

Indigenous land and food systems in Uttarakhand: A case study on traditional knowledge and food sovereignty

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Traditional food systems that are characterized by rich agricultural biodiversity and associated indigenous knowledge play an important role in the nutrition of hundreds of millions of people across the globe and continue to provide options of resilience for building sustainable livelihoods. The vast wealth of knowledge that indigenous people contain are the results of their long-evolved cultures and patterns of living in local agro-ecologies. Local communities depend on a mix of one or more staples, local crops and semi-domesticates, native livestock breeds, and a range of wild species of plants and animals that add variety to the diet as well as providing micronutrients. Local biodiversity should, therefore, be recognized as a significant contribution to a sustainable agriculture-food-nutrition strategy alongside improvements in agricultural productivity and agronomic practice, nutritional enhancement of crops, industrial fortification, vitamin supplementation and other nutrition-agriculture interventions.

About 70-80% of the native people in the Uttarakhand State living in rural areas depend on farming for their livelihoods, with the majority relying on small scale crop-livestock systems, including those that are integrated with long haul pastoral systems in higher Himalayan ranges. Besides, there are certain valleys where improved agriculture and mono-cropping is practiced, and a nutrition transition could be easily observed. Relatively reduced access to indigenous food resources has resulted in the replacement of diets of the hitherto diversified food resources by energy-dense and nutrient-poor foods in these valleys.

The nutritional contribution that the native food of Uttarakhand hills such as leafy green vegetables (amaranths, buckwheat, spinach, chenopods, etc.); minor millets (finger millet, barnyard millet, foxtail millet, etc.); native legumes/beans (local black seeded soybean, horse gram, black gram, lentil, rajmash, cowpea, etc.), many local underutilized minor crops, wild harvested foods; animal-based food products, etc. make so as to help situate such approaches within the larger context of sustainable food-based approaches to health and nutrition of local communities. In a comparative study, as mentioned above, of three niche sites in



Uttarakhand hills, it was observed that that the farmer household production and dietary diversity was more where traditional small scale crop-livestock-wild harvested production system is prevalent followed by areas with a mix of nomadic pastoralism, crop husbandry and wild harvesting, and least diversity in valleys where improved agriculture is practiced. With relatively greater per capita household income, the farmer households of valley areas has increased access to energy-dense processed foods low in nutrition leading to both malnutrition and obesity.

It may be emphasized that the contribution that agricultural biodiversity is making for local food and nutritional security to the small-holder poor and marginal rural hill communities is undervalued resulting in lost opportunities to reducing hunger and malnutrition. Assessment of nutritional value of native bio-diverse food as well as associated traditional knowledge will help mainstream biodiversity for food and nutrition of native communities. Further, the research for improved nutrition from agricultural biodiversity through markets and value chain approach will improve nutrition and dietary diversification at community level.

About 60-70% food in hilly areas of Uttarakhand is still produced by small-scale farmers who use traditional farming methods and also sell their surplus produce locally. Small-scale ecological farming methods are the key to ensuring resilience to climate change. They are based on enhancing diversity - thereby increasing options to respond to climate instability. There is a need to support these traditional systems in order to feed local communities and at the same time address the traditional foodbased approach of community nutrition and health.



A fair food system would be one where agricultural traditions are once again firmly rooted in their local landscapes. These traditions recognize that healthy food depends on healthy ecosystems, and this requires farmers to comply with the same laws of nature which give life. A proactive alliance between indigenous peoples, local communities and their key allies is needed to collaboratively create a research and advocacy agenda in support of agrobiodiversity and the revival of diverse local food systems and landscapes within the broader framework of food sovereignty.

Further, it can also be emphasized that to implement Convention on Biological Diversity (CBD) cross-cutting initiatives on biodiversity for food and nutrition there is a need to integrate and mainstream awareness and understanding of the nutritional value of local agricultural biodiversity through cross-sectoral collaboration.