

# Enhancing Benefits to Small and Marginal Farmers by Linking Biodiversity to its Niche Markets

An External Evaluation Report of a DF-Assisted LI-BIRD Project

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## TABLE OF CONTENTS

TABLE OF CONTENTS.....	2
ABBREVIATIONS .....	4
1. INTRODUCTION.....	6
2. TERMS OF REFERENCE .....	6
3. LI-BIRD’s PROGRAM THRUST .....	6
4. FINDINGS .....	7
4.1. LI-BIRD: Poised for making wider national and regional impact .....	7
4.2. Addressing broader livelihood goals can ensure that attention is also provided to conservation agenda .....	8
4.3. Demystifying community organisation-building processes.....	9
4.4. Unique opportunities for intervention are offered by traditional farming in LI-BIRD project sites.....	10
4.5. Using agronomic and resource management measures to enhance the productivity of promising local crops.....	11
4.6. Home gardens and upland farms: Still the best opportunity for conserving diversity in Nepal (role for diversity kits, plant introductions and support-nurseries) .....	12
4.7. Revolving funds: A mechanism for galvanising community action and a tool for enhancing sustainability.....	13
4.8. Processing, packaging and marketing: Value addition pathways: Social value, market value and household food and nutrition agenda.....	14
4.9. An urgent need for market chain analysis approaches .....	15
4.10. Linking producers with markets: Reducing the gap between farm gate and market price differences .....	16
4.11. Value addition through seed-production: Role for a more sophisticated, systematised and commercial approach to seed production .....	17
4.12. Rice-based income generation .....	17
4.13. Capitalising on the comparative advantages of local communities for product specialisation .....	18
4.14. Exploring the organic markets.....	19

4.15.	Community seed banks: Need for revisiting the concept .....	20
4.16.	Educational and training support materials on LI-BIRD exemplary practices: Their role in up-scaling efforts .....	20
4.17.	Virtual resource center on agro-biodiversity conservation.....	21
4.18.	Public awareness contributions of the diversity fairs.....	22
4.19.	Influencing agricultural education and training: Strategic opportunity for impact .....	22
4.20.	National CBM: Ensuring that structure and process are balanced .....	22
4.21.	Partnerships have characterised LI-BIRD’s work .....	23
4.22.	Management systems that enhance quality control.....	24
4.23.	Policy influences of LI-BIRD’s work.....	24
5.	LIMITATIONS OF THE PROJECT .....	24
6.	KEY CONCLUSIONS AND RECOMMENDATIONS.....	25
ANNEX 1	.....	30
TERMS OF REFERENCE	.....	30
ANNEX 2	..... <b>Feil! Bokmerke er ikke definert.</b>	
VISIT SCHEDULE	..... <b>Feil! Bokmerke er ikke definert.</b>	

## ABBREVIATIONS

<b>ANSAB</b>	Rich and Productive Biodiversity for Prosperous Communities
<b>CBM</b>	Community Based Management
<b>CBO</b>	Community-based organisation
<b>CIMMYT/SARO</b>	International Maize and Wheat Improvement Center/South Asia Regional Office
<b>CLACC</b>	Capacity Strengthening of Least Developed Countries for Adaptation to Climate Change
<b>DADO</b>	District Agricultural Development Office
<b>DF</b>	Development Fund
<b>DOA</b>	Department of Agriculture
<b>FCs</b>	Farmers cooperatives
<b>FGs</b>	Farmers groups
<b>GO</b>	Government organisation
<b>IAAS</b>	Institute of Agriculture and Animal Science
<b>IDRC</b>	International Development Research Center
<b>IEC</b>	Information education communication
<b>IFAD</b>	International Fund for Agricultural Development
<b>INGO</b>	International non-government organisation
<b>IRRI</b>	International Rice Research Center
<b>LI-BIRD</b>	Local Initiatives for Biodiversity, Research and Development
<b>MOU</b>	Memorandum of Understanding
<b>NARC</b>	National Agricultural Research Council
<b>NGO</b>	Non-government organisation
<b>PCD</b>	Participatory curriculum development
<b>PEs</b>	Private entrepreneurs
<b>PME</b>	Participatory monitoring and evaluation

<b>PVS</b>	Participatory varietal selections
<b>SDC</b>	Swiss Agency for Development and Cooperation
<b>VDC</b>	Village Development Committee
<b>VRC</b>	Virtual resource center

## **1. INTRODUCTION**

This external review of the LI-BIRD implemented project was undertaken starting August 15, 2008. The first activity was a review of project documentation. The evaluator arrived in Kathmandu on August 17, 2008. The first day in Pokhara was devoted to presentations by LIBIRD on its overall thrusts and programme. Field visits were undertaken to each of the five project sites from August 19 to August 22, 2008. Focus group discussions were conducted in each of the five sites, with over 100 people participating in the discussions. Visits were made to 4-5 farmers at each of the sites. Following the field visits, agencies and business outlets in Pokhara were visited: the Pokhara Chamber of Commerce, the District Agricultural Development Office (DADO) and five business enterprises/organic production outlets. Two days, August 26 and 27 were devoted to visiting agencies in Kathmandu including the National Agriculture Research Center, the Director General of the Department of Agriculture, a major organic foods retailer and an enterprises support organisation (ANSAB). Further analysis of project documentation and the organisation's annual reports and publications were undertaken on August 28-30, 2008. This draft report was completed in mid-September 2008. The annex provides further details on the evaluator's program in Nepal.

## **2. TERMS OF REFERENCE**

This evaluation was commissioned by Development Fund based in Norway. The main purpose was to review the project: *Enhancing benefits to small and marginal farmers by linking biodiversity to its niche market* which includes the extent to which farmers are being empowered to manage agricultural biodiversity and to assess if the project has had a positive impact on the agro biodiversity in the region and on the livelihoods of the targeted communities. This evaluator was also expected to assess the sustainability of the project activities, comment critically on the approaches used by LI-BIRD and provide recommendations for integrating the lessons into the national CBM program which is also supported by the Development Fund (DF). (The detailed Terms of Reference is provided in Annex 1.)

## **3. LI-BIRD'S PROGRAM THRUST**

LI-BIRD was founded in 1995 and started operations in various sites in 1997. From its beginnings, LIBIRD has couched its biodiversity work within a broader program which emphasizes food security, peace and social justice. It has recently reorganised its work into five major program areas: (a) agricultural innovations for livelihood security; (b) biodiversity for sustainable livelihoods; (c) ecosystem health and services; (d) policy and social research for wider and inclusive impact; and (e) knowledge management and capacity building. LI-BIRD has had activities in 43 districts though it has direct interventions in 22 districts. It works directly with more than 90,000 households. The LI-BIRD project "enhancing benefits

to small and poor farmers by linking biodiversity to its niche market” (subject of this evaluation report) was implemented in three VDCs of Kaski district and two VDCs of Tanahu District from 2004 to 2007. This project builds on the previous work (spanning six years) on “In-Situ Crop Conservation” jointly initiated in 1997 by LI-BIRD and Biodiversity International (formerly IPGRI).

The project adopted a multi-dimensional approach involving Farmers Groups (FGs), Farmers Cooperatives (FCs), Private Entrepreneurs (PEs) and government line agencies to deliver project outputs. Farmers were organized into groups and/or cooperatives. The project used product diversification as a means to develop various products, particularly those that target the young generation and urban market. Various income generating activities were initiated and promoted by providing groups with revolving funds. The fund mobilization greatly enhanced farmers’ capacity in financial management and group mobilisation; thus it is expected to contribute towards sustainability of project activities.

A number of effective tools such as school programmes, food fairs, publications, advertisement through media of new products and association nutritional value proved effective especially in generating conservation awareness, increasing the use-value, and marketing of local crops and crop-based products. The project strongly felt that series of meetings and workshops among concerned stakeholders were successful in bringing effective coordination among producers groups, traders, promoters and government line agencies for promoting and marketing local crops.<sup>1</sup>

## **4. FINDINGS**

### **4.1. LI-BIRD: Poised for making wider national and regional impact**

LI-BIRD has pioneered the effective promotion of in-situ conservation of agricultural biodiversity. It has generated and fostered some key principles for agrobiodiversity conservation. It believes that effective management and conservation of genetic resources takes place *when resources are valued and used to meet the needs of farmers*. LI-BIRD promotes home gardens and farm-diversification to conserve Nepal’s impressive diversity and to increase the commercial opportunities for these crops. Farmers benefit when they increase their scale of production and from value-addition. Sometimes commercial opportunities are enhanced by improving upon local land races by crop enhancement strategies such as participatory varietal selections (PVS) and participatory breeding (PPB). The diversification and intensification of gardens and farms not only contributes to biodiversity conservation but to nutritional diversification as well. Strategies are often directed to enriching existing diversity through varietal introductions, by commercializing local crops and by providing market link. LI-BIRD has only recently started to work with livelihood groups to manage financial resources (revolving funds) and to better access

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<sup>1</sup> LI-BIRD Newsletter, Vol. 3 Issue 3.

markets through value added products. Two main areas require concerted/accelerated attention: increasing the agricultural productivity of local crops in traditional farming systems and business development aimed at value addition and income enhancement for local crops.

The following are key strategies that LI-BIRD promotes:

1. Economic incentive-based strategies (food production, cash income)
2. Social value-based strategies (cultural value, social status enhancement)
3. Community-based biodiversity management (good practices, community institutions, capacity building, etc.)

In order to increase the scale and sustainability of its impact, LI-BIRD also tries to influence policy makers, educators and agricultural administrators to ensure that adequate support systems and policy framework are in place. This parallel set of efforts is viewed as complementary to field level action that LI-BIRD is engaged with. LI-BIRD works closely with the National Agricultural Research Council, the Department of Agriculture, the Institute of Agriculture and Animal Science (IAAS) of Tribhuvan University and a number of other stakeholders. New policies and codes of conduct have been developed in the country with strategic support from LI-BIRD.

With the national policy framework now in place to support agricultural biodiversity conservation efforts, this combination of strategies can now be used in a scaled up manner through a range of other stakeholders (both governmental and non-governmental) in the national CBM. With appropriate use of public awareness information materials, policy briefs, community level education materials, site-based demonstrations of these concepts/practices and “quality control” measures, LI-BIRD is in a position to make a major impact in Nepal.

#### **4.2 Addressing broader livelihood goals can ensure that attention is also provided to conservation agenda**

LI-BIRD has recognized that conservation goals cannot be effectively addressed at the local level without addressing livelihood and economic empowerment. Typically this suggests the need to *use* genetic resources (not just conserve them) by improving market opportunities for local crops and promoting their use for food and in value addition via processing and packaging. The process has also been called as “conservation through use”. Numerous examples are provided in this report of conservation-related livelihood approaches. However LI-BIRD has also experimented with technologies which are not in themselves *directly* contributing to conservation. The plastic tunnel technology (raising tomatoes under plastic roofing to prevent rain damage) and backyard goat raising are two such project activities that have generated strong interest amongst *women*. Most of the tunnel systems are used to grow *hybrid tomatoes* and initially this seems quite inconsistent with what LI-



BIRD promotes. Goat raising is another activity that has resulted in substantial increases in income (accruing mainly to women). In the case of goats it can be somewhat more easily tied up with a conservation (of local breeds) agenda.

What the evaluator noticed was that *all* the farmers engaged in these commercial ventures were also strong advocates for conserving local crops (on the rest of their farms or in their home gardens). In all the sites visited there is an extraordinary level of awareness of the need for conserving genetic resources. In Amalachaur, Arba for example groups members are deeply committed to conservation agenda but the “glue” that strengthens affinity amongst members is their engagement in commercial vegetable production. One implication is for project staff to always ensure that a strong conservation-awareness building phase *precedes* livelihood interventions.

CBOs (coops, production groups, etc.) which are linked up with the market (even for improved/exotic crops) will also use this opportunity to test the market for local crops as well. Numerous examples to illustrate this point are available (e.g. marketing of taro, butter beans, blackgram, soya bean, etc.). As long as the project is able to limit its engagement to exotic crops to those with *especially high* income generating opportunities, the conflicts (with the conservation agenda) can be reduced. Stronger and more sustainable groups can be expected to emerge and better links with the market will continue to evolve if a balance can be achieved.

A strong livelihood component is needed in order to strengthen groups, empower its members and orient them to market economies. Without a strong livelihood orientation, groups cannot sustain themselves in the long run and ultimately their engagement in conservation program is affected as well. With an improved livelihood situation, groups can devote time and effort to conserving local biodiversity. This has been one of the important findings of the DF-assisted project.

### **4.3. Demystifying community organisation-building processes**

In the five project sites visited, group building processes have evolved. LI-BIRD did not impose any specific models and a certain level of refreshing informality prevails. LI-BIRD has worked with *existing* organisations and did not set up its own organisations unless there was none previously existing. Gender considerations are also not forced upon groups though gender considerations are effectively nurtured. In all the cases women are playing a major role and are often in leadership roles. Revolving fund is the key activity around which skills and group work evolved. Every group visited had different norms and rules and priorities. LI-BIRD should be commended for its evolutionary approach to group building. LI-BIRD should also explore group-to-group mentoring (and across groups). Advanced CBOs could serve as resource institutions to other newer CBOs. While different approaches are valued some are better than others, e.g. some CBOs have separated the management of savings and credit funds and others do not distinguish between them. Some have individual

passbooks and others have community records. An evaluation culture does not seem to exist among community organisations and elementary participatory monitoring and evaluation (PME) approaches may be considered.

In keeping with LI-BIRD's plans to scale up its work across the country, LI-BIRD might want to subject these experiences to a critical review with the idea of drawing lessons from the more mature groups. There is a need to review experiences across sites. LI-BIRD will have to consider doing a *good practice sheet* on group building processes and working with CBOs (a topic that is not adequately covered in the current good practices compilation).

#### **4.4. Unique opportunities for intervention are offered by traditional farming in LI-BIRD project sites**

Nepal still has extraordinary rich agricultural biodiversity, especially in its hills and mountain areas where a large proportion of its people still live and rely on farming for their subsistence and livelihood. Unlike many other parts of Asia, farmers here still rely on local diversity for their nutritional, livelihood and cultural requirements. As a result, many opportunities exist for conservation of local cultivars.

All the main crops raised by farmers are covered by LI-BIRD's mandate: rice, millets, corn, legumes and vegetables. LI-BIRD's current pathway is via the crop enhancement route, with exciting outcomes in the case of rice (discussed elsewhere). Participatory varietal assessments and participatory breeding approaches involving farmer-scientist partnerships have characterized this work. The results are impressive with strong consumer/trader interest in enhanced, local rice varieties such as Pokhareli Jetho Budho (PJB) and Anadi rice. Good examples are currently emerging from LI-BIRD's work with legumes as well. Many opportunities exist for work on corn and millets as well. *Bari* land is mostly upland and where much of the corn and millets in the mid-hills of Nepal is grown. By default most of these farms are also organic relying only on animal manure and compost: advantage should be taken of the new emerging markets for these organic foods. Future focus on these *Bari* crops (corn, millets and legumes) is warranted. However some work has been initiated already: recently *Resunga Composite and Gulmi2* maize varieties have been developed by farmers of Darbar Devasthan and Simichaur VDCs of Gulmi district with assistance of LI-BIRD, CIMMYT/SARO, and the National Maize Research Program. These varieties are suited for the mid-hills (800m to 1500m) in Western parts of Nepal with an average productivity of 4.86 tons per ha under farmer conditions. LI-BIRD is encouraging farmers to release this variety as a farmer-bred variety. LI-BIRD continues to do work on finger millet, an important crop in the bari lands (often grown after maize). More recently (2006), LI-BIRD started to participate in coordinated study of rice bean, an exceptionally valuable crop for food security in the context of climate change. Both India and Nepal are engaged in the **Food Security through Ricebean Research in India and Nepal** (FOSRIN) project exploring the role for rice bean. LI-BIRD continues to explore new opportunities for enhancing local crop

productivity of underutilized/undervalued crops and seeks new opportunities as they arise. Exploratory work is proposed on wild foods (domestication approaches) and on conserving goat biodiversity (via the goat-based livelihood programs).

The current coverage of rice, maize, legumes and millets should be retained. It is however unrealistic to assume that LI-BIRD on its own can address the opportunities for conservation presented by the traditional systems of Nepal. It is therefore timely that LI-BIRD is developing approaches to scale up work on agricultural biodiversity via different pathways: the national CBM project, the collaboration with IAAS Rampur for a new post graduate course on agricultural biodiversity and the engagement of both the Department of Agriculture and National Agricultural Research Center in various programs.

#### **4.5. Using agronomic and resource management measures to enhance the productivity of promising local crops**

One way to encourage farmers to continue to grow local crops (overall prices are on the rise for most of these) is to find ways to increase their productivity per unit area of land. LI-BIRD has used the DF-assisted project to explore such approaches but much more has to be done in future. There is a need for LI-BIRD to introduce a bigger range of agronomic improvements and promote crop diversification. Excellent examples of legume-maize systems are also noted in the project areas and LI-BIRD has an excellent opportunity to build on these very sound systems, expanding or further intensifying these systems. Unlike in the Indo-Gangetic plains where rice and wheat systems have edged out legumes (ironically scientists in India are now trying to re-introduce legumes to address the serious shortage of grain legumes), a very wide range of legumes are still grown (widely) in the hills of Nepal. With a sense of urgency LI-BIRD should develop systematic measures (e.g. via the national CBM program and the national home gardening program) to strengthen in situ conservation and crop enhancement strategies for legumes. More action research is needed to explore production increases in legumes through bacterial inoculants. Though commercial sources of bacterial inoculants are available and LI-BIRD has introduced them, one does not get the impression that this is done on a sufficiently large scale for it to have the necessary impact. The special focus on legumes is warranted not only because of its relative neglect by scientists but because of its special implications on the health of children and women in the light of rising prices of grain legumes, the “poor man’s” source of daily protein.

More needs to be done in the area of integrated nutrient management as well. Currently the farming systems rely heavily on farm yard manure and compost but the supplies are inadequate to raise and sustain higher levels of productivity. Much more can be done in the area of green leaf manuring and green manuring for both bhari and khet lands. Farmers are currently domesticating *wild fodder* sources and the same might be envisaged for trees whose leaves are sources of *green manure*. The potential for boundary planting of perennial green leaf manure sources should be explored. There is a need for revival of annual green

manuring via Dhaincha (usually seeds are mentioned as the main constraint). Through its innovation support fund LI-BIRD supported studies on Dhaincha (linkages should be established with the recipient of that grant). Community seed banks of green manure sources maybe considered where organic agriculture is being promoted/emphasised.

Most farmers have a livestock component and generally recycling opportunities are already maximized: little can be suggested by way of improvements related to nutrient recycling. The farmers are already very well versed with key principles/practices. Special mention must be made about the cattle shed improvements (supported by DF) promoted by LI-BIRD. LI-BIRD has supported the costs for setting up cement floors with accompanying drains which allow for better recovery and use of cattle manure and urine. These are used in the compost preparation process, liquid fertiliser and bio-nutrient sprays and in feeding bio gas plants<sup>2</sup>. This simple idea is worth promoting more widely.

#### **4.6. Home gardens and upland farms: Still the best opportunity for conserving diversity in Nepal (role for diversity kits, plant introductions and support-nurseries)**

Home gardens in Nepal are rather unique in the fact that they are still very diverse and still recognized by local communities for their contribution to household nutrition. Because of LI-BIRD's efforts to distribute diversity kits (assorted seed kits), home gardens continue to be enriched through the introduction of other varieties. The concept of diversity kits should be expanded so it includes wild-food plants as well. Home gardens are well integrated with livestock systems (cattle, buffalo and goats mostly).

More recently including with DF support, beehives are being introduced. This is an excellent conservation-oriented livelihood activity with much scope for expansion given the growing demand for organic honey. LI-BIRD is encouraged to make contact with the Keystone Foundation in Cooner, Tamilnadu, South India, probably the region's best example of honey bee-based livelihoods (was, balms, honey, etc.) processing and marketing. Bee keeping-based enterprises are more consistent with an environmental agenda than the growing of exotic vegetables for livelihood.

More action research is needed to explore production increases in legumes through bacterial inoculants. Though commercial sources are available, bacterial inoculants are available and LI-BIRD has introduced them, one does not get the impression that this is done on a sufficiently large scale for it to have the necessary impact. Field visits in all project sites have confirmed that the practice of home gardens is very much "alive and growing". Now,

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<sup>2</sup> Every house visited during this review had a bio gas plant. This is indeed impressive. Many ideas take time to "catch on". Bio gas has been promoted for two to three decades and the technology has evolved. It appears that finally an appropriate model has evolved. But it also brings home one very important point: one has to pursue the promotion of an idea for considerable length of time. When a critical mass of adopters has been reached within a community spontaneous spread of a good idea is ensured. (Incidentally gas is typically used for cooking purposes for electrification. This is a considerable saving on cooking energy costs and less reliance on fuel wood. Effluents are used in compost.)

partly due to LI-BIRD's advocacy efforts but also because of the revival of food security on the global agenda, home gardens are recognized at the community and national levels for their contributions to household food security and nutrition. The critical role played by diversity kits, diversity blocks and public awareness via posters/calendars must be highlighted. Building on its early work in home gardens LI-BIRD is now up scaling its work by linking within the national system. At a February 2008 workshop held in Pokhara, the Director General of Agriculture indicated his commitment to mainstream the home gardening approach in DoA's plans. With technical support from LI-BIRD, DoA will scale up good practices of home gardens in 17 of the country's districts. The program is being implemented via the District Agricultural Development Offices (DADOs). Norms have been developed for the home gardening program in the national system to support this initiative. The good practices generated by LIBIRD (e.g. diversity kits and blocks) will be scaled up in the national campaign (CBM and home gardens). However there is a critically important need for community level educational materials especially posters (see other sections of this report).

LIBIRD has also brought international attention to home garden contributions via its association with Biodiversity International (formerly IPGRI) and other international organisations such as SDC, KHI, etc. The conduct of a national workshop in August 2004 in Pokhara might be considered a milestone event both in terms of the attention the event itself generated, but more importantly through internationally distributed proceedings (Resham Gautam, Bhuwon Stahphit, Pratap Shreshta 2006. *Home gardens in Nepal: Proceedings of a national workshop*).

#### **4.7. Revolving funds: A mechanism for galvanising community action and a tool for enhancing sustainability**

With DF assistance, LI-BIRD has provided financial assistance in the form revolving funds to its community groups. It has encouraged groups to establish savings. This is the first time that LIBIRD has been able to test this approach in its project villages. A total of Rs 56,000 was provided per community group in three instalments: Rs 16,000 in Year 2, Rs 20,000 for each Year 3 and Year 4. In every case the revolving fund was accompanied by a savings program. Saving rates, interest rates and use of funds differ from one group to another, indicating that the groups were able to make their own decision and come up with their own rules. The revolving funds and the savings program that emerged alongside it are among the major accomplishments of the project.

The funds are group managed and have played a critical role in linking producers with the market by providing them with inputs to engage in economically productive activities. Capacities have been built on financial management and group mobilization. Benefits include the opportunity to engage in vegetable production through improved systems (e.g. tunnel production) or in providing access to improved seeds (PJB rice variety) and in small

livestock production. The revolving fund program has helped greatly to convene groups and strengthen them to address not only the livelihood agenda but the agricultural biodiversity agenda as well. The introduction of a revolving fund component has been of special relevance to women. In the five focus group discussions organised during this evaluation over 70% of those in attendance were women (in most cases they had leadership roles).

It is expected that the funds will help groups sustain their activities once DF support is discontinued. One of the follow up to be considered is for LI-BIRD to assist the groups to streamline their fund management activities, particularly with regards book keeping for the savings and revolving fund components and the issuance and maintenance of individual passbooks. Women in at least two of the sites can now already serve as resource persons (in the national CBM efforts) to bring this culture of savings and credit to other small groups.

#### **4.8. Processing, packaging and marketing: Value addition pathways: Social value, market value and household food and nutrition agenda**

The DF-assisted project is the first effort of LI-BIRD to test value addition and economic incentives in conserving agricultural biodiversity in a more systematic way and with wider farming communities. LI-BIRD has attempted to link entrepreneurs with wider markets. The project has broken new grounds in testing the relevance of approaches that link markets with custodians of agricultural biodiversity: farmers. The impact of this is particularly significant in the case of two varieties of rice, taro, finger millet, buckwheat. The potential for organic markets to contribute to conservation of fruits and vegetables is also being mentioned but yet to be demonstrated. The project used product diversification of local crops as means to generate better commercial opportunities. Products like cake, malt, cookies were developed from finger millet and buckwheat aimed at urban audiences and youth. With taro, efforts were made to improve the quality of products (masaura, tandra, gava) by standardizing ingredients in *indigenous* recipes and also by developing new products such as taro chips. The products that gained popularity were masaura, tandra, gava, millet flour, millet malt, millet cake. What has been somewhat lacking is a good economic analysis of these activities.

LI-BIRD has supported one entrepreneur with support for labelling; it made a big difference according to the owner of Bindeshwani fruit processing and pickle industry. Branding is also important. Millet malt is sold as “natural malt” and is now found in many important departmental stores in Pokhara. (During this evaluation at least four such business outlets were visited.) Beyond assuring quality products, branding, the use of logos and labels and proper packaging are important and can make a difference.

In the national CBM program (which has subsumed the last year of the current linking markets/DF-assisted project), far more attention needs to be given to hygienic solar drying hardware and practices and the general area of packaging, branding and labelling. The progress in these areas is limited so far and issues of food safety must be flagged at this

stage. LI-BIRD has not done much to ensure that drying and processing techniques are safe for human consumption. Moreover the maximisation of opportunities presented by the markets cannot be fully realized unless more work is done on drying techniques. Solar drying technologies appear to be a major new area of work for LI-BIRD to explore in future (dehydrated vegetables, wild foods and medicinal plants). Group-based (SHG) management of drying units should be considered and opportunities for availing government subsidies should be maximised.

More methodological work (action research) is also needed for testing and developing models for collection centers and for developing mechanisms for linking up with retailers and wholesalers. More comprehensive commodity specific market chain analysis is needed. These *methods development* work is best done in the original five sites (DF assisted) rather than in a totally new area. It does not make sense to totally abandon business-development support services to the five project sites (just because that phase of the project has ended) just when it is starting to take off.

#### **4.9. An urgent need for market chain analysis approaches**

LI-BIRD has done one market study but it did not focus on producers and instead emphasized the consumers, wholesalers, retail outlets, etc. The market study therefore was not adequate for purposes of influencing implementation because it needed to take a broader market chain approach. However that market study did point out one very important fact: consumer and trader interest in local food crops is high and rising.

LI-BIRD must seriously consider market chain analysis approaches as a key baseline activity wherever it works. It is on the basis of such studies that one can determine where the focus of the interventions should be. These studies could be made more participatory than they currently are. Here lies an opportunity for methodological development. To be able to do this LI-BIRD would have to seriously consider hiring an *experienced* business development specialist with a background in agricultural economics. LI-BIRD is encouraged to make contact with the economists supporting the landscape approach (IRRI-IFAD assisted) at the IAAS in Rampur. They have done some useful studies on vegetables which might be applied to LI-BIRD's own crops.

During this evaluation a visit was made to ANSAB<sup>3</sup> in Kathmandu. ANSAB has done considerable amount of work on the marketing of non-timber forest products and their experiences might be applied to LI-BIRD's work. ANSAB is a likely ally in related capacity development that LIBIRD might become engaged as part of its national programs.

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<sup>3</sup> LI-BIRD has recently started collaboration with ANSAB in implementing a rice and legume project supported by the Research in Use Program (RiUP) of DFID.

#### 4.10. Linking producers with markets: Reducing the gap between farm gate and market price differences

During the focus group discussions conducted during this evaluation, it was very evident that there is a substantial difference between farm gate and market prices and this different from season to season as well. Here is a simple example on Jetho Budho rice from Arba (Amalchaur) to illustrate the hidden opportunities for increasing income from local crops.

**TABLE 1: PRICE OF JETHO BUDHO RICE (RS PER MURRI)**

Sale period	Farm gate price	Market price
Harvest season	1600	1800
4- 6 months later	2000	2400

1 murri = 48-50 kgs.

1 pathi = 2.44 kgs.

Similar evidence was obtained from other sites and generally it can be assumed that there is a Rs 600 differential depending on whether the grain is sold immediately after harvest or 4-6 months later. The implication of this is the need to identify ways for communities to store their crop for longer period before selling in the market. What is needed is a way for farmers to secure loans against their harvest to meet their cash needs. When the crop is finally sold the loans are paid back. Creative use of the revolving fund (if it was a bigger) might be considered. One major drawback is the lack of storage place for the grain.<sup>4</sup>

Even if the crop were to be sold immediately upon harvest ways should be explored to reduce the number of intermediaries and to organise buyers to secure the produce directly from collection centers.

Here is a brief presentation based on information collected during the focal group discussion (conducted during the evaluation) in Chaur with Pratigya Sahakari. The returns irrespective of variety differ depending on whether the rice is sold as paddy or if it is milled prior to selling. The data should illustrate the point made:

**TABLE 2: PRICES ALONG THE MARKET CHAIN**

Product category	Farm gate price	Mill-buyer price /murri	Consumer price/murri
Paddy(anadi)	1300/murri	1600	2200/murri
Rice(anadi)	180/pathi	200/pathi	250/pathi
Paddy(PJB)	1300/murri	1550/murri	2000/murri
Rice(PJB)	160/pathi	180/pathi	235/pathi

1 murri = 48-50 kgs

1 pathi = 2.44 kgs

<sup>4</sup> Lessons from the grain bank concept used in tribal areas of Orissa (check out Agragamee work in Orissa).



Making the links between the producer and buyers towards the end of the chain can translate into increased returns to the farming communities. These approaches are worth trying out but they must be backed up by (and based on) market chain analysis for the specific crops being considered.

#### **4.11. Value addition through seed-production: Role for a more sophisticated, systematised and commercial approach to seed production**

By increasing the scale of production better prices and markets the project has been secured for Pokhereli Jethobudho and Anadi Rice, bean cowpea, taro, ginger, finger millet and some vegetables. By promoting quality seed production (same crops as above and Perilla) the commercial value of local crops can be enhanced as well. The promotion of local crops by commercializing seed production is an important means for biodiversity conservation. The DF-assisted project for the first time, systematically tested seed markets and associated seed production support activities. The best example is from the seed production experiences with *Pokhrela Jethobudho or PJB* (local land race) of the Fewa seed producers groups at Pame and Thulakhet of Pokhara. This work is jointly conducted with the District Agricultural Development Office. The FEWA seed producers group has produced and marketed 5 tonnes of PJB seed earning an income of Rs 1,75,000. Vegetable seed production is also being tested and developed via the DF-assisted project though on very small scale: small quantities of seed are being produced. Farmer groups in Arwa, Eklekhet, Serabensi and Pumdibhundi produced and marketed 650 kg of butter beans, 200 kg of four season beans and 1500 kg of IT line cowpea seeds.

The evaluator and project staff visited one agricultural inputs supplier in Pokhara. Wide selection of seeds was being made available but mostly improved varieties (including hybrid seeds). While LI-BIRD is doing well to put more attention on a few crops that it is specializing (e.g. IT cowpea, butter beans, etc.) it might want to consider going into the business of producing seeds for kitchen gardens and home gardens for consumers in urban and peri-urban areas. However these varieties could be marketed as *heritage varieties* and labelled as such. The same consumers that patronise organic foods could be targeted. Seed packets could carry important messages regarding this heritage and the conservation agenda.

Simple seed packaging hardware is available in India (aluminium foil packaging) and should be explored. The four areas (indicated in the earlier paragraph) may be considered as areas for expansion of vegetable-based seed production.

#### **4.12. Rice-based income generation**

Rice farming of local varieties is increasingly becoming an attractive economic proposition. Rice prices are increasing and returns are improving (with some varieties being exceptions) especially as minimal levels of chemical fertilisers are consumed. If LI-BIRD continues to work on crop enhancement approaches as it is doing for Jetho Budho (PJB), Anadi and

Sunaulo Sugandha (in Chitwan) and introduces agronomic measures to increase productivity further (via nursery management, green manure, etc.) the economic incentive can be taken advantage of. When asked which were the most marketable crops in Chaur, villagers mentioned Anadi rice, PJB rice and taro products). The following data collected during the evaluation, from a focus group discussion in Chaur Begnas will further illustrate the point about rising prices for locally grown varieties.

**Table 3: CHANGES in RICE PROCUREMENT PRICES  
(prices in Nepali rupees per murri)**

Variety	Price 5 years ago	Current price
Anadi	1100	1700
Jethod Budho	700	1400
Ekle	600-700	1000
Dhabe Gaurea	700-800	1000-1100
Madhese	600-700	700
Gurdhi	600-700	750

Farmers have also reported that they are looking for special attributes including recovery rates when they choose a variety. While the NARC released variety Radha 4 gives an impressive harvest, villagers report a low recovery rate during milling. The following table collected from the same focus group discussion illustrates this well.

**Table 4: RECOVERY RATES OF DIFFERENT VARIETIES OF RICE**

Rice variety	Paddy (pathi)	Rice (pathi)
Radha 4	20	8(40%)
Ekle	20	12(60%)
Jetho Budho	20	12 (60%)
Mansuli	20	10(50%)

There is also considerable scope for value addition in rice by processing: e.g. the preparation of puffed (*siraula*) and beaten rice (*chiura*). While *siraula* can fetch Rs 100 per kg, *Chiura* fetches Rs 150 kg. Compare it with what is obtained for normal rice: Rs 75/kg. The potential for small scale processing of rice needs to be explored further because of its relevance in increasing income opportunities for women. Local varieties are uniquely preferred for processing and full advantage needs to be taken.

#### **4.13. Capitalising on the comparative advantages of local communities for product specialisation**

Over the past years, LI-BIRD has identified local communities and encouraged them to specialise in certain crops and varieties. One such community is Pumdhibhumdi (one of the DF-assisted project village) where finger millet is valued by the local community. LIBIRD has

been working on crop enhancement (varietal assessments and introductions), introduction of legume intercrops and finger millet product diversification. The local CBO Margajyoti Powar Samuha has been conserving a number of varieties (Dalle, Kalo Dale, Seto Dalle, Jee50-16, Okhle, etc.). The local community report that both prices and demand for finger millet is rising. One introduced variety Okhle 1 is very popular among farmers not because of its high production levels but interestingly because animals relish the straw. There is very little rice in the area and cropping systems invariably involve maize followed by finger millet (which increasingly is being inter-cropped with legumes introduced by the project). Finger millet trials have been conducted in the community. Farmers continue to grow most of these varieties. Finger millet and maize are the most often traded products from the village. However almost all the members are involved in vegetable production now and increasingly the tunnel farming technology is spreading.

Similarly Chaur village in Begnas has focussed on conserving local landraces of rice. The village is known for its Anadi rice and also for the PJB rice. Thirteen varieties of rice have been identified in the catchment area of Pratigya Sahakari. In the wider Begnas area at least 70 varieties of rice can be found. These areas have more assured water sources and have been able to focus on rice. Farmers in this community report increasing income from rice-based enterprises (discussed elsewhere in this report). Chaur is also increasingly known for its taro and its area is increasing in all the project sites not just Chaur. LI-BIRD has introduced varieties from other areas into project sites via its diversity block program and plans are in the making for Chaur to be a “colocassia village”. Taro product diversification has been enhanced by training provided by the project (Masaura, Tandre and Gava). Arba is also emerging as a source of high quality butter bean and cowpea. Traders seek out the “arba butter” bean. These are local trends that are nurtured by the kind of strategic support provided by LI-BIRD through local crop enhancement, introduction of crops new to the area and value addition activities, e.g. horse gram (gahat in Nepali) in Serabesi, which is found to be performing very well.

#### **4.14. Exploring the organic markets**

Most of the farming (with some exceptions of lowland rice) in the project area is organic. Farmers have not found it profitable or convenient to use fertilisers and most often this is not available in the hills. LI-BIRD has only recently started to explore organic niche markets and initial indications are that these markets are a good way for communities of small farmers (producing small volumes of outputs) to get assured markets and fair prices. There is considerable interest among organic wholesalers (The Organic Village in Kathmandu) and retailers (in Pokhara) to buy directly from producers. LI-BIRD needs to invest in the forging of such linkages. Initial discussions in Kathmandu suggest that the problem of lack of volume (of specific kinds of vegetable) can be overcome by least ensuring that there are a range of organic products at a particular location to justify (pick up) transportation costs. Buyers such as the organic village are in fact willing to provide transportation to sites. What

is needed now is for LI-BIRD to further develop these opportunities/links with CBOs and producer groups and nurture/incubate the partnerships. For a start the Kathmandu markets offer better prospects for large volume purchases and the Pokhara restaurant sector and supermarkets for organic vegetables. The impression of the evaluator in Kathmandu is that markets are not a major concern. However LI-BIRD should go beyond perishables like vegetables and to explore grain legumes, dried fruits and vegetables (exploration of solar drying technologies must accompany value addition efforts) and the sale of organic vegetable seeds.

#### **4.15. Community seed banks: Need for revisiting the concept**

LI-BIRD has been promoting the idea of community seed banks (centralised village based storage). Most often this follows the preparation of community biodiversity registers. However it seems that farmers still prefer more decentralised systems of storage where seeds are stored within households. The experience in Kaski (project site) seems to validate this view. The cooperative was no longer maintaining the centralised community seed banks. The evaluator was told that the experiences in other districts (e.g. Bara) were more positive. The sustainability and long term management of community-based systems is in question: further action-research is warranted to determine better ways for long term storage of seeds *within* local communities. (Sustainability of the operation should be a key criterion for determining success.)

#### **4.16. Educational and training support materials on LI-BIRD exemplary practices: Their role in up-scaling efforts**

LI-BIRD has put together *good practice fliers* based on its past learnings/work. This is an extraordinarily well produced compilation (choice of topics, content coverage and comprehensiveness, brevity and presentation, etc.). This flier compilation is of special relevance to the national CBM project and all other efforts to up scale LI-BIRD's field-tested approaches. These series are of relevance to district officials, line agency staff, university educators and trainers and NGOs. However to maximise its impact it should be widely distributed (even over targeted). Copies are no longer available and serious consideration should be given to reprinting. Prior to reprinting the current compilation might be critically reviewed to reduce or combine topics and to add new topics based on experiences generated in the just concluded DF-assisted project (topics on market linkages, group strengthening, role of revolving funds, saving schemes, etc.). However a major revision is not advised.

LI-BIRD should consider a *new complementary* publication based on its conference proceedings. LI-BIRD is sitting on a "treasure trove" of valuable knowledge resources that remain mostly accessible to the scientific and academic community. There is a need to

screen conference proceedings and other publications<sup>5</sup> (such as those produced jointly by LI-BIRD and IPGRI with IDRC and SDC support) to generate a Resource book. The proposed publication would be limited to repackaging selected articles to highlight cases, success stories and new topics not covered in the flier series. This task could be outsourced to a team of qualified editors. A maximum of 40 articles may be considered.

The current set of fliers are effective instruments for public awareness, training and policy influence. However for community-level use these materials are of less relevance. What may be considered is a *new series* of posters *based* on the fliers for use in community-level and school-level educational efforts. Fortunately, LI-BIRD has used posters in the past and knows the value of these educational instruments but there is a need for systematising the production, presentation and distribution of posters. Participatory workshops (involving artists and community representatives brought together for purposes of critiquing and revising drafts) for generating community education posters should be considered. Field testing and pre-testing of posters can be done within such workshops. Given the current (relatively high) level of awareness of conservation issues, educational and instructional content is more important than the advocacy content: the posters must answer the question of *how* to enhance the economic, social and cultural value of local biodiversity. Posters should be packaged for nationwide use. This is one mechanism to ensure that the best of what has been learned is also shared at the community level.

#### **4.17. Virtual resource center on agro-biodiversity conservation**

As alluded to above, LI-BIRD has accumulated an impressive amount of knowledge resources. With the new initiatives for national CBM and the South Asia initiative (DF contributes to both these two initiatives) the need for improving access to such resources is of prime importance. It makes sense for LI-BIRD to establish a *Virtual Resource Center* from where its growing range of partners including trainers and educators, can draw information resources from. In the medium- to long-term, partners can upload their own contributions. LI-BIRD is currently updating its website and should consider a link to a virtual resource center. For a start, the Good Practice fliers, powerpoint presentations, electronic versions of newsletters, conference proceedings and LI-BIRD posters might be uploaded. The proposed poster series and fliers can serve as *prototypes* for other countries in the region. LIBIRD must make better use of electronic methods to share its resources and foster exchanges amongst its partners (in the context of its current plans to scale up nationally and across South Asia). LI-BIRD should be generous in its sharing of information resources and promote free use and adaptation of its materials otherwise its scaling-up plans will be

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<sup>5</sup>On farm conservation of agricultural biodiversity in Nepal. Volumes 1 and 2. On farm management of agricultural biodiversity in Nepal: Lessons learned, On farm management of agricultural biodiversity in Nepal, Lessons from community biodiversity register, Home gardens in Nepal, etc.

adversely affected. One cannot promote mainstreaming without being generous in dissemination!!

#### **4.18. Public awareness contributions of the diversity fairs**

LI-BIRD has achieved an extraordinary level of public awareness at community and national levels through its diversity fairs and trade fairs. Diversity fairs have been a very powerful tool in support of the conservation agenda and were mentioned often during the evaluation. The fair-venue also served to bring on a single platform the producers, traders, agri-business, food processors and consumers and has helped nurture informal partnerships across some of these sectors. Diversity fairs have helped connect CBOs from across different sites and to foster informal communication and information exchanges. Diversity fairs are being made an annual tradition and LIBIRD continues to play an important role in fostering partnerships in organising these fairs.

#### **4.19. Influencing agricultural education and training: Strategic opportunity for impact**

LI-BIRD has recently (August 3, 2008) signed a memorandum of agreement with the Institute of Agriculture and Animal Sciences (IAAS) of Tribhuvan University to support the activities of faculty and students. A wide range of activities will be featured: internship and on-the-job training for IAAS students, sharing of resource materials and methods, guiding student research and curriculum development. IAAS will be offering a post-graduate course related to agricultural biodiversity and LI-BIRD staff, experiences and resources will be featured in the new course offering. In addition LI-BIRD-generated experiences will be featured in allied courses offered by IAAS. This is indeed a milestone, offering much opportunity for model testing (curricula and methods) of innovative curricula and methods. LI-BIRD might want to consider using participatory curriculum development approaches (PCD) for developing the new university curriculum. This is an interesting initiative because of the potential for replication in other South Asian countries.

#### **4.20. National CBM: Ensuring that structure and process are balanced**

A desk analysis was done of LI-BIRD plans (2008-2011) for the national CBM program. The structure for implementing the CBM program is the national infrastructure system of the Department of Agriculture. The national CBM program is an attempt to scale up the best that LI-BIRD has been able to garner about agricultural biodiversity conservation. It is different from other LI-BIRD projects in the apparent complexity of its supervisory and implementation structure including the many partners (DoA, IAAS, NARC and BI and LI-BIRD) and multi-level structure (project steering committees, project management committee, project implementation team, BCDC). There might be a need to review the structures to ensure that they are necessary and effective in support of field level implementation (the first impression one gets is that it is a bit too top heavy).

The project attempts to take a broad view of biodiversity conservation but it is still not clear how it will engage the forestry and livestock components. The neglect of livestock might be addressed in the national CBM. However given the already high levels of achievement of community forestry in Nepal it is doubtful if LI-BIRD, via the National CBM, can add more value to community forestry. To ensure strategic contributions are made, it might make sense to focus on crops and livestock alone and possibly trees of relevance for green manuring.

In an effort to scale up pilot projects one faces the usual problem of dilution of quality and inadequate follow up. This must be guarded against. Without a strong monitoring component and an internal annual performance review system, a large program of this nature faces some risks. Fortunately some safe guards seem to have been put in place including the presence of LI-BIRD staff (25 staff including four project officers and ten community organisers). LI-BIRD envisages that the Department of Agriculture will be guided by the fliers of Good Practices and that capacity building will be an important contribution and responsibility of LI-BIRD. However it must still be emphasised that a monitoring and evaluation systems is needed at different levels of project implementation.

Every community will become engaged in awareness building and will undertake an assessment of biodiversity (community-based registers). Action plans will be developed by the communities themselves. This will be done at the lowest level and the role of the DoA and LI-BIRD is to provide strategic support and facilitation assistance to local groups to implement their own plans. The lessons generated by LI-BIRD's previous work including those assisted by the National Home Garden Project, the DF-assisted Market Linkages Project and the Landscape Project are to be featured in the national CBM project. The strategic emphasis on livelihoods and markets must receive special attention if the conservation agenda is to be successful and sustained.

#### **4.21. Partnerships have characterised LI-BIRD's work**

Right from the origins of LI-BIRD, its work has been partnership-based. The emphasis on research partnerships involving international, national research organisations and local CBOs has characterised LI-BIRD's work even before international agencies began promoting partnership-based work. This has enabled LI-BIRD to secure valuable inputs from the community *and* the scientific community, thus speeding up the process of crop enhancements. What are somewhat rather conspicuous however, have been the relatively lower levels of engagements of NGOs in this work. As a result there might have been some missed opportunities for up scaling LI-BIRD work beyond what is possible via the government pathways. The potential for engaging NGOs in *supporting* line agency-CBO alliances should be explored in the national CBM program and the South Asia partnerships/networking initiative. To be successful at the national level the effective engagement of NGOs (as support institutions) is also very important. Bringing the

agricultural biodiversity agenda to both the NGO and government sectors has implications for CBOs: they will be better backstopped and will have access to more resources.

#### **4.22. Management systems that enhance quality control**

LI-BIRD has an attractive, informative and useful annual report series and project reports which are potentially effective dissemination mechanisms. Project reporting has been timely and comprehensive. LI-BIRD appears to have not adequately emphasised a role for monitoring and evaluation within the project or within the organisation. An annual review and planning process is being used for major projects, but project documentation does not highlight annual planning and review processes. There is also an opportunity for exploring a role for peer-review process and internal self-assessments within project teams and across project teams within the organisation (e.g. on a mid-year basis). Finally, at the community level a special opportunity exists for emphasising participatory monitoring and evaluation based on an annual planning process.

#### **4.23. Policy influences of LI-BIRD's work**

LI-BIRD has been deliberate about situating its work within the wider national framework and seeking opportunities for influencing the national system. This working principle has characterized LI-BIRD's work from its early beginnings and continues until now. To that extent LI-BIRD is rather different from most NGOs or INGOs working in the agricultural sector in Nepal, many of whom are never able to enter into real partnerships with government.

LI-BIRD assisted the Government of Nepal to come up with a national policy on agricultural bio diversity conservation. Its home gardening program is national in scope primarily because it is undertaken in partnership with the Department of Agriculture. The current national CBM program involves national government particularly the Department of Agriculture more than at anytime in the past. To ensure effective NGO-GO partnerships LI-BIRD has signed a MOU with the DOA. However what is somewhat unique is that LI-BIRD provides strategic technical support in the form of training and technical supervision and deploys a team of its own to work alongside and in support of national government efforts.

### **5. LIMITATIONS OF THE PROJECT**

Changes were made on the original proposal by LI-BIRD which influenced the scope and coverage of the review. With the permission and approval of DF, LI-BIRD modified the scope of the project to reduce the earlier major focus on *linking biodiversity to markets*. Instead an increased emphasis was given to the strengthening of livelihoods through diversification activities and increasing productivity of current crops and processing. An effort was also made to bring in beneficiaries that were previously (socially) excluded. This resulted in the diversification of project activities into such areas as goat raising and mushroom production. The *niche market* dimension got diluted in the process. However,



as this report will indicate, the focus on market linkages was not lost: it received special attention in the last year of the project. As DF is supporting a national CBM program it is being assumed that the focus on market linkages will be continued in the future to complete the process. To that extent, both LI-BIRD and DF have assumed that the just concluded project was a pilot project aimed at generating lessons for the *national* project. This is what the evaluator has kept in mind in arriving at the scope, in the analysis of findings, and in writing this report.

## **6. KEY CONCLUSIONS AND RECOMMENDATIONS**

*6.1. Farming is still the primary industry in most of Nepal and certainly in the hills and making considerable contributions to food security. No mention was made of the global food/rice crisis or price rises. Farming in the five project sites is still very vibrant, the effects of migration on farming operations is still manageable and the communities generally food secure. LI-BIRD and DF recognises these contributions of local communities and builds on these strengths.*

*6.2. LI-BIRD has pioneered the effective promotion of in-situ conservation of agricultural biodiversity. It has generated and fostered some key principles for agrobiodiversity conservation. It believes that effective management and conservation of genetic resources takes place when resources are valued and used to meet the needs of farmers. LI-BIRD promotes home gardens and farm-diversification to conserve Nepal's impressive diversity and to increase the commercial opportunities for these crops. Farmers benefit when they increase their scale of production and from value-addition.*

*6.3. LI-BIRD has recognised that conservation goals cannot be effectively addressed at the local level, without addressing livelihood and economic empowerment. Typically this principle suggests the need to use genetic resources (not just conserve them) by improving market opportunities for local crops and promoting their use for food and in value addition via processing and packaging.*

*6.4. LI-BIRD has only recently started to work with livelihood groups to manage financial resources (revolving funds) and to better access markets through value added products. Two main areas however require concerted/accelerated attention: increasing the agricultural productivity of local crops in traditional farming systems and business development aimed at value addition and income enhancement for local crops.*

*6.5. The DF-assisted project can be credited for having provided LI-BIRD its first opportunity to test and develop the market linkages dimension of conservation work: commercialisation of local crops, value addition through seed production and processing and establishing linkages with the private entrepreneurs. A special contribution of the just concluded DF-assisted project is the critical role that livelihood projects and revolving funds play in galvanising and sustaining group action.*

6.6. *One way to encourage farmers to continue to grow local crops (overall prices are on the rise for most of these) is to find ways to increase their productivity per unit area of land. LI-BIRD has use the DF-assisted project to explore such approaches but much more has to be done in future. There is a need for LI-BIRD to introduce agronomic improvement and promote crop diversification with the idea of increasing productivity of crops. LI-BIRD should develop systematic measures to strengthen in-situ conservation and crop enhancement strategies for legumes. More needs to be done in the area of integrated nutrient management including green manuring, green leaf manuring and recovery of animal waste.*

6.7. *Many opportunities exist for work on crops grown on Bhari land in the mid-hills of Nepal. These farms are also organic (by default) and advantage should be taken of the new emerging markets for these organic foods. Future focus on these Bhari crops (corn, millets and legumes) is warranted.*

6.8. *The good practices in home gardening generated by LI-BIRD will have to be scaled up in the national campaign (CBM and home gardens). There is a critically important need for community level educational materials especially posters to support a nationwide program on home gardening. The critical role played by diversity kits, diversity blocks and public awareness via posters/calendars must be highlighted.*

6.9. *The neglect of wild food plants and small livestock should be addressed in future. This should include domestication of wild food plants in home gardens, exploration of processing opportunities and IEC support.*

6.10. *A strong livelihood component is needed in order to strengthen groups, empower its members and orient them to market economies. Without a strong livelihood orientation groups cannot sustain themselves in the long run and ultimately their engagement in conservation program is affected as well. With an improved livelihood situation, groups can devote time and effort to conserving local biodiversity.*

6.11. *CBOs (coops, production groups, etc.) which are linked up with the market (even for improved/exotic crops) will also use this opportunity to test the market for local crops as well. As long as the project is able to **limit** its engagement to exotic crops to those with especially high income generating opportunities, there is less likelihood for conflict with the conservation agenda. Stronger and more sustainable groups can be expected to emerge and better links with the market will continue to evolve if balance is achieved.*

6.12. *However in keeping with LI-BIRD's plans to scale up its work across the country, LI-BIRD might want to subject these group building experiences to a critical review with the idea of drawing lessons from its recent experiences. LI-BIRD should also explore group-to-group mentoring. For example, some communities have separated their savings and revolving fund operations and others have merged them. There is a need to review experiences across sites. LI-BIRD will have to consider doing a "good practice" sheet on*

*group building processes and working with CBOs (a topic that is not adequately covered in the current good practices compilation).*

*6.13. LI-BIRD has been strong in its linkages with government, national and regional research, universities and community-based organisations but relatively weak with regards to linkages and partnerships with other NGOs within the country. A mapping of NGOs should be considered to identify what is being done and in which areas (by different NGOs). LI-BIRD should then explore ways on how to engage and influence NGOs to mainstream agricultural biodiversity approaches. The potential for engaging NGOs in supporting national line agency-CBO alliances should be explored in the national CBM program and the South Asia partnerships/networking initiative.*

*6.14. In order to increase the scale and sustainability of its impact, LI-BIRD also tries to influence policy makers, educators and agricultural administrators to ensure that adequate support systems and policy framework are in place. This parallel set of efforts is viewed as complementary to field level action that LI-BIRD is engaged with. LI-BIRD works closely with the National Agricultural Research Council, the Department of Agriculture, the Institute of Agriculture and Animal Science (IAAS) of Tribhuvan University and a number of other stakeholders. New policies and codes of conduct have been developed in the country with strategic support from LI-BIRD.*

*6.15. With the national policy framework now in place to support agricultural biodiversity conservation efforts and the use of a combination of strategies (use of public awareness information materials, policy briefs, community level education materials and site-based demonstrations, seed production and field action) LI-BIRD is in a position to make a major impact in Nepal via the National CBM program. However a strong and effective multi-level monitoring systems must be put into place along with an annual review and planning process.*

*6.16. The revolving funds program and the savings program that emerged alongside it are among the major accomplishments of the project. The funds are group managed and have played a critical role in linking producers with the market by providing them inputs to engage in economically productive activities. Capacities have been built on financial management and group mobilization. It is expected that the funds will help groups sustain their activities once DF support is discontinued. One of the follow up to be considered is for LI-BIRD to assist the groups to streamline their fund management activities.*

*6.17. Community groups are evolving with a range of expertise in managing economic activities. More needs to be done to capitalize on the knowledge resources that exist within these groups in nurturing new groups. LI-BIRD should explore group-to-group mentoring (and across groups). For example some communities have separated their savings and revolving fund activities and others have merged them. What can be learned across sites about these approaches? LIBIRD will have to consider doing a good practice sheet on group*

*building processes and working with CBOs (a topic that is not adequately covered in the current good practices compilation).*

6.18. *LI-BIRD must seriously consider market chain analysis approaches as a key baseline activity wherever it works. It is on the basis of such studies that one can determine where the focus of the interventions should be. This is an area for methodological research as well.*

6.19. *More methodological work (action research) is needed on testing and developing models for collection centers, mechanisms for linking up with retailers and wholesalers and commodity specific market chain analysis. Some of this methods-development work might best be done in the original five project sites (DF assisted) rather than in a totally new geographic area. It does not make sense to totally abandon business-development support services to the five project sites (because that phase of the project has ended) just when it is starting to take off.*

6.20. *Ways needed to identify for communities to store their crop for longer period before selling in the market. What is needed is a way for farmers to secure loans against their harvest to meet their cash needs. Creative use of the revolving fund (if it was a bigger) might be considered. Even if the crop were to be sold immediately upon harvest ways should be explored to reduce the number of intermediaries and to organise buyers to secure the produce directly from collection centers. Making the links between the producer and buyers towards the end of the chain can translate into increased returns to the farming communities.*

6.21. *The project has attempted to “mainstream poor and landless communities in conservation”, and has attempted to improve their access to land and farming inputs. However there is little evidence that this activity has substantially furthered the conservation agenda and if the opportunity costs/transaction costs adequately justify LI-BIRD’s engagement in such land “distribution” or “consolidation” efforts.*

6.22. *In the national CBM program (which has subsumed the last year of the current linking markets/DF-assisted project) far more attention needs to be given to hygienic solar drying hardware and practices and the general area of packaging, branding and labelling. The maximisation of opportunities presented by the markets cannot be fully realised unless more work is done on drying techniques to ensure that food safety standards are met. Dehydration of wild foods, tubers, vegetables and fruits of medicinal plants should be explored.*

6.23. *LI-BIRD reprint its Good Practice fliers<sup>1</sup> after critically reviewing the current collection of materials. The revision should not be extensive but aimed mainly at reducing or combining topics and to add new topics based on new experiences. To maximise its impact it should be widely distributed (even over targeted).*

6.24. *A new series of posters for use in community-level and school-level educational efforts are needed. Fortunately LI-BIRD has used posters in the past and knows the value of these educational instruments but there is a need for systematising the production, presentation and distribution of posters. Participatory “writing” workshops for generating community education posters should be considered. LI-BIRD will thereby ensure that the best of what it has learned is also shared at the community level.*

6.25. *LI-BIRD must consider the need to better use the electronic methods to share its resources and foster exchanges amongst its partners, given its current plans to scale up nationally and across South Asia. LI-BIRD should establish a Virtual Resource Center from where its growing range of partners can draw information resources from. Informal e-discussion groups should be considered as a way to update its members and to provide a platform for discussion.*

6.26. *LI-BIRD has an attractive, informative and useful annual report series and project reports which are potentially effective dissemination mechanisms. Project reporting has been timely and comprehensive.*

6.27. *LI-BIRD appears to have not adequately emphasised a role for monitoring and evaluation within the project or within the organisation. An annual review and planning process is being used for major projects, but project documentation does not highlight annual planning and review processes. There is also an opportunity for exploring a role for peer-review process and internal self-assessments within project teams and across project teams within the organisation (e.g. on a mid-year basis). Finally, at the community level a special opportunity exists for emphasising participatory monitoring and evaluation based on an annual planning process.*

6.28. *LI-BIRD is playing a major role in Nepal to sensitise people on climate change issues via the NGO group on Climate Change. It is also an active member of CLACC (Capacity Strengthening of Least Developed Countries) for Adaptation on Climate Change: [www.clacc.net](http://www.clacc.net)). This provides LI-BIRD an opportunity to bring attention to the impact of climate change on agricultural biodiversity. Three possible foci come to mind: **(a) participatory crop enhancement (b) community-based management and climate change adaptation (c) a bigger emphasis on networking and partnerships.***

6.29. *LI-BIRD has not done much to ensure that drying and processing techniques are safe for human consumption. Moreover the maximization of opportunities presented by the markets cannot be fully realised unless more work is done on drying techniques. Solar drying technologies appear to be a major new area of work for LI-BIRD to explore in future (dehydrated vegetables, wild foods and medicinal plants). Group-based (SHG) management of drying units should be considered and opportunities for availing government subsidies should be maximised.*

## **TERMS OF REFERENCE**

### **External Evaluation of the LI-BIRD Implemented Project: “Enhancing Benefits to Small and Poor Farmers by Linking Biodiversity to its Niche Market”**

#### **I. HISTORICAL BACKGROUND**

On-farm conservation and management of agricultural biodiversity is crucial for the nation’s economic development as it provides the basis for food and livelihoods security to myriads of Nepalese rural farmers. However, effective management and conservation of genetic resources on-farm takes place where the resources are valued and used to meet the needs of local communities and generate incomes through value addition of agricultural products. Due considering the fact, LI-BIRD has implemented “Enhancing Benefits to Small and Poor Farmers by Linking Biodiversity to its Niche Market” project in 5 VDCs of two districts in western Region of Nepal with the financial assistance from Development Fund, Norway for four years (2004-2007). The project was designed towards addressing the lack of knowledge and information among farmers about production, and the limited links and access to the markets by providing technical leadership in sustainable livelihood activities with a goal to enhance options for biodiversity-based livelihoods, income and improved nutrition of the small and marginal farmers.

The project largely built upon the good practices developed by LI-BIRD and other institutions including farmers’ innovations: for example, value addition initiative of on-farm crop conservation project and partnership models with diverse partners. The project adopted multi-dimensional approach involving multi-stakeholders such as Farmers Groups (FGs), Farmers’ Cooperatives (FCs), Private Entrepreneurs (PEs) and Government line agencies to address production, utilization, value addition, processing/packaging and marketing of local crops/cultivars.

#### **Focus of the project**

Major focus of the project was to improve food security and livelihoods of resource poor farmer through sustainable management of agricultural biodiversity, achieved by creating economic incentive and market networks for local crops and their products. Specific objectives were,

- To enhance biodiversity based livelihoods and nutrition of the farming communities
- To build capacity of local institutions and communities through innovative value addition initiatives
- To create public awareness about the importance and value of biodiversity
- To promote local products through increased demand amongst consumers thereby contributing to conservation of local crops and cultivars

#### **II. THE OBJECTIVE OF THE EVALUATION**

The main objective of the evaluation is to assess the effectiveness of the project in achieving its objectives. An important question to be addressed by the evaluation is to what extent farmers are

being empowered to manage agricultural biodiversity and if the project has had a positive impact on agro-biodiversity in the region and on the livelihoods of the targeted communities. The evaluation will assess the sustainability of the project activities and the methodology/approaches adopted by LI-BIRD and provide recommendations with respect to integrating the lessons learned into the National CBM project. The evaluation should:

1. Assess effectiveness of the project in terms of bringing desired changes in on-farm conservation of agricultural biodiversity and livelihoods of resource poor farmers.
2. Provide LI-BIRD and the Development Fund (DF) with an understanding of the strengths and weaknesses of the project strategies/approaches, looking at both the organisational challenges of the project as well as results at the field level.
3. Provide LI-BIRD with an opportunity to reflect on its activities and functioning and with inputs for improving its strategies, plans, policies and ways of working.

### III. MAIN AREAS OF ASSESSMENT

The main focus of the evaluation is to assess how the goal and objectives of the project have been achieved. The evaluation will also give insights into the working methods of the organisation and how the institutional framework can be strengthened.

#### 1. Analysis of the field interventions

(Comments: Two of the main questions would perhaps be on what contribution the project has had on the conservation of agricultural biodiversity and to what extent it has contributed to improving the socio-economic situation of small holder farmers. Such an analysis will then assess impact on the field with the farmers, e.g. in terms of:)

- Is the program making a positive impact in the field with the farmers, e.g. in terms of:
  - More diversity of crops in the farmers' fields
  - Increased food and nutrition security of farmers
  - Linking production of biodiversity products by farmers to niche markets
  - Better direct economic/social conditions of farmer
  - Increased capacity of farmers and farmers' groups (institutions) in managing their genetic resources
- How has the project been effective in reaching resource poor and socially excluded farmers, including women?
- How do the target groups/stakeholders perceive the project – e.g. in terms of performance and relevance?
- What were the major factors influencing the achievement or non-achievement of the objectives?
- Capacities at the local level to sustain the processes is important, which relates to the whole issue of people's/farmer's organisations
- The role of the farmers in planning, participation and monitoring the activities
- Has the value of agro-biodiversity gained acceptance by the targeted farmers? What is the potential of mainstreaming agro-biodiversity activities?

- What positive changes in awareness, engagement and capacity of private entrepreneurs (PEs) for value addition and marketing of local crops have taken place; and how this has contributed to increased marketing (increased demand) of local crops leading to on-farm conservation of agro biodiversity?
2. Organisational/Management/Institutional analysis of interventions
- Which people/actors have been involved in the project? What were their respective tasks and contributions?
  - Level of involvement and type of backstopping at field level by LI-BIRD
  - Assess the link between the field operations and LI-BIRD HQ in terms of technical backstopping, administration and capacity building
  - Leadership, planning, implementation and monitoring capacity at the field level
  - Which important actors have not or not sufficiently been involved?
  - Sustainability and cost-efficiency of the activities (e.g. related to number of participants...) considering the nature of the project and target beneficiaries
  - Methodology/approach, cost and relevance of the various interventions in relation to goals
  - Procedures for monitoring, reporting, planning
  - What are the organisational challenges in continuing the project?

#### IV. EVALUATION PROCESSES/METHODOLOGY

##### 1. Organising the evaluation

Main question: How well does the project **achieves its stated goals**?

The report will:

- State the main goals of the project as written in the project plans and as explained by the organisation.
- Identify the key activities of the project that was intended to lead to those goals.
- In depth analysis of 2-3 key activities
  - What are the methodology used?
  - What are the results of the activities and the degree of success?
  - Recommendations
- In the evaluator's opinion how relevant are project activities given the project's goals?
- How relevant is the project, given the organisation's goals?

##### 2. The evaluation team will consist of one member.



3. Prior to the field visit
  - i. TOR drafted and agreed by DF, the organisation and the evaluator.
  - ii. DF and the organisation provide documentation to the evaluator (soft or hard-copy), including reports, plans, proposals, information material, research, evaluations, any quantitative data.
  - iii. The organisation provides information as requested by the evaluator.
  - iv. The organisation and DF identify a suitable “cultural” and language translator, or a co-evaluator.
  
4. In the country
  - i. Introductory joint meeting with head-office/key decision-makers in the organisation.
  - ii. Stakeholder analyses (including possibly conflicting interests/agendas). The stakeholders include:
    - iii. Internal: Head office, district staff volunteers.
    - iv. External:
      - Organisations and individuals that implement the projects together with the organisation.
      - Organisation and individuals that are not cooperating partners of the organisation, but are relevant as judged by the evaluator.
      - Media that covered and did not cover the campaign.
      - Local population in the relevant areas.
      - Other relevant stakeholders.
  
  1. Before the evaluator leaves the country: Meeting where preliminary conclusions presented to the organisation’s staff (and Board or Management, if possible).
  2. Feedback from the organisation incorporated into the report.
  
5. About the Report
  - Structured and concise
  - Rationale for selection of certain sites/areas for in-depth analysis explained
  - Concrete indicators of achievement will be identified initially, and then measured and analysed
  - As the report will be assessable to the wider public in the internet, it is important that the report does not compromise the safety of the informants. When necessary, as list of codes instead of actual names might be used (with a code-key for DF use only). The informants have the rights to have access to the final report.
  
6. Timeline for the Evaluation

15 – 18 August 2008	Desk review of reports, publications and documents
18 – 30 August 2008	Field Visit (including debriefing LI-BIRD)
8 September 2008	Draft report circulated to DF and LI-BIRD for comments
30 September 2008	Final report submitted to DF by team leader