaces are now being used by residents for recreational purposes, including for physical exercise.

Socio-Economic Impact

Before completion of the project, 30 women of the "Promotoras Ambientales" created a micro-enterprise to commercialize organic fertilizers, and various Tara and Aloe vera products. To date, the women have managed to market 2 tons of organic fertilizer per month, and 300 kilos of Tara pods and 1,000 Aloe vera plants. As a result, the women were able to substantially increase their income, doubling their monthly income from 600 to 1,200 PEN. This project thus empowered the women to not only increase resilience along the river banks for their community but also derive an adequate livelihood from the sale of the products they produce. Being easy to use and inexpensive, the medicinal plants have become an important treatment option for poorer households who cannot afford conventional medicines. For the future, the women are interested in developing the capacity to produce caramels, candies, and other products based on Tara.

Producing organic fertilizer

Gender and Youth Mainstreaming

This project was designed and implemented by women. Gradually, the spouses and children of the environmental activists joined the project which has by now become a family activitiy and even place to gather with their families for the holidays or other special celebrations. Through this bonding, the project contributed to a reduction in domestic violence in those families as the activities keep the families energized and lower daily stress. The recognition that the women achieved as income earners and capable environmental agents has improved their social standing and reduced discrimination.

Challenges

Gathering of the women environmental activists

The women suffered a number of setbacks including theft of irrigation equipment and destruction of the Tara plants by the criminals, who wanted to keep the area for themselves. However, the women succeeded in mobilizing the community, explaining the advantages of the project, and secured support from the local residents as well as the police. Thus, rather than being discouraged by these actions, the women grew more motiviated to succeed and carried on with their activities. With this motivation, the women managed to build a strong, united and well-managed organization.

Sustainability

The project resulted in strengthening of the women's organization. The women as environmental advocates have learned how to foster agreements among various stakeholders and developed their capacities in environmental management. They have learned how to reforest a degraded area, produce and market organic fertilizer and biodiversity products. To this end, they have been actively participating in environmental fairs where they promote their organic products.

Beyond Project Impact: Replication, Up-scaling and Policy Influence

Through the project the women managed to skillfully combine strategies for strengthen resilience to climate change with the conservation of endangered species and traditional knowledge, and water rehabilitation through an innovative biofilter. Based on the positive experiences, the project has already been replicated in several other districts of Lima, including El Agustino en Jatari Llacta, Comas and San Juan de Miraflores. The projects also contribute towards Lima's "Safe Schools Programme", which includes activities such as landscaping and clearing of garbage around educational institutions.

Demonstrating the benefits of the wetland

The biofilter has drawn widespread attention, attracting visitors from various parts of the country to learn more about this innovative technology. The bio-filter has already been replicated by another NGO in San Juan de Miraflores. Furthermore, the women have become interested in securing funding for a learning center for children in the zone to raise awareness about environmental degradation, conserving the environment for everyone and for future generations by achieving an environmentally–sensitive culture.

In December 2013, Secretary General Ban Ki-moon visited the project, noting that the project demonstrated a good example of how communities can contribute in combating climate change. In particular, he highlighted the efforts of women as agents of change in the community, praising their passion, creativity and ingenuity.

Lessons learned

Strengthening resilience to climate change through biodiversity conservation can be an effective, sustainable strategy, as evidenced here through this project. Improved livelihoods that are based on the resilience of the ecosystem can empower and motivate project participants. As evidenced by the "Promotoras Ambientales" , an environmental micro-enterprise can promote project sustainability, while remaining conscientious of environmental impacts and the importance of conserving the species for future generations. Furthermore, it is principally the capacity and strong engagement of "Promotoras Ambientales", who have sustained and will continue to carry on the project. The women maintained this strength despite all the challenges, showing how critical motivation and social cohesion is for the success of community-based projects.