

Case Study 2: Water Governance to Enhance Community Resilience of the Tacaná Watersheds

Reviewed by: Aseem Kumar Anshu

1. Introduction

THE TACANÁ WATERSHEDS emanates from Tacaná volcano which is located at the adjoining borders of San Marcos, Guatemala and the State of Chiapas, Mexico. The watershed area constitute mainly of four rivers: the Coatán, Suchiate, Cosalapa and Cahoacán. Coatán and Suchiate watershed originate from the Tacaná volcano, whereas Cosalapa and Cahoacán make up sub-watersheds of Coatán river within Mexico. Geographic location of these watersheds make them of great political as well as strategic importance since Coatán and Suchiate rivers are shared by both the countries i.e. Mexico and Guatemala. A large number of population of both the countries, located downstream are dependent on these rivers. Domestic and agriculture are the major sectors which utilizes the water in Guatemala whereas in Mexico, agriculture, domestic and agribusiness utilizes 54%, 26% and 10% of water respectively. These watersheds are primary source of the water for irrigation in these areas. Agriculture is very diverse across the watershed areas. In the high altitude areas small agricultural farms dominates while corn growers are on the lower watershed areas. In the low and middle part of the catchment sugarcane, African palm, coffee and banana industries are situated. Further downstream, there is a great potential for fishing which makes it primary source of income for the local residents. Despite such great natural wealth, the Tacaná watersheds are vulnerable ecologically as well as politically Anthropogenic activities such as

- deforestation and degradation of the upper watershed by marginalised farmer
- large scale animal farming and unplanned waste water management
- river pollution from the sugarcane, African palm, coffee and banana industries
- degradation of soil quality due to large scale farming in lower and middle parts of the watershed
- water scarcity in dry season affecting agricultural productivity and coffee processing
- unregulated land use pattern resulting in soil erosion leading to increased risk of flood and landslides
- lack of coordination among government institutions, limited laws and regulations, lack of funds, absence of technical support, lack of policies and insufficient stakeholder's participation

2. Pre-intervention

To address these issues local government had already designed a resilience framework in the Tacaná Watershed area. Several community based pilot projects were initiated in response to these vulnerability by taking actions to conserve environment and eventually to escalate the livelihood of the people through Water and Nature Initiative (WANI). The existing framework was mostly

concerned with connecting ecosystems, human well-being and resilience from a system perspective and resilience was addressed through *diversity, sustainable infrastructure and technology, self-organisation*, and learning. However, feedback mechanism among private, public and civil society was ignored.

3. New Interventions

As the first step of new interventions a water planning and community management model was developed for Tacaná watershed through WANI with the aim to increase collaboration for water governance. The model was based on community participation, recognition of micro-watersheds as a planning unit, capacity building of community in integrated water resource management, enhance involvement of local political authority and strategic collaboration with government and non-government organizations for environmental management.

Under WANI project, 14 micro-watershed councils in Guatemala and 9 committees in Mexico were constituted which comprised of local government and communities living in Tacaná watersheds. The key role of the councils was to coordinate the resources management of shared water and land and critically integrate it with overall community development. The councils were also recognized by the government. Furthermore, the micro-watershed councils were associated with each other which helped them implement effectively and expand their actions to include watershed management at different scale. As part of the model in the midsection of the Suchiate River small coffee producers were included in projects for water conservation in coffee production and organic coffee production was promoted.

Under the micro-watershed approach, multi-level collaboration with the stakeholders was done to ensure implementation of the model. At the local level, capacity development programme were conducted for water managers at the selected planning offices of municipalities in Guatemala (Ixchiguan, Tajumulco, and San Pablo). At regional level collaboration with Community Development Committees were made to ensure the participation of the community in implementation and development parts of the project. At sub-national and national level collaboration was made with 16 government and non-government institutions to facilitate capacity building and training. After successful implementation of micro-watershed model at the local level, National Micro-watershed Commission of Guatemala was established to implement the model across the country.

WANI also empowered “Jóvenes en la Misión” (Youth in Mission, JEM), a youth-led cooperative enterprise who promoted sustainable water use and watershed restoration and at the same time generated livelihood through sustainable farming in Guatemala. WANI and JEM carried out 86 community pilot projects in Mexico and 21 in Guatemala for soil, water and environment conservation. Apart from that, the Living Water Partnership was composed who established payment for ecosystem services, a revenue generating mechanism for an environmental fund, to protect natural resources and restore natural environment. The first payment for ecosystem service was established in the municipality of San Pablo, Guatemala through this partnership in 2008. BY 201 it

was ready for implementation as water fund which was planned to be financed through the revenue collected as urban water tax.

4. Outcome

The model resulted in the increase in the system resiliency in Tacana watershed after implementation of the interventions. Through strengthening existing water management framework, increasing collaboration with multilevel stakeholders, adoption of bottom-up approach for water governance and ensuring escalation of livelihood along with capacity building addressed the four key goals of the interventions which are *diversity, sustainable infrastructure and technology, self-organisation, and learning*. In a nut shell, interventions such as crop diversification, encouraging afforestation with native species, sustainable organic farming and livestock management, sustainable water management techniques in the agro-industries, formation of micro-watershed councils as unit of water management, participatory approach towards water governance and capacity building at all tier of stakeholders enhanced adaptive capacity of the community and system's resilience towards environment degradation and disasters in the Tacana watershed area.

(Source: The Tacaná Watersheds. Developing Untapped Potential: Strengthening Resilience through Cross-Sectoral Collaboration, Stefano Barchiesi, Rocío Córdoba by IUCN)

About the author



Aseem Kumar Anshu is currently working as Programme Officer (Policy) at Centre for Environment, Energy and Climate Change, Asian Development Research Institute. He has done Bachelor of Engineering and Master of Science in Biotechnology and currently pursuing Ph.D in Biotechnology. He has 5 years of research experience in Environmental Toxicology and Oncology.