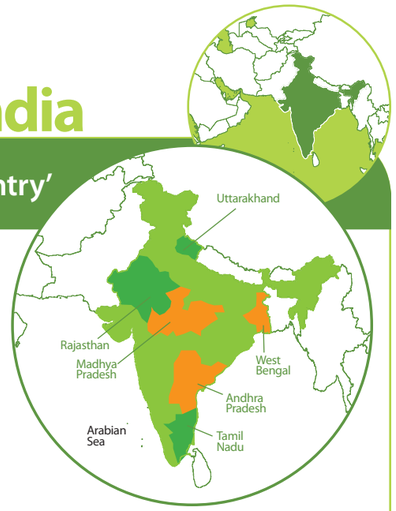
ADAPTATION FUND

Adaptation Story: India

'Creating Diverse and Tailored Models Across the Country'



India is taking an innovative approach to combatting climate change by establishing six small-scale Adaptation Fund projects on the ground in diverse regions of the country across a variety of adaptation sectors.

Developed through the Fund's national implementing entity in India, the National Bank for Agriculture and Rural Development (NABARD), and implemented together with local organizations, projects are taking place from the northwestern Himalayas, to the central Madhya Pradesh region, to the eastern, to Rajasthan in the west and the eastern and southern coasts. They are tackling sectors tailored to the local adaptation need, from climate-smart agriculture to food security, fisheries, forestry, managing coastal zones, and collecting and conserving water.

Rather than pursuing just one or two larger projects with the overall funding allocated by the Fund, NABARD's unique approach is breaking ground in adaptation by piloting diverse models and establishing the needed networks and experiences to share knowledge to make wider change across the large country.

Mixed cropping in West Bengal.

For example, in India's southeastern coast of **Andhra Pradesh** increasingly intense cyclones and flooding related to climate change have taken their toll on the vulnerable Krishna delta, placing valuable agricultural land and water resources at high risk for saltwater surges.

A community-based project funded by the Adaptation Fund is making inroads in stemming this tide by restoring degraded mangroves along the Krishna estuary and creating new livelihoods through integrated mangrove-based fish farms.

Led by the locally-based M.S. Swaminathan Research Foundation through NABARD, the US$ 689,264 project is helping the highly climate-vulnerable area address sea level rise and coastal erosion.

To date, 100,000 mangrove saplings have been raised in nurseries -- a crucial process to mangrove restoration since they help mangroves build stronger roots and enable them to become accustomed to saltwater environments for several months before being transplanted to degraded areas. Plantings have resulted in varying success, and there are plans to plant many more.

The local community has been closely involved in gathering seeds from the mangrove forest for planting in nurseries, as well as planning and digging canals in degraded areas near vulnerable spots like Basavanipalem village to facilitate flow of tidal water and mangrove growth. Community trainings in mangrove restoration have been held to share techniques for seed collection and storage, canal digging, and planting, managing and monitoring mangroves.

The project has taken an active role in involving women and men in activities, which is aligned with the Fund's gender policy. As men slope canals and women plant mangroves, villagers earn income through these restoration efforts and remain directly engaged in raising and planting mangroves to reestablish the natural systems that protect themselves from floods and erosion. "My village is highly vulnerable to disasters and erosion because it is close to the sea and without any vegetation," said **Mr. Nadakuditi Adinarayana,** a Basavanipalem community member.

Community prepares degraded area for mangrove planting in Andhra Pradesh.

ADAPTATION COUNTRY spotlight

India: six projects funded by the Adaptation Fund (AF)

Total AF grant funding: US$ 9.85 million

National Implementing Entity: National Bank for Agriculture and Rural Development (NABARD)

Regions of India covered by projects: Madhya Pradesh, Northwest Himalayas, Rajasthan, Tamil Nadu, Andhra Pradesh, West Bengal

Adaptation sectors: coastal zone management, agriculture, water management, forestry, food security

Direct Access projects: AF's pioneering Direct Access modality empowers India to access AF funding and identify and develop projects directly through AF's national implementing partner based in the country (NABARD)

ADAPTATION FUND

Adaptation Story: India

"Direct Access gives India flexibility to design and implement adaptation projects in diverse regions of the country and across different, tailored adaptation sectors, as we try to reach more vulnerable communities with urgently needed climate actions and produce models that can be replicated or scaled up."

– Shri. H.R. Dave, Deputy Managing Director, NABARD

The project is further building the community's capacity to protect its coasts and livelihoods over the long run. Key stakeholders and organizations have been mobilized, and knowledge shared in applying these techniques across vulnerable areas.

Integrated Mangrove Fishery Farming Systems are also being demonstrated in lands owned by small aqua farms to establish models for farmers to sustain incomes while providing protections to coastal villages from cyclones and sea surges through surrounding raised embankments to control water flow.

"The mangrove ecosystem is very important as it protects from the disasters, and also helps us to earn a livelihood through fishing," said **Ms. N. Samudraveni,** a Basavanipalem villager.

Meanwhile, another Adaptation Fund project in the semi-arid northwestern state of **West Bengal** is building adaptive capacities and increasing climate change resilience of small vulnerable farming families in the Purulia and Bankura Districts. The US$ 2.51 million project carried out by the Development Research Communication and Services Centre through NABARD focuses on enhancing adaptation capabilities in 5,000 households covering over 22,500 beneficiaries by diversifying livelihoods, adopting climate-resilient technologies and sustainably managing natural resources.

Sea bass catch from fish farm in Andhra Pradesh.

Multilevel crop arrangements and diversified, integrated farming practices are being introduced to improve production. The project employs technologies and ecosystem-based approaches to both enhance agricultural productivity and environmental sustainability, including sustainable soil and water conservation measures, step pond water and fish harvesting, intercropping, agroforestry plantations and organic farming. Climate-resilient methods used include drought- and heat-tolerant field crops, fast-growing plants, micro irrigation, low-cost water filtration, wasteland reforestation and disaster-coping measures such as establishing community grain, crop and seed banks. Preparing land and water use master plans, reducing climate risks through early warning systems in local languages, and sharing best practices are other key elements.

According to a case study by Japan's Ministry of Environment (bit.ly/2JSwpnK), commitment of local experts and NGOs provides ownership to the affected West Bengal communities and ensures the right adaptation measures are deployed while NABARD can potentially scale up good practices nationwide through its local offices.

According to **NABARD,** the six projects funded by the Adaptation Fund are reaching diverse climate-vulnerable communities and opening doors in different regions of India to receive targeted adaptation solutions. NABARD's experiences with the Fund have further empowered it to contribute to India's national adaptation plans and serve as the implementing entity for India's National Adaptation Fund.

BY THE NUMBERS

TOTAL DIRECT BENEFICIARIES: 74,461
TOTAL INDIRECT BENEFICIARIES: 100,194

ANDHRA PRADESH:

35,000 HA OF AGRICULTURE LAND IN COASTAL VILLAGES AT HIGH RISK TO BECOME SALINE DUE TO SEA LEVEL RISE

AT LEAST **60%** OF PEOPLE (NEARLY 50% WOMEN) LIVING IN PROJECT VILLAGES DIRECTLY BENEFITING FROM REDUCED VULNERABILITY TO CLIMATE CHANGE

200 COMMUNITY MEMBERS TRAINED IN MANGROVE RESTORATION AND 50 FARMERS (40% WOMEN) TRAINED IN FISH FARMING

50 HA DEVELOPED INTO FISH FARMS WITH 600 MANGROVES PER HA

4 PUBLISHED MATERIALS ON WAYS TO SCALE UP COASTAL PROTECTION AND LIVELIHOOD SYSTEMS

320,000 MANGROVE SAPLINGS PLANTED ACROSS 200 HA FOR DEVELOPING MANGROVE NURSERIES

WEST BENGAL:

40 STEP PONDS ESTABLISHED

40 WEATHER KIOSKS AND 18 AUTOMATED WEATHER STATIONS ESTABLISHED TO IMPROVE CROP WEATHER ADVISORIES

40,300 HA OF EARTHWORKS FOR SOIL AND WATER CONSERVATION

2,500 LOW-COST WATER FILTERS PROVIDED FOR FAMILIES, AND 2,400 ENERGY EFFICIENT OVENS

MADHYA PRADESH:

5,000 FARMERS RECEIVING CLIMATE-RESILIENT TOOLS TO FOSTER ORGANIC FARMING

896 GENDER-FOCUSED CLIMATE RESILIENCE TRAININGS EMPOWERING WOMEN IN 56 VILLAGES

1,800 HA OF WATERSHED IMPROVED WITH EFFICIENT IRRIGATION SYSTEMS

NORTHWESTERN HIMALAYAS:

800 FARMING HOUSEHOLDS RECEIVING IMPROVED AGRICULTURAL DATA, DEWORMING AND VACCINATIONS TO MAKE CATTLE CLIMATE-RESILIENT

TAMIL NADU AND RAJASTHAN:

GROWING SHORT DURATION CROPS THAT MATURE IN JUST **60-70 DAYS** TO HELP VULNERABLE FARMERS ADAPT TO LATE SOWING CONDITIONS