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); Second round of UNDP AFCIA funding (16 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

- Applied traditional *waru waru* water channel systems, increasing crop survival to around 85% during frosts and 93% during droughts compared to much lower survival with conventional methods
- Installed 38 *waru waru* systems, 7 fog catchers and 12 large cisterns, improving water storage and availability, especially during the dry season
- Installed 38 solar-powered drip irrigation systems, enhancing crop quality and productivity while saving water and energy and preventing soil erosion
- Trained 23 beneficiaries in flower and vegetable cultivation, enabling successful harvests that improve family nutrition, support local consumers and strengthen sustainable farming skills and livelihoods
- Enabled the cultivation and production of 23 types of vegetables and flowers, increasing diversity and productivity on small plots
- Improved production and supported community-maintained surplus crops, contributing to an estimated 20% increase in family incomes and stronger food security

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

- Enables two agricultural cycles annually, reducing crop vulnerability to frost and drought
- Strengthens climate adaptation through the use of ancestral knowledge and technologies (*waru waru* and drip irrigation), improving production and preventing soil erosion
- Fosters the exchange of seeds and planting ideas, supporting knowledge sharing
- Water sources for wildlife during droughts
- Provides water sources for wildlife during droughts
- Improves soil quality and pest control while reducing erosion
- Generates microclimates that moderate temperatures and protect crops

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

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

Funding snapshot

- UNDP-AFCIA grant: US$180,000 (first grant: $60,000; scaling grant: $120,000)

Investability	
Revenue per year	Crop survival, soil quality and staggered planting have allowed families to meet their self-consumption needs with only 20% of the harvest and to sell 65% to increase their income
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

ADAPTATION FUND Climate Innovation Accelerator

ADAPTATION FUND

To read their story, visit UNDP-AFCIA
To watch their video, click here
To contact the organization, visit EECO