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INDIA: Rural Communities Turn to Traditional Climate Mitigation

By **Keya Acharya**

MADURAI, India, Aug 5 (IPS) - In Tamilnadu, southern India, and Uttar Pradesh, northern India, villagers have revived ancient systems of storing surface and groundwater that are putting them in a good position to contend with today's changing climate.

The villagers' initiatives, helped by NGOs, are supported by Oxfam India - a newly formed branch of the international charity - which now advocates these practices as adaptation models for all of India.

"There are several on the ground examples on how the rural poor can adapt to climate change," says Aditi Kapoor, economic justice specialist at Oxfam India. "These are models that can be replicated by the government."

As per the Intergovernmental Panel on Climate Change (IPCC)'s recent report, India's monsoons will undergo significant change, increasing in intensity while decreasing in duration. That change is predicted to negatively impact India's farmers, 60 percent of whom are smallholders.

In the rain-shadow state of Tamilnadu where rivers flow only during the brief winter rains following the northeast trade winds, the Gundar river basin supplying water to Madurai and its surrounding four districts, remains the most drought-prone.

Climate change has currently turned the rains here unpredictable and intense when they do fall - causing destructive flash floods and related disasters.

Now, an ancient watershed system dating from 300 BC to 200 AD that channelled these seasonal rains through anicuts and feeder canals into man-made water-troughs called 'tanks,' is being revived.

Historically, water was stored in different systems dug into the earth for agriculture, drinking water and domestic purposes. Tamilnadu's granitic rock-base provides an ideal leak-proof base for storage.

The Dhan Foundation, working in 12 Indian states, is now working with local communities and the government to repair and reuse these ancient storage systems that served for millennia in drought mitigation and water conservation.

"What is very significant," says MP Vasimalai of Dhan Foundation. "Gundar's farmers are already knowledgeable about adapting to climate change, because the systems of flood mitigation and drought moderators have been with them since ancient times."

The Foundation has organised villages with tanks to form a watershed association or 'Vayalagam' with paying members. Those using or benefiting from a tank's repair are taxed according to the size of their land holdings.

The money pays in part for repairing the tanks and canals. The remainder of necessary funds are garnered from either government schemes or donor grants.

"That is our success, they pay," says S. Sethuraman, Vayalagam president of the ancient Villur tank in Madurai district.

The Vayalagam also has a savings and loan system, keeping at least Rs. 20,000 (approx 480 dollars) as a drought-relief fund to be either used for tank-maintenance, or to be given as a loan to those wanting to conduct soil and water conservation.

The repairs and subsequent water-collection has been effective enough to extend the area of the tank from 25 acres to 100 acres and Sethuraman's paddy-yield has increased by 750 kilogrammes per season.

At Parepatti village, Dhan Foundation has helped poor women from the lowest social rung in India to de-silt and reconstruct the ancient Kanmoi tank.

54-year-old Manjamma of Parepatti organised the women into various watershed associations and collected subscriptions for repairs.

"The men did not come forward", she says. But once the tanks started working, "the benefits were open for all to see," says Manjamma. "The cattle got water, the women grew greens along with the paddy which doubled in produce and there was enough water to harvest a second crop of millets."

So far, 400 of Madurai district's 2000 tanks have been repaired and are in use again, but A. Gurunathan of Dhan Foundation says they need 7-12 years to make the entire catchment is sustainable. "Or else it won't work," he says.

Madurai district's top administrative official, District Collector Udaya Chandran, is familiar with the villages' tank-restoration efforts.

He says that a competent third-party agency, like Dhan Foundation, can help bring about community spirit that can be harnessed by government schemes.



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"This is one area where all stakeholders come around and start working jointly," says Chandran.

Thousands of kilometres north of Madurai, in the stark, ravine-dominated landscape of Bundelkhand in Uttar Pradesh, villages within an 80-kilometre radius have, very successfully, contoured their dry, degraded lands, built 'bunds,' spillways and small checkdams to help hold whatever rains fall and in turn to recharge groundwater.

In Sunderpura and Tajpura villages here, farmers can now source groundwater through tube wells for their crops, whatever the weather.

Using natural systems of bio-composting with farmyard manure and bio-pesticides, nearly 25 acres of land in Sunderpura village have now been irrigated for the first time.

"The bonus is that wastelands have now become constructive agricultural lands with a safety-system against climate change that has also checked migration to cities," says Anil Singh of Parmarth, the NGO initiating the work with Oxfam's support.

In Tajpura village, 42-year-old Ajan Singh's low-cost, natural-input system of cultivating vegetables now has such a reputation for quality that all his produce gets sold locally at higher-than-market rates.

Singh nets a minimum annual Rs. 40,000 (1000 dollars) through a system that will stand him in good stead to cope with lessening rains and rising temperatures in the region.

"So it is not that these people do not know about the ecological impacts of climate change," says Radhey Krishna. "It is inbuilt in them because of their [dry] landscape."

"All the fields have bunds," says 40-year-old Bituli, leader of a self-help group formed with help from an Oxfam-aided women's empowerment NGO Samarpan.

The villagers' indigenous method of agriculture using bio-compost, intercropping and local seeds is as ancient as Tamilnadu's community tanks - but government policies encouraging monoculture, chemicals, and hybrid seeds had broken this age-old practice.

(END/2009)

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