About this issue

India is known to be one of the most disaster prone countries in the world. The country's exposure to various hazards is exacerbated by its social, economic, natural, structural and ecological vulnerabilities. Climate change adds another layer of complexity to the already enhanced vulnerability profile of the country. For, it has lead to an increase in the severity and frequency of disasters in recent decades. This necessitates adaptation to climate change in India.

This issue of *Southasiadisasters.net* focuses on the theme of Successful Community Based Adaptation in India. It tries to highlight how low-cost, democratic and need based adaptation strategies have been successful in India. The primacy of local level adaptation strategies are stressed as the basis of effective community based adaptation. This issue depicts the best practices in community based adaptation that range from WOTR's efforts to upscale adaptation in India to GIZ's experience in integrating climate change adaptation in sectoral policy formulation and from the instances of successful community based adaptations in Odisha to the role of GIS in facilitating effective community based adaptation.
Since climate change has the greatest impact on the lives of poor and marginalised communities, it is only proper that adaptation to this threat should be democratic, low cost and need driven. India through its experience of combating this threat in the last decade shows a promising path for others to emulate. Read on to know more. ■

– Kshitij Gupta, AIDMI

LOCAL LEVEL DRR

Up Scaling Local Adaptations in India: What Works!

Climate change is emerging as a recurring silent disaster on the global stage. With each passing day it is becoming more and more precarious not just to humankind but all the living species on this planet.

India now is a country which houses at 17 percent of the world population thriving on four percent of water resources. Apart from this it is ailed by a and a plethora of socio-ecological problems, often with the root cause of lack of resources and knowledge. This is further exacerbated by variations in climate and lack of capacity to respond adequately and mitigate the consequences. A report by IFPRI (www.ifpri.org) indicates that South Asia will be hard hit by climate change and irrigated yields of almost all crops will decline significantly resulting in declining production. About 57 percent of Indian population solely depends on agriculture and allied activities (Census, 2011), hence climate variations leading to drought, flood, heat wave, frost events are disasters that significantly cripple their economics and natural resources.

India has a diverse topography and climate therefore one set of methods/ practices cannot be applied to the entire country to prevent and diminish the perils of climate change on biosphere and its components. About 69 percent of the land area falls under dry land (4th national Report to UNCCD). However, maintaining ecosystems' integrity and preserving their inherent characteristics help to make ecosystem more resilient to climate change. In India, as elsewhere, the effects of climate change will vary significantly and hence no one- size-fits- all approach could be built to mitigate the risks associated with it.

WOTR follows an approach which builds on knowledge embedded in the communities but stay hidden among the uncommon. There is a need to expose that knowledge, those measures which are specific for the considered community and their natural systems.

There is a box of adaptation which has been formed by on-ground experiences, success and failure of WOTR with the people, communities

Furniture made of Lantana- an invasive species.

and ecosystems, especially drylands. This includes conservation of resources, use of indigenous crop varieties *(rice like jirwel, ambemohor, varangal, kalbhat, tamkudai, dhawal, kolapi, tambada, raibhog, khadkya, zini; and wheat like Bodka and Bakshi; finger millet (nachani), french millet (varai), niger seeds (khurasani), samai (sava), jowar, (sorghum), maize, and horse gram (hulge)* etc.), crop intensification and diversification, organic manure, mulching, water budgeting of surface and groundwater resources as some of the methods knitted with watershed development to scale up the production, prevent and adapt to climate disaster.

Safeguarding of native biodiversity plays a very important role in adapting to shocks and stress, for example in the villages where WOTR work, people grow indigenous varieties of cereals and rice which are resistant to climatic anomalies majorly drought. Another example is the use of invasive species like *Lantana* for fuel and preparing bio-char, making furniture out of it as an adaptive measure for controlling its invasion; people also maintain records of their floral and faunal biodiversity along with their uses like wild edible species, natural/ biological pest control methods, medicinal properties of plants and many more.

Water resource conservation has been the maxim of WOTR through augmenting water resources via watershed development and managing water within the watershed through careful and planned water budgeting specially in the drought prone region of Maharashtra. With watershed development people gained access to water but due to unplanned and imprudent use, water resources soon started to diminish. WOTR, then took water budgeting approach to address the problems pertaining to water scarcity and developed a "How-To" Methodology, a tool on Water Budgeting and an interactive IT-enabled "*Water Budgeting Game*" that simulates scenarios resulting from different water uses and cropping patterns in given rainfall. Villagers now make their crop plans prior to sowing for *rabi* season taking care to secure sufficient water for livestock and domestic purposes in summer. They also began adopting efficient irrigation methods (drips, sprinklers, and other micro-irrigation systems) to conserve water and enhance production.

Villager applying Amrutpani to their farm–Organic Manure.

Given the multiplicity of possible solutions, they have to be chosen and custom-made to fit the geographic, socio-economic characteristics and needs of the local community. Up-scaling such set of adaptation practices befitted with local knowledge into adaptation solutions has helped communities to extract maximum benefit in WOTR villages. ■

– Neha Gupta, Watershed Organisation Trust (WOTR), Pune

- India houses 17% of the world's population with 4% of its water resources.
- Climate change has made almost 57% population of India dependent on agriculture, extremely vulnerable.
- WOTR has been helping communities in India to evolve successful community based adaptation strategies to combat the adverse effects of climate change.