

Keya Acharya: India's 'constant gardeners'

Local communities are creatively adapting traditional knowledge to cope with climate change

Keya Acharya / August 21, 2010, 0:41 IST

In some remote villages in India, which are most unlikely to pose as models of development, a quiet rejuvenation is taking place, with communities learning to adapt to the climate change reality of the country today.

Everyone knows by now that one of the foremost signs of climate change for the country is the changing pattern of the monsoon. The Intergovernmental Panel on Climate Change (IPCC) has already forecast shorter yet more intense monsoons, impacting two-thirds of India's farmers (IPCC Fourth Assessment Report 2007), quite apart from the domino effect this has on the country's economy.

Interestingly, a 2009 Oxfam-India field study in Bundelkhand in UP and MP, Tamil Nadu and coastal Andhra Pradesh shows that reviving ancient water systems, linked with low chemical-input agriculture, which is sometimes a mix of traditional knowledge and "newer" methods, have helped poor farmers devise an effective strategy to cope with the changing monsoon.

In Tamil Nadu, a rain-shadow state that receives mostly cyclonic rains during October-December, with rivers drying out thereafter, the Gundar river-basin "feeding" Madurai and four surrounding districts remain most vulnerable. "I have seen, even as a little boy, that we cannot stop floods," says 62-year-old Gandhi, a farmer from Vellinipatti in Ramanathapuram district ("Vellinipatti" means "flood-protection" in Tamil). "But now the rains are very heavy over a shorter period, causing frequent floods. Earlier we knew the seasons. Now we don't understand why this is happening," he says.

This region had an ancient, intricate watershed management system from 300 BC to 200 AD that channelled these seasonal waters into different systems dug in the earth, using the granitic rock base as leak-proof storage. A neerkatti, or water manager, appointed by the village was responsible for judicious distribution and conservation. The system served for millennia in mitigating drought but fell into disuse with, first, a colonial and, then, a post-independence governance system that usurped control of these water bodies. Deprived of ownership and their share of tank waters, local societies let them go to ruin.

Today, NGO Dhan Foundation has helped local communities revive this ancient system, complete with a village neerkatti. Villages contribute at least a quarter of the budget needed for renovation through a watershed association or vayalagam with paying members. Those benefiting from the tank contribute according to the size of their holdings at Rs 300 per acre. The remaining amount is received from government schemes or donor grants. The vayalagam also keeps Rs 20,000 for drought-relief, tank-repair or loans for soil and water-conservation. For the 20 per cent of the vayalagam's landless, fish-farming offers a livelihood.

The results are remarkable. Villur's ancient tank in Madurai district has now extended its command area from 25 acres to over 100 acres. Elsewhere in Sirkurni, communities now use inter-cropping to beat unpredictable rains, sowing cotton in August-September, interspersed with lentils like red and black gram. The black gram is reaped in three months, the red gram in six months and, the cotton in nine months. If the cotton fails for lack of water or other reasons, the lentils balance it out with their varied cropping periods.

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

Why are these more successful than government watershed schemes? A Gurunathan of Dhan Foundation says vayalagams have given a sense of ownership to the communities, who now maintain their own tanks. "But we need 7-12 years to make the entire catchment sustainable, otherwise it won't work," he asserts.

Half a country away, in UP's ravine-filled Bundelkhand, land-contouring through checkdams, spillways, bunds and channels to recharge groundwater from the sparse rains have also made significant improvements. Villagers in places like Tajpura and Sunderpura in Jalaun district now have adequate groundwater to enable tubewells or revive old wells to grow their own crops, irrespective of the weather. Using natural systems of bio-composting with farmyard manure and bio-pesticides, such as marigolds and watering from a tubewell, villagers have irrigated 75 bighas of land in Sunderpura for the first time with help from NGO Parmarth. .

"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.

In Tajpura, farmers say vermi-composting the same farmyard manure doubles the produce. Ajan Singh and his wife Mamtadevi have managed to save over Rs 80,000 by growing organic vegetables on their one bigha of land. Their low-cost natural-input management system of cultivating vegetables has such a reputation for quality that all their produce gets sold locally at rates higher than market prices. Singh nets a minimum annual Rs 35,000-40,000 in a system that will stand him in good stead with reduced rains and rising temperature in the region.

The answer, thus, seems simple enough: revive old ponds, build new ones and teach the villagers how to manage it on their own. In other words, go back to old systems and bring people into the fold of responsibility.

It is the implementation of this that remains fragile. And since rural costs of water, natural-disaster management, food

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shortages and health issues are inherently linked to urban economics, we in the city are equally vulnerable if that rural pond goes dry.

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