MEETING REPORT

Climate change awareness and resilience building among rural women in the Himalaya, India*

Women are the backbone of any family and/or community across the globe mainly in the mountain scenario. However, the challenges faced by rural women in the Himalaya, India, are different as these communities reside in ecologically fragile and topographically mountain ecosystem. These women are mainly responsible for various activities related to household and farming systems ranging from gathering food, fodder and fuelwood and cultivation of food, and fetching water from distant sources. A changing climate impacts men and women differently in the Himalayan ecosystem. Women and girls are amongst the world's poorest population who again have to survive under vulnerable conditions. The rural women living in the Himalaya bear the livelihood losses at a large scale due to climate change, which require more concerted, proactive and holistic responses. Gender issues may limit the resilience and restrict options for adaptive capacity. The resilience-building programme of women must be designed in such a way as to enrich existing knowledge and enhance capability. Women should be able to harness important opportunities so as to craft effective climate change solutions for the benefit of all. Harnessing these benefits could be possible by way of achieving the following objectives: (i) increase awareness about climate change and its impact; (ii) build resilience against climate change among rural women of the Himalaya and (iii) empower rural women regarding climate change adaptation and mitigation strategies.

A total of 79 women participants from Papoli and Garhwali villages participated in a four-day training programme on climate change and resilience building. They attended four technical sessions, conducted cleanliness campaign in their villages and visited the Rural Technology Complex (RTC) of G.B. Pant National Institute of Himalayan Environment (GBPNIHE), Kosi-Katarmal, Almora. A wide range of topics were covered during the various sessions in the wake of climate change.

The technical session I appraised the participants about harmful impacts of fossil fuel burning, deforestation, industrialization and burning of waste (plastic), and the ways in which these factors are contributing to climate change. Further, it was explained about the consequences of climate change with regard to decadal use of natural-water resources, shifting of agricultural crop patterns, etc. Adaptation and resilience in agricultural pattern or lifestyle against climate change can be achieved by green management techniques, viz. proper waste management at the local level (community and household), plantation around natural-water resources like springs, knowledge regarding water-harvesting techniques, natural calamities like landslides and cloud bursts and alternative livelihood generation. One member of the Block Development Council, Papoli village pointed out that climate change awareness and resilience building programmes for women would certainly provide a roadmap for adaptive measures to minimize the impacts of climate change. The Gram Pradhan, Papoli highlighted key issues of the impact of climate change on women and suggested development of a framework to mitigate climate change impacts. The Village President of Papoli and Garhwali and self-help groups (SHGs) encouraged women participants and requested the experts to focus on local climate change issues of the region.

The technical session II was based on group exercise with the women, wherein two questions were asked to each of the four groups as follows:

(1) What are the activities generally performed by women and men at household and society level?
(2) How will climate change affect the abilities of women and men to fulfil their different responsibilities?

The four groups chalked out all the routine activities being performed by men and women. However, there was poor response regarding the second question.

After the group exercise, one of the experts apprised the audience about gender vulnerability to climate change and the role of women in climate change mitigation. It was realized that gender equality and women empowerment are important not only as fundamental human rights, but also have a significant role in sustainable development. The rural women in the Himalaya have unique traditional knowledge as well as skills regarding crop production, farming systems, animal husbandry, household chores and child care. This not only provides them a good opportunity to mainstream in the society, but also helps them in mitigating and adapting to climate change.

The technical session III was on solid waste management, wherein existing knowledge was shared among the participants about the conversion of cow dung and kitchen waste into useful biocompost. This practice, if applied, may increase crop productivity along with sustainable management of waste commodities. The deliverable to the participants was mainly concentrated on how organic waste could be converted into manure using microorganisms. With this technique one can easily manage organic waste that comes from households. Dumping of waste may cause pollution loads and health hazards. Every day, several tonnes of solid waste is disposed into the dumping sites, which further pollutes groundwater as well as the surrounding air due to its foul smell and hazardous emissions. The above-mentioned technique produces good quality manure which could help increase crop yield.

The technical IV session provided an overview of the theme and encouraged the participants about resource sharing and collaborations for better social connect. Water management using rainwater harvesting techniques was discussed. The need for promoting education among women was emphasized. The importance

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of wild edible fruits was explained to the participants. Wild edibles like hisalu (*Rubus ellipticus*), kilmora (*Berberis asiatica*), amla (*Embilica officinale*), kafal (*Myrica esculenta*), gingaru (*Pyrachantha esculenta*), etc. could be valuable in view of climate change. The nutraceutical values of these wild fruits could provide alternative livelihood options for people in the mountains in future.

Bio-composting techniques, elaborating the method of manure formation and use of microorganisms were also discussed. Practical training about the use of waste decomposer microorganisms was also given.

A cleanliness drive was conducted in Papoli and Garhwali. The women participants were divided into four groups. They were explained about advantages and disadvantages of biodegradable and non-biodegradable waste. In addition, hands-on-training on weighing the amount of different solid waste compositions collected by women was given. The method of converting biodegradable waste into bio-compost was also described to highlight the value of the waste, while recycling of non-biodegradable waste could be another option.

A brainstorming session was organized at the end of the programme for women participants to understand the processes and factors involved in resilience building due to climate change. The three key issues identified to combat climate change were: livelihood, traditional practices and implications on future generations. All the participants had the same opinion that they are not only sensitive towards climate change but also their livelihood options. Therefore, it is the need of the hour to build up local level adaptive capacity to mitigate negative impacts of climate change on livelihood, local agricultural practices including vegetables and fruits, water resources and biodiversity. They also mentioned that some persons in the villages are acting as change leaders, and have been working to reduce the climate change impact on livelihood options. The participants were also enthusiastic to foster the younger generation to help them minimize the impacts of climate change by adopting climate-resilient practices in their surroundings. Encouraging the younger generation in the cultivation of medicinal plants, multi-purpose fodder plants, imparting knowledge regarding natural disasters (glaciers, flash floods, etc.) and their management; rainwater harvesting technique and microbial bio-composting is important.

The training programme was well appreciated by the women participants. The District Horticulture Officer, Almora mentioned the efforts of the State Government, Uttarakhand, to promote employment with agricultural and horticultural practices. Up-to-date information about practices like mushroom cultivation, species production, flower cultivation, vegetation cultivation and fruit cultivation was also provided which can be a source of income. Similar programmes are necessary for resilience building among rural women in the Himalaya in future. This will bring more technological elements for discussion while retaining the unique flavour of climate-smart leaders with their success stories to mitigate the impacts of climate change in the Himalaya.

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