



## Strengthening local adaptive capacity – the key to sustainability in the face of climate change

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Persistent drought... incessant rain... flash floods... hurricanes.... forest fires... hardly a day passes without a news item on how climate change is affecting people's lives and livelihoods. Climate change poses countless challenges for farmers, pastoralists, fishers, forest dwellers and others who depend on natural resources for their living. Poor rural communities, especially women, bear the biggest brunt of such climate-related disasters. Yet, the initiatives of these very communities to respond to change offer entry points to sustainable processes of climate-change adaptation (CCA).

The challenge of climate change calls for action to assist vulnerable communities to cope and adapt. And this is precisely the kind of action that PROLINNOVA – a global partnership programme of GFAR for PROmoting Local INNOVATION in ecologically oriented agriculture and natural resource management – has been pursuing since 2004. PROLINNOVA recognises the “grassroots” initiatives of affected communities in dealing with climate change not only to protect but also to enhance their livelihoods. Such adaptations build on local creativity and are often cheaper, suit the specific circumstances better, make better use of available resources and are more sustainable than large-scale interventions.

Three countries in the PROLINNOVA network – Nepal, Niger and Ethiopia - studied rural people's perception of climate change and their creative responses to it. The results of these and some other studies revealed that many rural people have, on their own initiative, developed innovations to cope with perceived changes in rainfall, wind patterns or temperature, although often not consciously linking these to global climate change.

In Ethiopia, pastoralist communities in Afar region observed longer dry seasons and more frequent drought, but also population growth, influx of migrants, higher incidence of livestock disease, more difficult access to water and increased conflict. Their responses include cutting and carrying fodder and making private and community below-ground cisterns to store water. Some pastoralist groups in southern Ethiopia have replaced cattle with camels and goats that can survive longer periods without water or sold some stock to buy trucks for multiple uses, including water transport for their families and herds.

In Nepal, resource-poor farmers developed crop-related innovations to cope with frequent flooding, changes in monsoon timing and increased incidence of landslides. In drier areas, farmers now plant garlic at the base of cut paddy, mulched with paddy straw, to minimise the use of irrigation water and to save on tillage costs. To produce more food, some farmers now grow millet in winter after the potato crop rather than leave the fields fallow. In flood-prone areas, farmers have created hanging nurseries on raised platforms to protect their seedlings. Through crossbreeding, farmers have developed maize varieties that withstand lodging and can be grown in wetter conditions.



In Niger, farmers perceive higher temperatures, more dust and wind storms, less annual rainfall and longer drier periods. Local adaptations include making more use of donkeys — a hardy and low-demanding species — than in the past; new arrangements between herders and farmers to graze animals on crop residues; and collecting hay from communal land to use as dry-season fodder. In fact, older women have introduced an innovation into marriage arrangements. They are giving donkeys as dowry to their daughters to ease their burden in carrying water when they marry men from villages with water shortages.

PROLINNOVA partners, in their research and development interactions, have recognised and built on such creative ideas of farmers. They give attention to identifying, documenting and supporting local innovation processes and the innovations that result from them. These local innovations serve as entry points for initiating participatory innovation development (PID) or farmer-led joint research — a process in which scientists and development agents join with farmers to further develop, adapt and test these local ideas and initiatives, integrating local knowledge and scientific knowledge.

The PID approach promoted by PROLINNOVA has many attributes: it focuses on the positive — on farmer's strengths and creativity; it gives non-farmer partners such as scientists and extension workers a greater appreciation of local capacities; it builds mutual respect among all partners in joint research; it stimulates farmers to value their own knowledge, ideas and skills; it provides solutions that are less costly and more site-appropriate in comparison with most conventional agricultural research; it enhances the confidence of farmers and gives them greater control over their own development. All of these attributes contribute to the core of the approach most valued by PROLINNOVA partners: building the adaptive capacities of farmers and their communities to deal with change. Local people involved in this process become more proactive, are better able to analyse their situation, learn to pool their energies and knowledge, and become better linked with other actors with whom they can continue to design and implement adaptive actions to address emerging problems. They thus become more resilient to shocks and stresses in a constantly changing environment and are able to adapt accordingly. This empowers communities to be resilient and develop sustainably in the face of climate change.

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