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Women's Empowerment at the Frontline of Adaptation

Emerging issues, adaptive practices, and priorities in Nepal

ICIMOD Working Paper 2014/3

Impacts of Climate Change on Nepali Women: Key findings

Challenges to Water Availability

The increase in the time required for women to collect water was one of the most important issues raised during the consultations. During field visits to three districts (Morang, Dhanusha, and Sankhuwasabha) and discussions with grassroots women from six districts (Kavre, Sindhuli, Chitwan, Gorkha, Lamjung, and Sarlahi), it was clear that rainfall patterns are becoming increasingly unpredictable, more intense, and shorter in duration. Longer periods of drought also seem more common, resulting in the drying of wells and small springs. The resulting increase in time needed for collecting and guarding water is affecting other sectors, such as agriculture and forest management.

With water sources drying up, the flow of water has been reduced in many areas, leading to long queues for water during the day. One alternative is to collect water for irrigation at night when the water supply is uninterrupted; however, this requires guarding the water channels, which is usually done by men (it not being safe for women to venture to isolated places at night). This puts women-headed households at a disadvantage.

Techniques such as deep boring for drinking water and irrigation have high installation cost and require external technical inputs. Other methods like rainwater harvesting and use of small or large drums and temporary plastic ponds to store water are simple in technique but expensive. But having networks beyond the village plays a key role in mobilizing resources for adaptation. In one example, in Kavre district, a predominantly Chettri and Brahmin village (advantaged caste groups) was able to use its networks at the district and national level to mobilise almost 95,000 USD (which was double the amount required) in funding for deep boring and building water reservoirs to supply drinking and irrigation water to about 30 households. A neighbouring village, a predominantly Dalit and Tamang village (disadvantaged caste groups), which also faced severe water problems, came to know about the construction of improved water supply facilities in the next village only after they saw the construction taking place. Even though the Dalit/Tamang village has strong women leaders and a rich cooperative, they were unaware of this opportunity for improving water supply. A wider network for receiving timely and useful information regarding schemes and opportunities is important to access the financial resources required to meet development needs.

Dalit households and women in the Terai often do not have access to tube wells, which are generally shared between four or five households. Furthermore, for the last few years, the water taps supplied by the government are often dry for more than half the year. In many cases, Dalit households are forced to seek water from richer families.

Less access to water leads to a deterioration in sanitation and hygiene conditions for households. Women have less time and water with which to clean and wash, which often results in health related problems. The practice of ‘untouchability’ means that Dalit women face more acute problems in accessing water than other women.

In the hills, prolonged dry spells are increasing the number of rat holes, which loosen the soil and cause severe damage and landslides during heavy rainfall. Both during and after disasters, it is the poor and marginalized women who suffer the most as they are engaged more in farming and fodder and fuelwood collection and, hence, more exposed and prone to accidents. People from poor and marginalized groups are also more vulnerable to

natural disasters as they tend to reside in disaster- prone areas, which are often far away from the main settlement, making timely rescue and support difficult.

Although women may have more local knowledge about safe places and preparedness and can easily approach relatives and acquaintances for shelter and mobilize resources through social networks, their knowledge and skills are not recognized or used by the intervening authorities and agencies. The very nature of disaster preparedness training also typically excludes women.

The introduction of hydropower and fuel-based mill technologies has been a boon to rural women in Nepal, reducing women's labour and saving time. However, frequent and unpredictable disasters such as flash floods and droughts damage water mills and micro-hydro stations, as well as irrigation systems and roads, directly affecting women's workload and mobility. Damage to roads and bridges by landslides and floods causes geographical isolation and affects access to services such as health, government services, technical support, and information. The absence of information on existing flood patterns affects women's planning and preparedness.

Challenges to Agriculture and Food Security

The soil quality in Nepal is generally becoming degraded as a result of unpredictable rainfall, including long spells of dry weather and short, but intense, rainfall. Hardened soils are very difficult to break and fertilise, and require more water and manure (traditionally women's work), translating into additional work and long hours of physical labour in the hot sun for women. More time spent breaking the soil also means less time for sowing the crops and other activities.

Women involved in focus group discussions in all three districts felt that the emergence of new pests and weeds could be due to long spells of dry weather and less rain. These weeds and pests have generally lowered the productivity of crops. New breeds of weeds and pests also fall outside the realm of traditional knowledge; hence, the need to connect women to agricultural and other extension services is immense. Some women farmers use off the shelf chemicals to kill weeds. While these chemicals are effective in killing the weeds, they reported observing that it makes the soil harder. They also reported suffering from headaches from the strong smell of these chemicals. The health implications of using chemical herbicides without proper precautions and knowledge are ignored in favour the results that they promise.

Decline in the production of lentils and vegetables has led to food shortage. To cope with this problem, farmers are increasingly selling cereals (like rice, maize, wheat and lentils) in the local market to purchase imported and cheaper rice form the Terai in Nepal and India. The reduction in the diversity of food intake has major implications for family health, particularly of children and women.

Traditionally, rural women have always set aside some high value crops, such as beans, lentils, and leafy green vegetables, to sell for personal or side income, which other family members either do not notice or question. The sharp decline in the production of these crops and vegetables has huge implications for women, particularly from poorer families, as they may lose their only source of cash income and have to depend on their husbands or fathers for every small expense.

To access government subsidized fertilizers and other technical inputs, farmers have to be registered as a 'farmers group' with the District Agriculture Development Office. Most of the poor women and disadvantaged groups are not registered in District Agriculture Development Office and, therefore, unable to access these resources.

The early ripening of crops and vegetables has disrupted regular cropping patterns and created problems with the storage of seeds and crops because of pest infestations. These crops are more infested in storage in warm

weather, than in cool weather. Crop infestations have increased women's workload as they have to spend extra time to check, dry and clean the pests out of the crops.

Taking a loan to support agriculture is common practice among poorer farmers in rural Nepal. These loans are usually paid back after harvest. However, decline in agricultural production due to increased droughts and erratic winter rainfall has increased the debt burden of farmers. The inflation of food prices has further increased loan amounts. Loans from savings and credit groups, which are often taken by women to buy livestock, seeds, and fertilizers, are now being taken to purchase food items and chemical herbicides, pesticides and fertilizers.

Although, at the macro level, male outmigration seems to be an economic boon, with remittances constituting about 20% of the national GDP (Government of Nepal 2012a), a closer analysis reveals that the cost of the absence of the rural workforce is borne by rural women. While the outmigration of men might appear to have improved women's access to cash (remittances), their actual access depends on how much their migrating men earn and how much they are able to save and send home. During the field discussions with women it was revealed that husbands are usually only able to send money a year or two after migrating. In the meantime, women are forced to deal with significantly less cash flow. However, one advantage of male outmigration is that women in families where a male member has migrated have easier access to loans, as moneylenders consider them 'low risk' due to the expectation of incoming remittances.

Challenges to Forests and Biodiversity

Women farmers in Sankhuwasabha indicated that the regeneration of forest and undergrowth is decreasing due to the rapid spread of the white flowered 'banmara', an invasive species. Unlike the existing invasive species, the purple flowered 'banmara', this white variety is neither edible to livestock, nor good for making organic pesticides.

The spread of this species has reduced the yield of timber, fodder, wild fruits, seeds, and important non-timber forest products (NTFPs). The side income from NTFPs is usually under the direct control of women, who use it to deposit in their saving groups, for personal use, and to meet household needs, including their children's education. Women members of the Leasehold Forestry group in Dhanusha reported that their personal income has been badly affected by this decrease in yield of NTFPs.

Challenges in Women's Empowerment

Almost all women interviewed for the study across several villages stated that, due to increased workload and household responsibilities, balancing household and outside work was one of the key issues that hindered them from taking up responsibilities and doing justice to the positions given to them on different committees. Most of the women leaders interviewed stated that the quality of their participation has suffered, as they miss meetings and thus lose access to information and important processes.

When it comes to resources (village funds, grants, training, consultations, workshops, etc.), related meetings, and other opportunities, women (particularly from marginalized groups) are systematically discriminated against or denied access by elite groups (both men and women). Even if a woman accesses or manages to participate in such opportunities, they are suppressed from raising their voice or concerns.

An increasing number of rural women are either supporting, or are themselves owners of, medium, small, and micro-enterprises, particularly in parts of the Terai and hills that are close to market centres. This is due in part to a number of successful agricultural and natural resource management-based interventions. Rural women are engaged in a wide range of enterprises such as vegetable and cereal seed production, making leaf plates, production of essential oils, and cultivation of cash crops. Experience in setting up these enterprises and the

income earned have played a large role in increasing women's self-confidence and empowering them. However, decreases in agricultural production, limited technical support and safety nets, and the inability of women to devote time to managing their enterprises is de-accelerating this process and affecting the process of women's empowerment.

Existing Practices in Adaptation to Climate Change

Water

- Permanent water storage tanks: Permanent water storage tanks (either cemented or made of stone) are being constructed at water sources to allow communities to prevent water runoff as well as collect water in order to provide controlled water supply to households as a long-term solution.
- Rainwater harvesting: Different techniques have been used for rainwater harvesting depending on the capacity and resources available. In some cases, artificial ponds have been constructed with plastic covered floors to prevent absorption and seepage of water. These ponds are mainly for irrigation or in biogas plants. Big and small drums are also being used to collect rainwater, usually for household consumption. Bamboo pipes are used to direct the rainwater from the roof top to the storage tanks or drums. These measures are adopted at individual and household levels and allow for only a small quantity of water storage; they do not offer a longterm solution to water scarcity.
- Deep boring: Deep boring is used in the hills to extract drinking water.

Adaptation practices require networks, information, skills, and investment: Many of the alternative adaptation practices in relation to water, particularly water harvesting, require networks, information, skills, and investment to develop infrastructure, which are generally not accessible to poor and Dalit women. For example, certain techniques that depend on collecting water from roof tops excludes poor households with thatched roofs and poor and Dalit households with little or no land around their house (for the installation of water storage tanks).

Agriculture and Food Security

- Altered planting times: Farmers have altered the time that crops are planted (particularly paddy and maize) according to the rainfall. In addition, to cope with longer dry spells or heavy late rains, farmers are planting alternative crops to reduce the risk of complete crop failure. In the mid-hills of Nepal, for example, the study found that when the monsoon is late, farmers use their fields to grow cucumbers, tomatoes, and pumpkins instead of maize and paddy, which require less water. During winter dry spells, farmers switch from growing mustard to wheat and barley and, if a dry spell is very long and does not support even wheat or barley, they grow improved organic grass called 'jai ghass' for fodder.
- Inter cropping: Inter cropping is also used to reduce the risk of complete crop failure; for example, maize is planted with beans or cowpeas.
- Drought resistant crop varieties: Farmers are replacing local crop varieties with more drought resistant or pest tolerant varieties or changing cropping systems. For example, in the hills, farmers are replacing rice crops with finger millet, fruit trees, and fodder and forage crops for improved animal husbandry.
- Plastic tunnels to protect seedlings: Farmers make use of plastic tunnels to protect seedlings from heavy rain or frost and grow off-season vegetables. This technology also reduces instances of blight.

- Increased interaction with District Agriculture Development Office: Farmers are increasing their interaction with the District Agriculture Development Office for technical inputs and drought and flood resistant seeds.
- Labour reducing adaptation for women: Women have developed various strategies to overcome these challenges, such as reinforcing 'perma' (labour sharing system), reducing the number of livestock, and shifting to cash crops such as broom grass, ginger, and sugarcane, which are less demanding.
- Wage labour and non-farm businesses: Farmers are opting for wage labour and small non-farm businesses to supplement income from agriculture.
- Sale of high-quality cereal to purchase cheaper rice: Farmers are selling locally produced, high-quality cereal on the local market at a high price to purchase cheaper rice and food products in order to make up for the food deficit.

Women are not registered with District Agriculture Development Office: The District Agriculture Development Office's outreach programme requires farmers' groups to register with them. Poor and Dalit women usually find it difficult to get membership in these farmers' groups and, hence, lose the entitlements, such as subsidies and technical inputs, provided by the District Agriculture Development Office.

District agricultural service providers do not target women: External interventions and service providers are usually techno-centric not demand driven; hence, inputs from district agricultural service providers do not specifically target nor consult women.

VDC resources are highly contested: Development or climate change-related resources that come to the VDCs or to local user groups are highly contested. Political and power interests often determine how these resources are allocated and used. Women members of these groups or committees are generally sidelined in decision-making processes in relation to such resources and, as a result, their adaptation needs are unmet.

Forest and Forest Products

- Sustainable use and forest products: The sustainable use and conservation of timber and other forest resources is being promoted by community forest users groups, which are developing strict guidelines for the use and collection of forest products, both for commercial and personal use.
- Use of agricultural residue and animal dung: Agricultural residue and animal dung are being used to make up for the firewood deficit, particularly in the Terai region.
- Planting of fuelwood and fodder grass on private land: Fuelwood and fodder grass species are being planted on private land, especially in the hills where there are labour shortages for agriculture due to male outmigration and water scarcity.
- Traditional seed storage practices: Traditional seed storage practices, including local seed banks, are being promoted among communities and households for forest biodiversity by organizations such as LI-BIRD and FORWARD (both national NGOs).

Women's role in disaster risk reduction is not recognized: Women's roles in, and knowledge of, disaster risk reduction are not recognized or resourced.

Women have no or limited access to resources: Women have no, or limited, access to resources and services (disaster risk management committees, training, subsidies, grants, and so forth).

Technological innovation: Time saving technologies for household work and agriculture are also a boon for women; these include biogas (mostly used by richer families, particularly in the Terai), mills, pressure cookers, piped water at home, and thrashers (though mostly used by men) (Gill et al. 2012).

While women's workload has increased, there is an emerging trend of men supporting women in household work. This was particularly common in households where women are active in community work and play leadership roles. In particular, women who bring in some cash or non-cash payments to the family are respected and wholeheartedly allowed to participate by their families and men. The value of women's participation in community work and decision making processes is demonstrated to husbands and families when women bring financial and technical resources to the household and community.

Natural Disasters

- Vegetation of slopes: Broom grass and bamboo is being planted in and around landslide-prone areas to strengthen slopes and prevent landslides.
- Food storage: Dried food and cereals are being saved for disasters.
- Use of women's knowledge: Women's knowledge and networks are being used during disasters.
- Women's role in disaster risk reduction is not recognized: Women's roles in, and knowledge of, disaster risk reduction are not recognized or resourced.
- Women have no or limited access to resources: Women have no, or limited, access to resources and services (disaster risk management committees, training, subsidies, grants, and so forth).