

Mexico



Organization: Espacio de Encuentro de las Culturas Originarias (EECO)

Location: Oaxaca, Mexico

Solution: A technological package that involves the installation of fog-catchers, water channels and live barriers to increase the resistance of crops, improving the income and health of Indigenous communities

Factsheet Period: First round of UNDP AFCIA funding (18 months)



Community members checking water channels systems, that ensure 85% crop survival during severe frosts - @EECO

Oaxaca, Mexico's most climate-vulnerable state, faces extreme risks from droughts and frosts affecting 83% of its municipalities, severely impacting agriculture and biodiversity. Indigenous communities in Mexico face severe water scarcity, exacerbated by climate change, and loss of crop productivity. To address these challenges, the EECO initiative combines traditional knowledge with fog-trapping technology to enhance water availability and resilience against extreme weather, helping reduce the vulnerability of crops and wildlife to extreme climatic events.



Key achievements

- “Waru waru” water channel systems ensure 85% crop survival during severe frosts and 93% during droughts. In contrast, traditional methods result in only 30% survival during frosts, with crops often failing completely during droughts
- 15 Indigenous “waru warus” and seven fog catchers built and installed
- 75 women supported to lead the awareness and competency with agri-tech
- 20% increase in family income due to community-maintained surpluses in vegetable production
- 15 species of fauna that drink water from the canals (biodiversity represented by birds, mammals, reptiles, amphibians) recorded due to water increase in the area



Social impact

- Empowered women in agro-farming through inclusive practices
- Improved agricultural reliability and water quality
- Increased crop survival rates, boosting community nutrition and income





Adaptation benefits

- Reduced crop vulnerability to frost and drought
- Two agricultural cycles enabled annually
- Water sources for wildlife during droughts
- Improved soil quality, pest control, and reduces erosion
- Microclimates generated, moderating temperatures and saving production



Innovation

- Integrates ancient technique with fog-trapping to boost canal water flow and capture mist water
- Ensured consistent and reliable water supply in dry areas
- Provided unique, low-cost solution for frost-related crop loss
- Reduced wildlife water stress and soil erosion through improved irrigation



Replication potential

- Techniques are easy to use, maintain and install
- Offers a scalable and replicable approach and applicable to build agricultural resilience in other drought and frost-prone regions



Funding snapshot

- UNDP-AFCIA grant: US\$120,000 (first grant: \$60,000; scaling grant: \$60,000- under implementation- data still unavailable)

Investability

Financial innovation	Microfinancing to enable small-scale farmers access to necessary resources without the burden of traditional loan structures Integrating in-kind contributions and collaborative funding from international organizations
Expected return	Increased agricultural productivity and resilience, resulting in a 20% increase in family incomes and greater food security