

Participatory Plant Breeding on the Hillside Farms of Nepal¹

Marty Logan



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Researchers in Nepal are supporting the efforts of mountain farmers to regain control over their lives, with funding from the International Development Research Centre (IDRC).

Since 1998, a research team from Resources Himalaya, a Kathmandu-based non-governmental organization, has been working with 45 men and women farmers from three sites in Nepal's remote Sankhuwasava District to learn how they manipulate crops to yield seeds with desirable genetic traits. The research team proposes to integrate simple technical breeding skills with local farming practices to maintain the purity of existing seed varieties.

Genetic traits

In this way, it is hoped, for example, that seeds which previously retained their genetic traits for two years can be bred to last for four years, says project leader Barun Gurung, an anthropologist with Resources Himalaya. "The idea is to identify what the farmers' experimental traditions are," he says, then combine those with new skills to make the farmers better plant breeders.

Armed with hardier plants, mountain farmers — who often live many days walk from the nearest services — will be less dependent on the seeds provided by authorities or middlemen, who are known to hoard seeds to drive up prices. "People want control of their lives. That's the bottom line," says Dr Gurung.

Roots

The current research builds on the results of a previous IDRC-funded project entitled 'Gender, Environment and Sustainable Livelihoods', and on related projects supported by the MacArthur Foundation and UNESCO. Its scope includes mountain communities in Nepal, Bhutan, and the two Indian states of Nagaland and Sikkim.

A transformation in agriculture over the past two centuries has deeply changed the lives of these mountain farmers, who traditionally grew a variety of crops on small plots scattered at different elevations near their homes. As the dominant lowlands culture of Nepal spread into the hills, it brought its own agricultural traditions, says Dr Gurung. Growing rice — a crop that plays a central role in the social/religious life of plains cultures — became more desirable. Meanwhile, cultivating traditional highland crops, such as buckwheat, barley, and maize, became a sign of low status and poverty.

¹ http://www.idrc.ca/en/ev-5289-201-1-DO_TOPIC.html

Farming challenges

Today, the agricultural systems of most countries emphasize lowland agriculture. But many mountain farmers — some of whom belong to indigenous minorities — lack access to the latest crop varieties needed to practise lowland farming. Moreover, they often live at high altitudes on steep, marginal land that is unsuited to growing lowland crops.

IDRC and Resources Himalaya hope that by strengthening highland agricultural practices, the Nepalese farmers can make a better living from traditional crops. Meanwhile, the entire world will benefit from the conservation of agriculture biodiversity.

Survival strategy

Mountain farmers have no choice but to plant a variety of crops — the micro-environments where they live demand it. This practice ensures that, when climatic conditions become harsh — too much or too little rain, for example — at least some crops will survive until harvest time.

According to Dr Gurung, the same agricultural systems that discriminate against mountain farmers are also sacrificing biodiversity in the name of productivity. Worldwide, farmers are often pressured to plant the same crop variety rather than rely on their own seeds, which are produced under local conditions. But when a disease or pest attacks the crop, it could wipe out an entire area's food source.

Measure of success

One measure of this project's success will be the extent to which mountain farmers pass on their agricultural knowledge to their neighbours. The research team has enlisted a unique ally to help spread that information: a network of sports organizations established by retired Gurkha soldiers.

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