

## Local, National and Global Benefits

Local communities will have improved capacity of managing diverse sets of agricultural biodiversity for improved production and risk management, and will have better access to planting materials and processing equipment. Nationally and globally important cold tolerant germplasm will be conserved and accessible.

### Project Goal

To contribute to the conservation of globally important crop biodiversity, which form the basis for food security in areas of high environmental instability and variability in many high- elevation agricultural systems throughout the world.

### Project Objective

To mainstream the conservation and use of agricultural biodiversity in the mountain agricultural production landscapes of Nepal to improve ecosystem resilience, ecosystem services and access and benefit-sharing capacity in the mountain communities.

### Component 1: Mainstreaming diversity-rich solutions

**Outcome 1:** The area devoted to sustainably-managed agrobiodiversity in agricultural production systems is improved through increased use of diversity-rich solutions.

Output 1.1: Diverse sets of varieties developed that buffer against unpredictable environmental change and mainstreamed into local and national extension and development packages

Output 1.2: Technology and processing advancements adapted to traditional varieties and diverse sets of varieties

Output 1.3: Ecosystem services from agrobiodiversity management practices valued and utilized in agricultural and environmental development and extension programmes.

Output 1.4: Enhanced capacity and gender equity of farmer groups, local schools and technical colleagues and other community institutions to support the conservation and use of diverse local genetic resources

### Component 2: Increasing access to planting materials

**Outcome 2:** Farmers benefit from having locally adapted materials in populations sized large enough to buffer against change to ensure sustainable agriculture.

Output 2.1: Sufficient crop genetic diversity in the form of seeds and other planting materials are available to smallholders to increase productive gains while at the same time maintaining ecosystem resilience

Output 2.2: Diversification of seed suppliers and other stakeholders to provide locally adapted crop genetic diversity planting materials

Output 2.3: Smallholder farmers are recognized not only as recipients of technology and seeds but also as providers of diversity and seed

### Component 3: Promoting an enabling environment for access and benefit-sharing

**Outcome 3.** Communities and other stakeholders gain from benefit-sharing mechanisms that support diversification of varieties

Output 3.1: Recommendations and actions on how local and national institutions and strategies on plant genetic resources should address the use of crop genetic diversity in their agendas for mountain agricultural environments

Output 3.2: Policy support for the establishment of alternative methods of variety registration and dissemination

Output 3.3: Procedures identified and used for drafting Prior Informed Consent (PIC), which ensure that the benefits derived from the use of genetic resources go into the sustainable management of biodiversity by local farmer communities

Output 3.4: Leadership and capacity built to enable a higher level of involvement in local communities in local and national decision-making forum

#### For further information, contact:

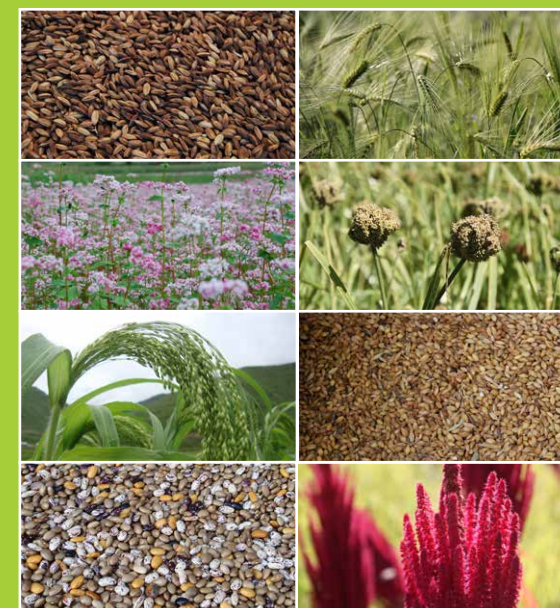
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# Integrating Traditional Crop Genetic Diversity for Mountain Food Security<sup>1</sup>



<sup>1</sup> The full title of the project is: Integrating Traditional Crop Genetic Diversity into Technology: Using a Biodiversity Portfolio Approach to Buffer against Unpredictable Environmental Change in the Nepal Himalayas

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## Rationale

The Himalayan system, with its outlying subranges, stretches across six countries, with the longest division in Nepal. The region, with extreme variations in topography and micro-environments, harbours centres of unique crop diversity adapted to mountain environments. The diversity of local crop varieties, with globally important cold-tolerant genes, is one of the few natural resources available to mountain farmers to cope with their marginal and heterogeneous environments that are likely to be starkly affected by climate change. These traditional crops are also important for sustainable development of their local economy.

The key to the sustainability of the high-mountain agricultural ecosystems in Nepal is that farmers have continued to keep a large diversity of traits in their traditional varieties, despite the bottleneck of cold stress. In these vulnerable environments, diversity in the production system can support ecosystem provisioning, supporting, cultural and regulating services and buffer the risks of pest, disease and environmental stresses.

Yet, little research and development has been done focussing on these important, nutritious and climate-resilient crops from the perspective of breeding, processing, promotion and policies. The project aims to mainstream the use of diversity-rich solutions in the mountain agroecosystems to improve ecosystem services provisioning and resilience. The project will develop and promote diverse sets of varieties, improve access to diverse sets of planting materials and drudgery-reducing processing technologies and promote an enabling environment for access to and benefit-sharing of planting materials.

## Crops and Sites

The project will work on eight neglected and underutilized mountain crops, namely, buckwheat (*Fagopyrum esculentum* and *F. tararicum*), cold tolerant rice (*Oryza sativa*), common bean (*Phaseolus vulgaris*), finger millet (*Eleusine coracana*), foxtail millet (*Setaria italica*), grain amaranth (*Amaranthus caudatus* and *A. leucocarpus*), naked barley (*Hordeum vulgare* var. *nudum*), and proso millet (*Panicum miliaceum*).

The research work will be conducted in four districts (Dolakha, Humla, Jumla and Kaski) of Nepal.



## National Partners

The key executing national partners are: the National Agricultural Genetic Resources Centre (Genebank) at the Nepal Agriculture Research Council (NARC), the Department of Agriculture (DoA), and Local Initiatives for Biodiversity, Research and Development (LI-BIRD).

## Donors

The GEF Trust Fund is providing USD 2.3 million for five years in grant, while the four implementing and executing partners (the Government of Nepal, LI-BIRD, Bioversity International and UNEP)

are providing additional USD 5.8 million in cash and in-kind co-financing. The project is supported by the CGIAR Research Program on Water, Land and Ecosystems (WLE), a program to provide an integrated approach to natural resource management research lead by the International Water Management Institute (IWMI).

## Project Management

The project is implemented by UNEP and executed by Bioversity International, NARC, DoA and LI-BIRD. The National Genebank, NARC will host the Project Management Unit (PMU) and the Chief, will act as the National Project Coordinator (NPC). The PMU will consist of the NPC, supported by a National Project Manager and a National Project Assistant. The PMU will be supported at the site level by project leaders from executing agencies and the Site Management Teams supported by the District Coordination Committees. The project team will be assisted by an interdisciplinary core team and thematic experts known as the National Technical Coordination Committee. The Project Steering Committee will assess the overall progress of the project, provide policy decisions about the implementation of the project and play a proactive role in mainstreaming good practices into national policies.

## Working Approach

The project will cultivate partnerships with public, private and NGO sector and leverage resources for mainstreaming lessons and good practices. Community-based biodiversity management approaches will be employed to empower local institutions to effectively participate in local governance processes to set up and implement relevant research-for-development agenda. Project supervision will take an adaptive management approach guided by project monitoring and evaluation matrix.

