POLICY BRIEF

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SWITCH HUPSEKOT

Diversifying Sources of Climate Resilience among the Marginal Farmers of Baseni Village located on Mountain Ridge in Western Nepal

Drought is becoming a new normal in the hills of Nepal with immediate impact on agriculture-based livelihoods.

There is not an all accepted process of defining a state of drought. Because, variables leading to drought differ from place to place. A state of drought is largely determined by climate parameters (rainfall and temperature) of that place and presence of or lack of functional man-made water facilities such as irrigation and drinking water. For example, in a rain dependent farmer's village in Hupsekot, only a few weeks without rain in the first monsoon month of June will affect paddy farming—a major source of food and livelihood base. This is drought for them, while in the cities of Kathmandu or Pokhara, similar meteorological phenomena have hardly any impact. Thus, drought is a period of dry weather that persists long enough to cause crop damage or disrupts water supply, among others. However, with rainfall as a parameter, the World Meteorological Organization defines drought as a state of 15 consecutive days with less than 1 mm rainfall, it would otherwise not be the case. Studies demonstrate that such incidence has been on the rise and climate-induced drought hazard is emerging as one of the major challenges in the western hills of Nepal. Further, the predictability of rainfalls across all four seasons of a year has reduced considerably compared with the past, and the risk of drought has

POLICY MESSAGE

- Local Government must consider climate change as a risk multiplier for existing subsistence agricultural practices as climate and water are directly linked. More importantly, the attention must be paid to developing resilient agricultural practices with regard to prioritizing irrigation facilities as a drought resilient long-term measure.
- It is important to diversify the local livelihood cash and assets base as a source of climate-adaptation and resilience-building.
- To enlarge the financing base, ensure ownership over the water intervention and reduce the risk of failure, the multi-stakeholder financing model of cooperation can be an approach to consider by (local) governments and non-state development actors.

increased. The grip of drought becomes particularly severe between the end of March and the beginning of the monsoon rain in June, resulting in drying up of water springs and drinking water shortages in the hills. Winter drought has a direct impact on the winter crops, particularly wheat.

Baseni village located on the ridge of the lower reach of the Mahabharat range in Hupsekot Rural Municipality is no exception to experience of a rising trend of drought phenomena. Despite a dearth of instrumental data to precisely indicate the trend, the older generation of the village, often comment that rainfall patterns over the current decade frequently involve rain not coming on time or coming at the wrong time compared to their past experience over their lifetime.

Small water sources are drying up gradually.

Changing rainfall patterns during the monsoon period, with long periods of dry days combined with a greater intensity of rainfall on the fewer rain days, create conditions where the rain run-off is less able to seep into the soil and rejuvenate the springs. Observational records show that freshwater springs, particularly in the western mid hills of Nepal, have been experiencing reduced water discharge due to changes in rainfall patterns. Drying of water springs is emerging as a major hazard associated with the changing patterns of climate.

Baseni village has been experiencing weather shocks and slow onset climate events such as droughts and heavy rainfall. Except for a few springs whose water flow is perennial with more than 5 liters per second even at the dry season of March, April and May, other small springs either dry up earlier than usual or disappear along with the withdrawal of monsoon rain. This trend of springs drying up is seen more frequently in the springs occurring where there is no surrounding vegetation rather than at the springs located in the middle of the forest.

Introducing the farmer-managed irrigation practice is one of the best local resources-based solution to build a cushion against drought and its stresses on crop farming.

Climate-induced weather shocks vary as the location differs. For Baseni, drought is a recurring shock and its stresses were manifested in crop failures and food and nutrition insecurity. Having investigated the local possibilities, in 2018 the irrigation system was built with its irrigation covering an area of 15 hectors belonging to 34 families. The irrigated area could be expanded further as the water flow rate is more than ½ liter per second even in the annual dry season. Winter rain was absent in 2018 and the beginning of 2019 but their land was lush with varieties of fresh vegetables. The 2019 monsoon was late, but people did not have to depend on rain to sow their summer crops on time.

The newly built irrigation system in Baseni has been a dependable cushion against droughts. The confidence of small land holding farmers to withstand the drought stresses has increased tremendously as they saw their land green with standing crops even when the winter rain was miserably low, and the monsoon was late.

POLICY RECOMMENDATION

In agriculture and water policies, Hupsekot Rural Municipality must consider climate change as a risk multiplier for existing subsistence agricultural pracctieces as climate change and water are directly linked; and therefore attention must be paid to developing resilient agricultural practices with regard to prioritizing irrigation facilities as a drought resilience building long term measure.

Experts can suggest a plethora of climate adaptation measures, but only the measures devised in deep consultation with the locals, compatible with local possibilities, can build the adaptive capacity of climate-vulnerable people.

As a long-term solution for the agricultural impacts of recurring drought, the Baseni people's only demand with the local government and local development actors including NGOs was to build them the basic irrigation structures to utilize the locally available spring water for irrigation. The basic irrigation structures included a 50,000-liter volume water tank, a delivery pipe connected with the tank for 24/7 water supply, and a network of irrigation delivery pipes. The community people proactively engaged in labour and time contribution and completed the work on time. The project did not have to struggle for mobilizing the local community, because the project was made in response to what they had demanded collectively.

In addition to the community-managed irrigation structures, it is equally important to capacity-build the marginal farmers to grow new crops as water for irrigation is available abundantly now. In reference to Baseni village, they have shifted from ginger farming, which was comparatively more labour-intensive and resource-consuming, to commercial fresh vegetable farming. The new cropping idea, technology use and entrepreneurship skills development, including linkage to the local market, have been priority activities to boost farming performance after the irrigation facility is in place.

Identify, enable and promote the existing and new sources of adaptation to build climate resilience and additionality.

Cereal crops farming, kitchen gardening and livestock keeping are the established livelihood base of Baseni farmers as well as the sources of their adaptive capacity-building. These activities were in a degrading state due to recurring drought. But, with dependable access to an irrigation facility the farmers are transforming their farming practices, from home gardening to commercial vegetable farming with additional ten new fresh vegetable varieties, and subsistence livestock (goats) keeping to commercial livestock farms—an improved cash income base. Unlike the past, the farmers are now able to grow fodder for goats. Improved and year-round vegetable farming has ensured an access to fresh green vegetables—an important source of nutrition security for households.

With the availability of irrigation, trial paddy farming in Baseni has been successful in dry land which previously only supported rainfed crops. The farmers are now quite enthusiastic to grow paddy as an additional crop for food. Likewise, citruses are another crop on their list for diversifying their crop base. Regarding technology use, the farmers use drip irrigation devices during the winter when water flow reduces. Mulching in gently sloping land and use of polytunnels have become common methods of farming nowadays. However, there should be flexibility in training to provide transferable skills to the farmers.

The difference that is achieved through the diversification of sources of adaptive capacity is the additionality the resilience-building project can offer in the long run.

It is important to encourage resource cooperation between local government, NGOs and the community for resilience planning and implementation of adaptation measures, to ensure a greater degree of project ownership and reduce the project risk.

The project financing and cooperation model should be as comprehensive as possible involving as many resource contributors as possible. 'Baseni Irrigation Service for Forest Conservation and Climate Change Impacts Resilience Intervention 2018'—a part of UMN's Food Security Project 2016-18, is a classic example. The issue of drought and need for irrigation was justified and owned when the local government, a local NGO, farmers' and community groups and funders came together for the initiative. Further, this was a cooperation between Baseni community group, Bread for the World (Brot), United Mission to Nepal (UMN), Isai Samaj Nabalparasi (ISN-UMN's local partner), Himalaya Community Development Forum (HICODEF - a local NGO) and Hupsekot Rural Municipality. Community mobilization, monitoring, structural works and coordination all went well with low risk and high ownership. Thus, such a cooperative model of project financing would be a good approach for the local government to promote in the sector of climate change adaptation, which ultimately can enable Hupsekot Rural Municipality to switch from climate vulnerability to become a climate resilient community.

OTHER INFORMATION

About the project

Environment and Climate Change (ECC) is a cross cutting issue in United Mission to Nepal (UMN). UMN's ECC policy 2012 dictates the improved environmental and climate resilience of its target communities through projects and programs as well as mainstreaming of the climate issues. As part of the mainstreaming environment and climate issues at the community group-level, the Baseni community's drought resilience plan was supported and completed with comprehensive collaboration approach between Bread for the World, United Mission to Nepal, Isai Samaj Nabalparasi, Hupsekot Rural Municipality, Himalaya Community Development Forum and Baseni community group. This brief has been developed after one year of the project completion with majorable results to advise policy and programme decesions.

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