Consejo Ecoregional Sierra Tarahumara AC.
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Tel 01 (614) 5755285
Chihuahua, Chih. México.

Project

Biocultural and Environmental Education and Training as a Strategy for Adaptation to Climate Change in Response to Limited Water Resources in Communities

Final Report

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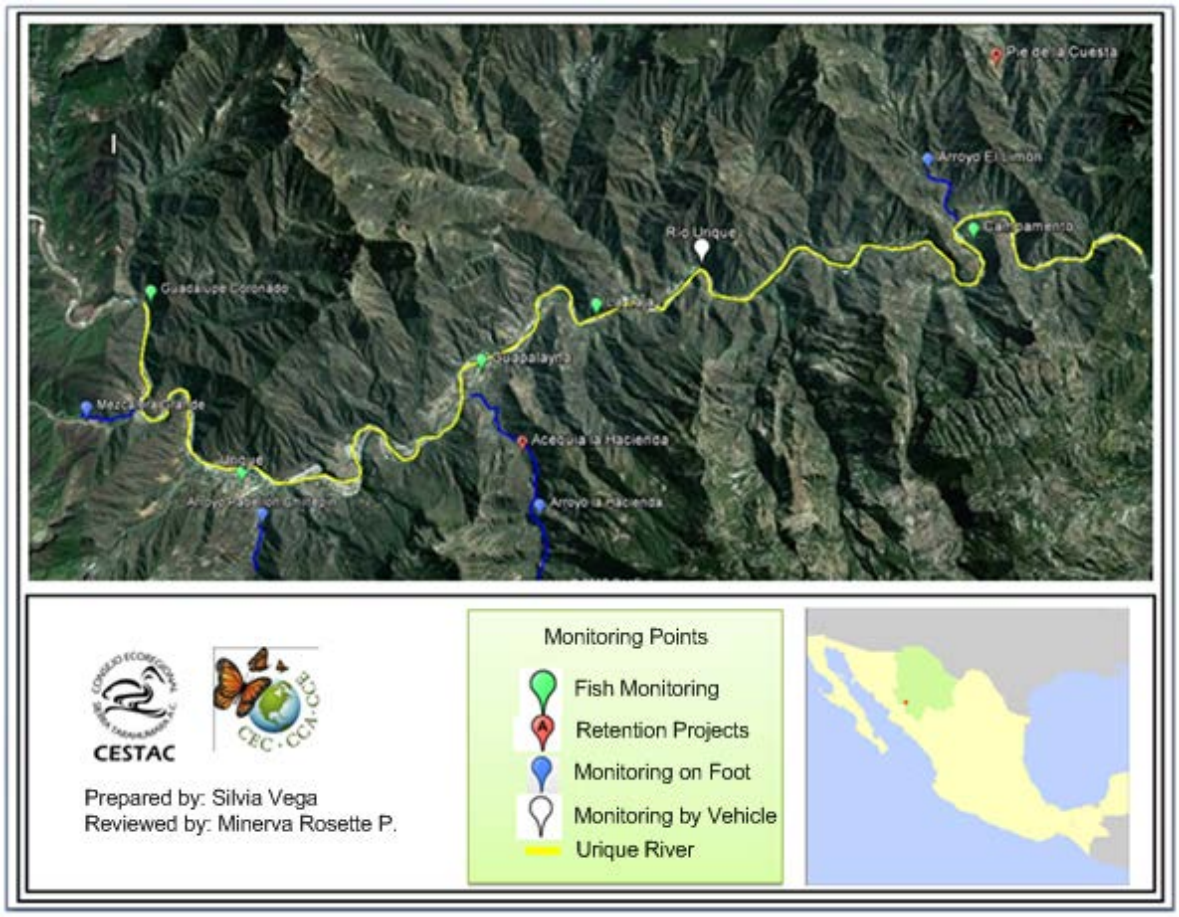
Summary

For nine years, *Consejo Ecorregional Sierra Tarahumara, A.C.* (CESTAC) has been working hand-in-hand with the Raramuri communities in the Sierra Tarahumara. Its community work has always been geared towards the conservation of natural resources and indigenous culture, defining strategies with regard to the traditional customs and practices of the indigenous and mestizo populations in the region. CESTAC has worked directly in more than 16 places across three municipalities in the State of Chihuahua, which the National Population Council (*Consejo Nacional de Población*) has classified as having high and very high levels of marginalization.

The project on Biocultural and Environmental Education and Training as a strategy for adaptation to climate change in response to limited water resources in communities was implemented in six communities in the Lower Tarahumara region in the municipality of Urique.



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Different partners participated in the project: the Commission for Environmental Cooperation (CEC) of North America; the Indigenous Rights Commission (*Comisión para los Derechos Indígenas*); the Secretariat of the Environment and Natural Resources (*Secretaría de Medio Ambiente y Resources Naturales*—Semarnat); the Tarahumara State Coordinating Office (*Coordinadora Estatal de la Tarahumara*); *Ecología y Comunidad Sustentable, A.C.*; *Pronatura Noroeste*; *EcoHuella, A.C.*; the US Fish and Wildlife Service (FWS), and the Rural Development Department of the Urique municipal government.

The Raramuri believe that their souls are joined with all wild plant and animal species sharing a place on Earth and that the destruction of the environment leads to species extinction, and thus the death of their culture. For this indigenous group, there is a very close relationship between bodies of water and the sacred spirits that guide them along the path to wisdom. Its traditions include the respect of and shrines to springs and bodies of water, home of the "Great Water Serpent," a spirit that travels through all mountain springs to keep them from drying out. All of this traditional knowledge is in grave danger, as new generations are losing the valuable ancestral teachings of the Raramuri people.

Moreover, the Lower Tarahumara communities have engaged in a participatory consultation exercise to determine the main challenges they face due to climate change, finding that their water sources are being variously undermined by low precipitation, pollution and overexploitation. Therefore, the community is interested in establishing a comprehensive strategy based on environmental training and education in all sectors of the population.

The project was intended to implement a comprehensive climate change adaptation strategy in response to the water conditions found in the region of the Lower Urique River and Sierra Tarahumara ravines, through an environmental training and education reinforced by conservation, restoration and monitoring actions based on the traditional Raramuri customs and practices. These actions include an environmental education program in primary, middle and high schools in the official and indigenous systems. In terms of restoration, maintenance was performed in an acequia canal supplying water to a town of more than 400 inhabitants, while water and soil retention works were undertaken in communities outside the main towns, giving more than 60 people the opportunity to participate in a temporary jobs program. To address community development and reduce pressure on natural resources, 30 rainwater catchment systems were installed with carbon-sand filters. This filtration system was also installed in 50 homes of families that draw water from the acequia.

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Results

During the project-year, the following tangible results were achieved:

1. Establishment of the basis for an environmental education program with respect to water, with effects extending to local and regional biodiversity.
2. Construction of rainwater catchment systems.
3. Implementation and appropriation of green techniques in hard-to-reach Raramuri communities.
4. Beginning riparian restoration works that, beyond their structural aspects, develop into community integration actions that instill an awareness of local resources.
5. Development of informational and educational materials appropriate to the local context.
6. Fostering other economic, social and environmental development strategies in communities, which in turn will translate into direct benefits (this “trigger effect” is perhaps the most important outcome of the project).

The project’s application led to a series of overall positive impacts on the communities. Specific successes include:

- Including water conservation issues in Raramuri cultural discussions.
- Directly involving women in all activities.
- Adopting an environmental education model in schools, with the direct collaboration of teachers.
- Implementing a model of participatory community monitoring.
- Creating a riparian restoration committee.
- Training three developers to install rainwater catchment systems and 50 persons interested in making filters.
- Construction and operation of 30 rainwater catchment systems, benefiting 55 families.
- Completing 14 riparian restoration projects.
- Designating heritage conservation areas that were proposed and supported by the communal farm board.