



## National Workshop

# Enhancing the contribution of custodian farmers to the National plant genetic resources system in Nepal

31 July to 2 August 2013, Pokhara, Nepal

## Background

The conservation and use of crop diversity is essential to achieve food security for a burgeoning human population. Currently, about 60% of the world's population is malnourished, either due to lack of enough calories or due to too much of the wrong kind of calories (Pimental 2011). Although more than 3,000 plant species have been identified as edible, only 10 cereal grains, legumes and oilseeds dominate 80% of the world's cropland (Glover et al. 2007). Wheat, rice and maize by themselves account for two-thirds of the world's arable land. This lack of diversity is starkly reflected in the diets we consume, where 90% of our plant-based calories can be traced back to only 30 or so crops (FAO 1995, 2009a). The dominance of so few crops in agricultural production is associated with the decline and loss of traditional crops in many parts of the world. These threatened local crops are often more nutritious than dominant crops or higher yielding on marginal lands, making them greatly valuable in the livelihood strategies of the rural poor.

Over-reliance on a handful of crops puts food security at risk by decreasing the diversity in our diets and increasing vulnerability of production to infestation and climatic perturbation, which is a particularly pertinent problem in the face of global climate change. At the same time this trend also exposes people to the risks of rampant speculation in food prices resulting in food crises and riots as seen in 2008. Many minor crops, landraces, and wild food plants have the potential to improve nutrition and livelihoods because they are often well adapted to low input and marginal conditions and are associated with traditional practices that can strengthen local cultural identity. However, their potential has not been realized because they have been neglected by research and development and de-valued in the eyes of local communities as "food of the poor". With this in mind, it is important to ensure the conservation and re-valuation of such neglected and underutilized species (NUS) and to determine strategies to increase their contribution to human nutrition and food security. This is a global initiative but it must be realized at the local scale through supportive National policies and development programs.

A critical step in realizing the potential of NUS consists of lending support to *in situ* conservation efforts, which secure the dynamic maintenance of their genetic diversity and associated knowledge. Paralleling the loss of crop diversity is the loss of knowledge and practices that farmers and users, such as home cooks, hold in association with the plants. As this knowledge is lost, so is the ability to value and use the diversity, including its deployment in coping with environmental stress and post-harvest methods and techniques required to bring the food to the table. The maintenance of knowledge is equally as important to crop conservation as the preservation of seed and planting material. Therefore, while most effort at conserving crop diversity has involved *ex situ* conservation in genebanks, more attention must be paid to conserving crop diversity *in situ* in the fields of those farmers who continue to cultivate and valorise the plant genetic resources through use.

Towards this end, the identification of custodian farmers and developing understanding of their needs and challenges can make a strong contribution. Custodian farmers are considered to be those farmers who maintain a diverse portfolio of crop species and varieties, who select species and varieties adapted to local conditions, and who promote the use and conservation of local diversity among their friends and neighbours (Sthapit et al 2013). Often custodian farmers are outstanding members of their communities for their dedication and enthusiasm in conserving a wide diversity of traditional crops and sharing their knowledge and materials with their community. These actors inherent drive to conserve crop diversity can foster the development of harmonious and sustainable partnerships with on-farm conservation programs and enable the promotion of local food culture that draws largely on the diverse use of local species and varieties. Bringing the voices of custodian farmers into discussions and decision-making on the conservation of crop diversity has the potential to reveal targeted solutions that are relevant to local farmers, the quintessential actors in maintaining global crop diversity.

The discourse on custodian farmers is fairly new and methods of identifying and engaging these actors are still under development. The definition and mechanisms for supporting custodian farmers are still being refined, particularly with regards to their applicability to different crop types and social contexts. For instance, the roles and responsibilities of custodians of annual crops likely differ from those of custodians of long-lived tree species. Gendered division of labour often means that men and women develop different knowledge and understanding of the crops they cultivate and in this sense may play different roles as custodians of crop diversity. It is important to consider gender differences in the development of methodology for identifying and supporting custodian farmers and to include the perspectives of both men and women in the discussion concerning on-farm conservation. It is also important to address how the custodian farmer approach can complement on-farm conservation initiatives at the community scale, such as community seed banks and participatory selection and breeding activities. Conservation of diversity is fundamentally a collective process but it depends on the actions of individuals. It will be necessary to develop methods of balancing support at individual and community scales to optimize the conservation, adaptation, and promotion of crop diversity.

LI-BIRD is the secretariat of the network for agricultural biodiversity conservation in Nepal (NABIC-Nepal) that brings together member institutions in Nepal working on various aspects of agricultural biodiversity management. One of their key focus areas is the identification of and facilitation of knowledge sharing between custodian farmers. In 2012, a national workshop on Community Seed Banks (CSB) in Nepal was able to bring together different practitioners of CSBs to consolidate their understanding of CSB concepts and lay the groundwork for greater collaboration. One key outcome was the initiation of linkages between the Nepalese national *ex situ* genebank and *in situ* CSBs. This has given farmers managing CSBs renewed motivation and a sense of how they are contributing to the greater good. To add further impetus to this work, the connections between custodian farmers and CSBs should be explored, to devise strategies to maximize the contribution of these actors in maintaining, adapting and promoting crop diversity. There is also a need to discuss and design tools, mechanisms and intervention options to create a more supportive environment for their activities and to include more women in the discussions to ensure representation of their knowledge and viewpoints.

## **Workshop Objectives**

This workshop aims to bring together custodian farmers from across Nepal along with plant genetic resources experts, gender specialists, and policy experts in order to pursue three specific objectives, viz:

- 1) Developing tools, mechanisms and intervention options to support custodian farmers in the safeguarding of crop diversity and knowledge.**

Options to be covered will include, inter alia, facilitating linkages between the CSBs and custodian farmers to strengthen the maintenance, adaptation and promotion of crop diversity at individual and community scales (Annex I), potential incentive mechanisms to encourage on-farm conservation and climate change adaptation (Annex II), and the establishment of a nation-wide platform to allow farmers to share lessons and experiences about deploying resilient crops to cope with climate change.

**2) Exploring policy options to establish an enabling environment for on-farm conservation.**

The meeting will explore institutional, policy and regulatory options needed in order to support on-farm conservation, as well as to raise the visibility and recognition of custodian farmers in the management of plant genetic resources.

**3) Developing understanding of custodian farmers' characteristics and status.**

Building on the work from custodian farmer meetings in India (Sthapit et al 2013) and in Nepal earlier this year, continue to develop understanding regarding custodian farmers, who they are and how they differ from other farmers, how their demographics have changed or are changing over time, what are their roles and contribution to the national plant genetic resources system, what are the challenges, needs and opportunities related to ensuring the sustainability of their invaluable (and so poorly acknowledged) contribution to NUS conservation and use.

The workshop is organized as collaboration between Bioversity International and LI-BIRD with funding from IFAD and CCAFS.

## Participants

The workshop will include approximately 20 farmers from different parts of Nepal, ensuring a substantial representation of women. Nearly half of the participating farmers are recognized as custodian farmers in that they are actively engaged in maintaining, adapting and promoting crop diversity. The other farmers are strong in one or two of these roles but not necessarily all three. The farmers will be supported by LI-BIRD staff that will facilitate translation between Nepali and English and vice versa.

In addition to the farmers, delegates from the National Gene Bank and Department of Agriculture will also be in attendance. A number of international participants will also participate, including gender specialist Marlène Elias (Bioversity International, Malaysia), economist Adam Drucker (Bioversity International, Italy), and representatives from various on-farm conservation programs around the globe (Red de Semillas (Spain), Native Seeds/SEARCH (USA), M.S. Swaminathan Research Foundation (MSSRF, India), and Seed Savers Exchange (USA)). Bhuwon Sthapit and Hugo Lamers (Bioversity International, India) will share their perspectives and experience from a recent custodian farmer meeting in India.

## Outputs

Outputs from the meeting will include:

- Conference proceedings that will document the contributions of custodian farmers and researchers and the results of discussions and activities during the meeting.
- Custodian farmer profiles to contribute to building our understanding of custodian farmer attributes, roles and motivations.
- The meeting will also generate a scientific article drawing on one or more of the issues tabled for discussion.

Recommendations emerging from the workshop will be used not only to guide future work on *in situ* conservation in Nepal, but also for the testing of pilot interventions linked to International Fund for Agricultural Development (IFAD) NUS3 Project.

### **Schedule of Activities**

The meeting will take place over three days, 31 July to 2 August 2013 in Pokhara, Nepal. The first day will consist of introductions to the topic and the participants. The custodian farmers will host a participatory seed exchange and deliver short presentations about their work and motivations. In the afternoon, results from previous custodian farmer meetings in Nepal and India will be presented. The second day will involve group discussions with the farmers that explore the roles they, their households, and their communities play in maintaining, adapting and promoting agricultural biodiversity. Later in the day, some of the participating researchers will share their experiences with on-farm conservation projects in different parts of the world. The last day will explore policy and incentive options to encourage on-farm conservation, the feasibility of establishing a National Custodian Farmer Network in Nepal, and the refinement of the definition of custodian farmers. These topics will be explored from the perspectives of the farmers, researchers and plenary discussions between these groups.

**ALL PRESENTATIONS AND DISCUSSIONS ARE TRANSLATED TO ENSURE EQUAL PARTICIPATION OF FARMERS AND RESEARCHERS**

**Wednesday, 31 July 2013**

<b>Time</b>	<b>Activity</b>	<b>Description</b>
8:30-9:30	Registration and setting up the seed exchange	
9:30-10:30	<u>Introductory Session</u> led by Stefano Padulosi, Nadia Bergamini (Bioversity, Italy) and Pashupati Chaudhary or Balaram Thapa (LI-BIRD, Nepal)	Video about custodian farmers in Nepal. Intentions for the meeting, summary of the on-farm conservation challenge and the concept of custodian farmers. Acknowledging partners.
10:30-10:45	Group Photo	
10:45-13:00	Ice Breaker & Seed Exchange	Participants interact during a seed exchange setting. Researchers also have an opportunity to exchange publications
13:00-14:00	Lunch Break	
14:00-16:00	Farmer Introductions	All farmers explain who they are, what crops they care for, their motivations
16:00-16:30	Tea Break	
16:30-17:00*	Presentation by Bhuwon Sthapit (Bioversity, India)	Reflections and outcomes from custodian farmer workshop in India February 2013.
17:00-17:30*	Presentation by Hugo Lamers (Bioversity, India)	Results and discussion of custodian farmer survey from India.
17:30-18:00*	Presentation by Sajal Sthapit (LIBIRD, Nepal)	Summary of results from past custodian farmer workshop and survey in Nepal.
18:00-18:30	De-briefing	Reflection on the day's activities, soliciting feedback from the researchers and custodian farmers. Opportunity to propose important topics for discussion during the coming days.

\*15 minute presentation, followed by translation and questions.



## Thursday, 1 August 2013

Time	Activity	Description
8:30-8:45	Farmers reflect on what they noted or learned in the previous day.	
8:45-9:15*	<u>Presentation</u> by Gennifer Meldrum (Bioversity, Italy) to introduce the group discussions	Maintain, adapt, and promote as critical components of on-farm conservation that are carried out by individuals, households, communities and formal institutions (see Annex I). How to maximize and consolidate these contributions?
9:15-9:45*	<u>Presentation</u> by Marlène Elias (Bioversity, Malaysia).	Reflections on the role of gender in agricultural research.
9:45-10:00	Explanation of format for discussion and documentation	Participants are split into groups that include 4-5 farmers, translators, a facilitator, and other participants. Each group will perform Activity 1 – 3 and share results in plenary.
10:00-10:45	<u>Group Activity 1:</u> Individual actions in maintaining, adapting, and promoting crop diversity	Farmers discuss how they, as <b>individuals</b> , contribute to maintaining, adapting and promoting diversity and constraints faced.
10:45-11:15	Tea Break	
11:15-12:00	<u>Group Activity 2:</u> Household contributions to maintaining, adapting, and promoting crop diversity	Farmers discuss how different members of their <b>household</b> contribute to maintaining, adapting, and promoting diversity and constraints faced.
12:00-12:45	<u>Group Activity 3:</u> Community contributions to maintaining, adapting, and promoting crop diversity	Farmers discuss how different individuals or institutions in their <b>community</b> contribute to maintaining, adapting, and promoting crop diversity and constraints.
12:45-13:15	Time to reflect on discussions and assemble material for presentation	
13:15-14:15	Lunch Break	
14:15-15:45	Presentation of and discussion of results from Group Activities 1-3	
15:45-16:00	Tea Break	
16:00-16:30	<u>Presentation</u> by Israel Oliver King (MSSRF, India)	Accounts of custodian farmer work done by MSSRF in Kolli Hills, India
16:30-17:00	<u>Presentation</u> by María Carrascosa (Red de Semillas, Spain)	The role of seed networks in the management and use of cultivated biodiversity: the case of Spain
17:00-17:30	<u>Presentation</u> by Seed Savers Exchange (USA)	Accounts of heirloom variety conservation from Decorah, Iowa, USA
17:30-18:00	<u>Presentation</u> by Chris Schmidt, Native Seeds/SEARCH (USA)	History, mission, and strategies of Native Seeds/SEARCH and custom platform for sourcing and sharing crop-specific information for climate change adaptation
18:00-18:30	De-briefing	Reflection on the day's activities
18:30-22:00	Reception Dinner	

## Friday 2 August 2013

Time	Activity	Description
8:30-8:45	Farmers reflect on what they noted or learned in the previous day	
8:45-9:15*	<u>Presentation</u> by Dr Madan Bhatta or Dr Bal Krishna Joshi (to be confirmed) (National Genebank, Nepal)	Genebank's vision on how custodian farmers, on farm interventions and the genebank can work together
9:15-9:45*	<u>Presentation</u> by Jacob Van Etten (Bioversity, Colombia)	A citizen science approach to crop adaptation under climate change
9:45-10:45	<u>Presentation and Discussion</u> led by Adam Drucker (Bioversity, Italy)	Incentive mechanisms for crop diversity conservation and climate change adaptation (see Annex II)
10:45-11:15	Tea Break	
11:15-12:15	<u>Group Activity 4</u> : How to strengthen maintenance, adaptation, and promotion of crop diversity at individual and community scales?	Farmers discuss how to strengthen maintaining, promoting and adapting crop diversity in their households and communities. Supporting individuals? Connecting individuals? Establishing community-level institutions?
12:15-13:00	Presentation and discussion of results from Group Activity 4	
13:00-14:00	Lunch Break	
14:00-15:00	<u>Plenary Discussion</u> : Refining the definition of custodian farmers	Refining the definition of custodian farmers and methodology of identifying and supporting these actors
15:00-16:00	<u>Plenary Discussion</u> : How to develop a national custodian farmer network?	What form would it take? How to finance it? Exploring logistical details to making a custodian farmer network a reality.
16:00-16:30	Tea Break	
16:30-17:00	Feedback from Marlène Elias	Gendered observations and considerations from themes covered during the meeting and suggestions for best way forward to ensure gender sensitivity in the custodian farmer approach
17:00-18:00	Closing Remarks and Conclusions	Reflection on the day's activities, soliciting feedback from the researchers and custodian farmers.

## **Annex I – Concept Note for discussion**

### **A framework for on-farm conservation: connecting custodian farmers through community-level institutions**

Maintaining, adapting, and promoting crop diversity are essential activities in effecting on-farm conservation (Sthapit et al. 2013). The continued cultivation and maintenance of local crop diversity is fundamental to its conservation. It is recognized, however, that on-farm conservation is also a dynamic process in which varieties are introduced, eliminated and adapted to match changes in climate, pests, disease, and cultural context. Sharing seeds and promoting the use of traditional crop diversity are also fundamental to ensure access and cultural validation of the resources.

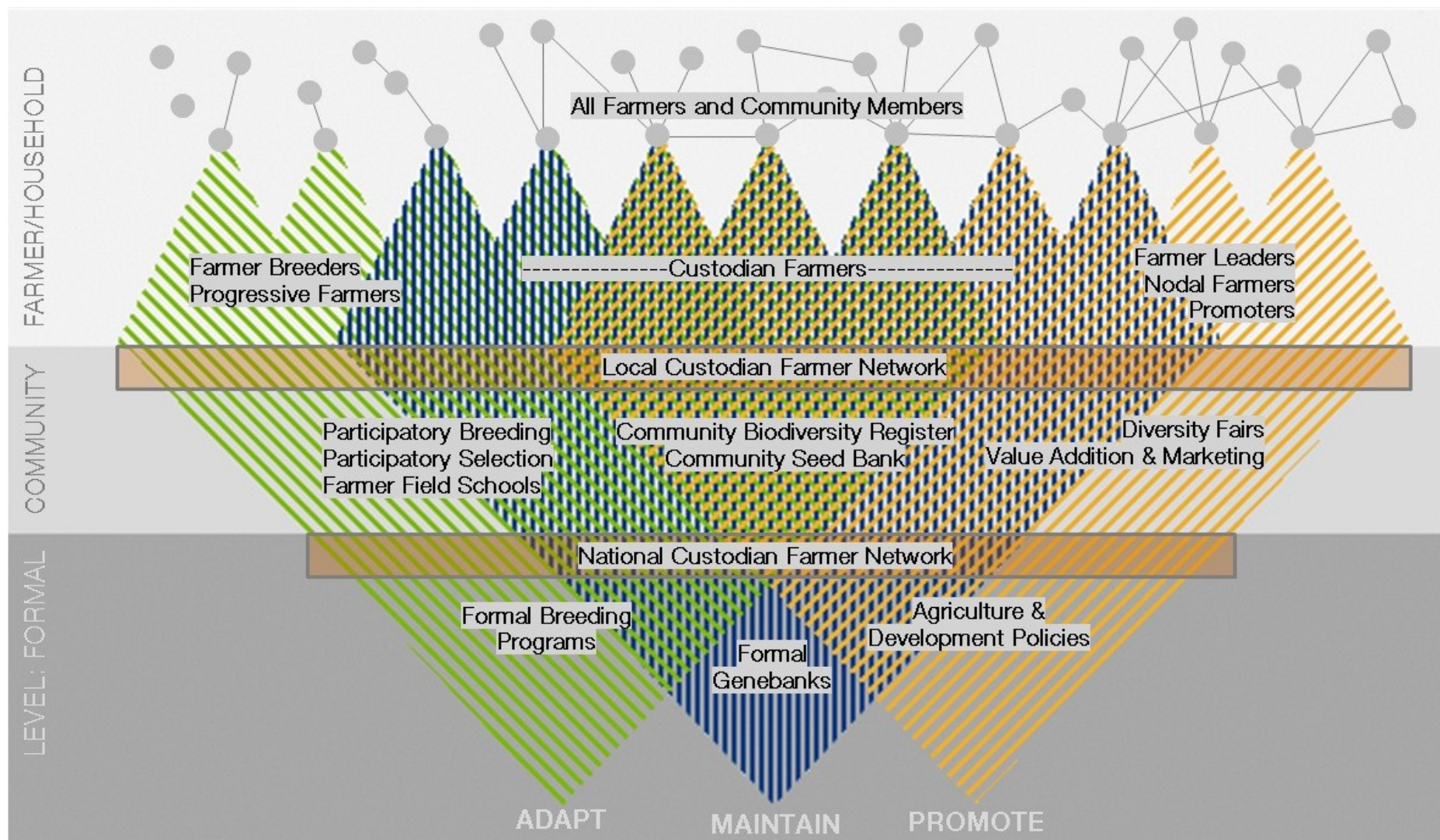
Custodian farmers have been defined as individuals who play exceptional roles in maintaining, adapting and promoting crop diversity, although it is recognized that some custodian farmers may not fulfil all of these roles equally well (Sthapit et al. 2013). For example, some farmers may maintain high diversity and share their seeds and knowledge widely in the community but they may not be very experimental. Other farmers may maintain high diversity and develop new varieties that meet their local needs but they may be shy and thus not very active in sharing their resources and knowledge with their community.

Recognizing that farmers have different strengths in maintaining, adapting, and promoting crop diversity, one means of supporting and consolidating the roles of custodian farmers in on-farm conservation would be to connect custodian farmers with different strengths through a 'custodian farmer network. In addition to connecting individual farmers, the custodian farmer network could link farmers with community institutions that reinforce, complement, and consolidate their roles in maintaining, adapting, and promoting crop diversity. For example, custodian farmers who maintain a diversity of traditional crops can be supported by the community seed bank in their maintenance activities. If the farmer is not very inclined towards experimenting with diversity, the custodian farmer network or the community seed bank can ensure that their seeds are accessible by other community members who are engaged in adapting and breeding, either on an individual basis or through participatory breeding activities with the community. Similarly, if a farmer who maintains high diversity is not very strong at promoting and sharing the materials, the custodian farmer network can link them with community members who can promote their work and enable the benefits to reach the rest of the community. Figure 1 presents an idealized framework wherein a custodian farmer network complements community-level on-farm conservation initiatives. The responsibilities associated with this framework are presented in Table 1.

The custodian farmer network may be a new initiative in the community or it may be an extension of an existing farmer's association or other community-based institution, such as the community seed bank. Indeed, as maintaining crop diversity is the central component of on-farm conservation, community gene banks could play a central role in linking custodian farmers, other community members, and the formal system.

The custodian farmer network could also extend to the national and international level, such that farmers have a direct means of influencing decisions made by genebanks, formal breeders and policy-makers. These formal level actors could develop stronger links with farmer-based initiatives to strengthen on-farm conservation. Community-level and farmer-level activities are supported by enabling policies and institutions at the formal level.





**Figure 1.** Actors in on-farm conservation that maintain, adapt, and promote diversity at farmer/household, community, and formal (regional/national/international) levels. Colour and pattern indicate the different roles: adapt (Green), maintain (dark blue), and promote (orange). As patterns overlap it indicates actors who perform multiple roles. The activities carried out by these actors are described in Table 1 below.

**Table 1.** Responsibilities at individual, community and regional/national/international levels for on-farm conservation of crop diversity and associated knowledge. Individual activities may be fulfilled by different members of a household and for different crops.

Role	Individual/Household	Community	Regional/National/International
<b>Maintain</b>	<ul style="list-style-type: none"> <li>• Holding knowledge associated with crops</li> <li>• Planting and maintaining annual and biannual crops</li> <li>• Planting and maintaining perennials and trees               <ul style="list-style-type: none"> <li>Preparing the land: Clearing, Tilling, Digging</li> <li>Building (Irrigation System, Greenhouse, etc.)</li> <li>Fertilizing</li> <li>Planting seed</li> <li>Transplanting</li> <li>Grafting</li> <li>Pruning</li> <li>Watering</li> <li>Weeding</li> <li>Pest Management (Spraying, treating, etc.)</li> </ul> </li> <li>• Harvesting</li> </ul>	<ul style="list-style-type: none"> <li>• Maintaining a Community Seed Bank (CSB)</li> <li>• Contributing seed and planting materials to the regional or national genebank</li> <li>• Maintaining a Community Biodiversity Register (CBR) documenting traditional knowledge associated with local crops, forecasting, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Formally recognizing community seed banks</li> <li>• Accepting seeds from community seed banks for conservation in formal genebanks. Ensure detailed passport information attached.</li> <li>• Developing a mechanism to provide material to farmers to restore lost varieties or provide new materials that meet emerging needs.</li> </ul>
<b>Adapt</b>	<ul style="list-style-type: none"> <li>• Selecting and storing high quality seed for replanting</li> <li>• Experimenting with developing new varieties</li> <li>• Obtaining new varieties               <ul style="list-style-type: none"> <li>From friends, family and neighbours</li> <li>From other farmers at the local market</li> <li>From other villages or regions</li> <li>From the formal system</li> </ul> </li> <li>• Re-introducing lost varieties from the genebank</li> <li>• Experimenting with new farming techniques or post-harvest processes</li> <li>• Participating in farmer field schools</li> <li>• Partaking in participatory varietal selection and breeding activities</li> </ul>	<ul style="list-style-type: none"> <li>• Running participatory varietal selection and evaluation activities to improve local landraces or evaluate new varieties from other areas or from the formal system</li> <li>• Running participatory plant breeding activities to develop new varieties with desired trait combinations</li> <li>• Contributing farmer improved/bred varieties to the formal seed system</li> <li>• Running farmer field schools to allow farmers to learn new skills and techniques from scientists or other farmers in the community</li> </ul>	<ul style="list-style-type: none"> <li>• Valorising farmer bred varieties</li> <li>• Taking farmer needs into consideration in developing new varieties</li> <li>• Sharing knowledge on breeding and selection with communities</li> <li>• Sharing expertise on farming techniques with communities</li> </ul>
<b>Promote</b>	<ul style="list-style-type: none"> <li>• Sharing knowledge with the community and children</li> <li>• Documenting knowledge in the community biodiversity register</li> <li>• Sharing seeds through gift, inheritance, or sale with children and family with friends or other community members through the community seed bank</li> <li>• Selling or trading seeds and produce at the market</li> <li>• Improving the marketability of crops</li> <li>• Showcase crops and varieties at diversity fairs</li> <li>• Participating in a custodian farmer network</li> </ul>	<ul style="list-style-type: none"> <li>• Holding diversity fairs and seed exchanges</li> <li>• Developing and performing value addition strategies to improve the marketability of crops</li> <li>• Ensuring transfer of knowledge and materials from elderly farmers to younger generations</li> <li>• Sharing farmer needs and challenges through a custodian farmer network with breeders, with genebanks, and/or with policy-makers</li> <li>• Distributing diversity kits of promising and rare heritage varieties to boost their populations</li> </ul>	<ul style="list-style-type: none"> <li>• Developing incentives to encourage diversity (i.e. subsidies, marketing diversity, etc.)</li> <li>• Establishing a Biodiversity fund</li> <li>• Holding national/regional diversity fairs</li> <li>• Supporting custodian farmers to produce seeds of rare heritage varieties and disseminate the seeds through national extension networks.</li> </ul>

## **Annex II – Concept Note for discussion**

### **Exploring the impact of incentive mechanisms designed to promote the conservation of agricultural biodiversity by facilitating farmer experimentation with threatened NUS**

The degree to which niche product market development of threatened NUS can provide the cornerstone of a wide-ranging cost-effective, diversity maximizing national ABD conservation and use strategy remains to be explored. In this context, a process of triage has been proposed, with threatened NUS with unknown market potential being subjected to farmer experimentation to comprehensively assess their market and non-market traits and values. It is expected that such experimentation can lead to the design of conservation interventions that help secure both the enhancement of private (i.e. agricultural outputs) and public (i.e. maintenance of resilience at the landscape scale, evolutionary processes and future options values, as well as local knowledge and customs) ecosystem services that may be associated with the maintenance of diversity. Such experimentation would need to be facilitated through the application of appropriate incentive mechanisms to help farmers overcome any associated opportunity costs/risks of participating in such an ABD conservation and use programme.

Previous incentive mechanism-related work on payments for agricultural biodiversity conservation services (PACS) has revealed that support for farmer experimentation with threatened NUS crop varieties can under certain circumstances lead to continued maintenance of those varieties even once support is withdrawn. Both market (productivity, profitability) and non-market (tolerance to pests, diseases and climatic conditions, as well as taste and traditional use) factors can explain such preferences. Such potential uptake pathways for de facto conservation through use suggest that interventions designed to support the maintenance/re-introduction of diversity may require only modest initial funding, at least for a certain proportion of the priority portfolio under consideration.

In order to identify a priority set of threatened NUS varieties to promote with the PACS approach, GIS and climate modeling could be used to determine which NUS crops would be suitable for introduction in certain areas, as has been done to assess suitability for major crops under climate change conditions in the Bioversity International Seeds4Needs project. The willingness of farming communities<sup>3</sup> to engage in their experimental cultivation may be determined by asking communities located in appropriate agro-ecological zones to identify which of these NUS they would be willing to cultivate, over what land area and involving how many farmers. They would also be asked to specify (through the use of a competitive tender approach to ensure realistic bid offers) what in-kind community-level rewards/support they would require (if any) to be able to carry out such experimentation under a given set of pre-defined conditions (e.g. with regard to cultivation practices, reporting requirements, post-harvest seed storage, etc.). Selection of community offers to participate in the conservation intervention could then be carried out following a number of criteria related to conservation goals (scale, spatial distribution/configuration), cost, and social equity issues (e.g. fairness, pro-poor orientation, gender balance, youth participation, etc.). The degree of maintenance of the selected NUS over time (in the absence of further direct support) would also be tracked in order to assess the impact of the intervention and its sustainability over longer-time periods.

#### Next Steps:

- Initial discussion and further development of the concept with key partners
- Structured discussion during upcoming Nepal workshop in order to further refine the concept and develop a plan of action, select research locations and threatened NUS crops to be investigated, identify resources (human and financial) required, etc.
- Identification/contracting of “project” team members
- Survey instrument and sample design
- Implementation of survey (competitive tender approach and follow-up monitoring/verification visits)
- Data capture, analysis and write-up
- Elaboration of recommendations for up-scaling



In-kind rewards, could be provided by existing government agricultural development and education programmes, include, inter alia: i) information (e.g. school materials, extension literature); ii) technology transfer: hardware, software and know-how (e.g. access to quality seed and diversity; agricultural machinery, farm inputs , other infrastructure (inc. associated know-how) ; iii) training (e.g. improved agronomic practices, participatory plant breeding); iv) joint research and development (e.g. farmer experimentation and participatory evaluation); v) institutional capacity building (e.g. strengthening of institutions of collective action, development of value chain partnerships, establishment of biodiversity fairs/awards, community biodiversity registers); and local income generation and employment (e.g. opportunities to participate in GR participatory monitoring and verification activities). Furthermore, where there is a spatial (community-level) overlap between those priority NUS with market potential and those that do not, the provision of market development incentives may be made conditional on maintenance of small areas of those threatened NUS without market potential.

NOTE: Participation would be open to all farmers in the community, not just those “custodian” farmers known for maintaining high levels of diversity on their farms.