

**COMMUNITY-BASED BIODIVERSITY MANAGEMENT**  
**SOUTH ASIA PROGRAMME (CBM-SA)**

**Evaluation Report**

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for The Development Fund, Norway  
June 2012

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## Acknowledgments

This work is the result of hours of vivid and fascinating discussions with farming communities across South Asia: women and men who left their daily work and chores to come and share their insights about the CBM programme with us, their analysis and their views, their achievements and concerns. They walked us through their home gardens, farms, nurseries with dedication and pride. My warmest thanks and deepest respect go to them.

None of this would have been possible without the amazing support we received from partners, who met us in airports – large and small, at train stations – early morning or late at night, and took us to their field offices and to the farmers and shepherds they have been working with for years. They patiently listened, facilitated, answered, translated, drew even... until a picture formed in front of us – and that picture, with layers of stories, was always interesting, compelling, engaging.

Many thanks to CBM Green Foundation (Suresh, Srikant, Ramesh and Gangadhar), CBM Anthra (Sunny, Aashalata, Sagari, Shruti, Sagari, Sunny and field team), CBM UBINIG team (JohnnyBhai, SayyidaApa, SobhanBhai and field team), CBM Green Movement (Lal, Damika, Gayan and translator Sarange), CBM Nepal (Bijaya, Jhalak, Pratima, Birendra, Ramchandra, Purna, Shreeram, Indra, Gurudatta, Saches, Shanti, Giridhar) and the CBM-SA team in Pokhara (Pratima, Rachana and Sajal).

Last, but not least, I turn to Pitambar Shrestha, who has been a co-researcher, a facilitator, a translator, a friend, a supporter of every instant throughout this fascinating one-and-a-half month journey through Community-based Biodiversity Management in South Asia. It has been great to have you, Pitambar, and I don't think it could have happened without your discrete and unfaltering support and care.

La Roche de Rame, High-Alps, France

15 May 2012

## **List of Acronyms**

ABS	Access to and Benefit Sharing
AnGR	Animal Genetic Resources
ADCS	Agriculture Development and Conservation Society
BCDC	Biodiversity Conservation and Development Committee
CBM	Community based Biodiversity Management
CBO	Community Based Organization
CBR	Community Biodiversity Register
CSB	Community Seed Bank
DADO	District Agriculture Development Officer
DLSO	District Livestock Service Office DoA Department of Agriculture
LI-BIRD	Local Initiatives for Biodiversity, Research and Development
MAPs	Medicinal and Aromatic Plants
NARC	National Agriculture Research Centre
NUS	Neglected and Underutilized Species
PPB	Participatory Plant Breeding
PVS	Participatory Variety Selection
VDC	Village Development Committee

## 1. EXECUTIVE SUMMARY

The Community-Based Management of Biodiversity programme is funded by the Development Fund in South Asia and coordinated by LI-BIRD in Nepal. The CBM approach is being implemented in 29 sites across four countries with technical and organisational support from four partner organisations : LI-BIRD in Nepal, Anthra and Green Foundation in India, Green Movement in Sri Lanka and UBINIG in Bangladesh. All partner organisations focus on plant genetic resources, except for Anthra, whose focus is on animal genetic resources (the Deccani sheep) and associated wool-based craft and culture.

This evaluation, conducted during the period January to May 2012, aims at :

- a) providing inputs to strengthen the sustainability of methodological and organisational approaches promoted in CBMSA programme.
- b) offering critical feedback related to the participatory management of the regional coordination in CBMSA.

The evaluation was undertaken through a 37-days field work period, over which a total of 14 sites were visited in South Asia (6 sites in Nepal, and 2 in each of the other countries). Information was collected through individual interviews and focus-group discussions, in a gender-sensitive manner. Project staff provided support in terms of translation and facilitation.

All major CBM practices were investigated through a series of participatory exercises with farmer groups. Managerial and organisational issues were also discussed at length with field staff and project coordinators.

One of the key outcomes of this evaluation is a comparative assessment of the different CBM practices implemented at field level. Three practices, namely Community Seed Bank, CBM Fund and home garden stand out as most sustainable because :

- The Community Seed Bank is the basis for preserving agricultural diversity par excellence. It can easily be run and managed by farmers, it provides a secure source of seeds to all farmers in any CBM group, and therefore, farmers feel a strong sense of ownership with the community seed bank.
- The CBM Fund is used by hundreds of farmers across groups to start small enterprises such as livestock, vegetable cultivation, fruit cultivation, nursery, seed production, especially in Nepal. Thus the CBM Fund has proved successful, in Nepal, in generating new sources of livelihood for small and marginal farmers.
- Home gardens are an integral part of most farming systems in South Asia. They are largely managed by women, who tend to grow a large number of food crops that are readily available for preparing daily meals. CBM has provided support to strengthen home gardens as a source of livelihood, and as a site for experimenting with agro-biodiversity.

Unforeseen positive outcomes from CBM also stand out, including increased social cohesion (and reduced caste discrimination in parts of Nepal and India), intensification of seed exchanges at community level, community empowerment, high level of project ownership at group level, organisational capacity of farmer groups, craft revival as an outcome of animal genetic resources conservation.

Some of the major concerns arising out of this assessment are :

- insufficient programme coherence at regional level
- inconsistencies in the ways in which CBM practices are being implemented across sites (especially Diversity Block, value addition and Participatory Varietal Selection)
- lack of systematic attention to animal genetic resources
- weak monitoring mechanisms

A number of recommendations are proposed for improving and streamlining CBM practices and for enhancing coordination at regional level. Key recommendations include :

- introduce CBM Fund to increase communities' capacity to mobilise funds autonomously for conservation and livelihood
- scale-up the work on animal genetic resources (learning from Anthra's work)
- conduct critical assessment of value addition (case-by-case) and focus attention and support on most viable models
- support farmer-centered seed systems based on local seed production and marketing
- increase women's representation at executive and decision-making levels in farmer groups and the number of female staff in partner organisations
- reduce the number of implementing partners (in cases where country partners implement CBM through local NGOs)

## 2. INTRODUCTION

Agro-biodiversity is intimately linked to the fulfilment of livelihood needs and to the cultural make-up of farming communities in all regions of the world. Farmers manage crop and animal diversity in order to meet food, fodder and fuel needs, but also in order to maintain balanced diets, to perform religious rituals or to enhance the fertility of their farms<sup>1</sup>. Hence, the rationale for agro-biodiversity is manifold : ecological, economic, and socio-cultural. The dynamic seed exchanges that take place at community level, especially in South Asia, are but one example of the rich social make-up associated with agro-biodiversity management<sup>2</sup>. In fact, farmers' seed systems are an intrinsic part of locally-adapted agricultural systems. Hence the necessity to preserve the rights of farmers to save, exchange and sell seeds at community level and beyond.

Because of their critical role in agriculture as farmers, seed custodians, users of traditional knowledge and food-processors, women play a vital role in maintaining local crop varieties and animal breeds. Many studies have shown the importance of gender relations in biodiversity management<sup>3</sup>. Women and men may have different agendas in agriculture, different rationales for growing different crops, and their criteria for selecting specific varieties may also differ. For example, women pay more attention to the culinary qualities of crop varieties than men, and they have a higher stake than men in preserving crops and varieties that are used in worship (such as foxtail millet in South India, or barley in Nepal).

With the spread of high yielding varieties during the Green Revolution, and more recently, with the promotion of commercial crops and hybrid seeds, agro-biodiversity has come under threat. As growing conditions become more homogenous, and with the widespread adoption of chemical inputs, varieties developed by agricultural research stations or the seed industry become « the norm », displacing a wealth of locally-adapted crops and varieties. As farming systems change, fodder to feed cattle begins to lack, leading to sharp decline in cattle population all over South Asia. Local breeds of poultry and small ruminants are also fast disappearing with the promotion of improved breeds.

Climate change heralds a new era of instability in farming systems all over the world, with expected declines in crop yield in Africa, Central and South Asia, posing a direct threat to the livelihood of small farmers<sup>4</sup>. Although the value of agro-biodiversity in adaptation to climate change is increasingly being recognised, concerted efforts for the preservation of local crop and animal genetic resource by farming communities are still lacking.

The Community-based Biodiversity Management Programme funded by the Development Fund proposes a systematic approach for *in-situ* conservation. It is based on research conducted by LI-BIRD on on-farm management of agricultural biodiversity in Nepal. It is being implemented by LI-BIRD in 10 sites encompassing all major agro-ecological zones of Nepal, and by local partners in three other South Asian countries : UBINIG in Bangladesh, Green Movement of Sri Lanka, and two partners in South India : the Green Foundation in Karnataka and ANTHRA in Andhra Pradesh. CBM-Nepal has been receiving support from DF from 2008, and CBM-South Asia since 2009.

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<sup>1</sup> McNetting, R., 1993, *Smallholders, Householders. Farm families and the Ecology of Intensive, Sustainable Agriculture*, Stanford University Press, Stanford.

<sup>2</sup> Pionetti, C., 2005, *Sowing Autonomy : Gender and Seed Politics in Semi-Arid India*, IIED, London. Available online at [www.iied.org/pubs/pdfs/14502IIED.pdf](http://www.iied.org/pubs/pdfs/14502IIED.pdf)

<sup>3</sup> Howard, P., 2003, *Women and Plants : Gender relations in Biodiversity Management and Conservation*, Zed Books, London.

<sup>4</sup> FAO, 2008, *Climate change and Biodiversity for food and agriculture* : Technical background document for expert consultation, Rome.



The present evaluation convened by the Development Fund in December 2011 has two major objectives :

1. Provide inputs to strengthen the sustainability of methodological and organisational approaches promoted in CBMSA programme.
2. Provide a critical feedback related to the participatory management of the regional coordination in CBMSA.

An additional concern has been to look at CBM from a Climate change perspective, so as to provide preliminary insights for the transition from CBM to Programme 6/ABC : Agricultural Biodiversity and Climate Change for which DF has secured funding from NORAD for the coming five years<sup>5</sup>.

This report is the outcome of a qualitative and gender-sensitive research process. The focus of this evaluation is less on the 'what' and 'how much' questions (quantitative data) as it is on the 'how', 'why' and 'why not' questions (qualitative analysis) that underlie the programme and its effective implementation at field level.

The structure of the report is as follows. Section 2 on Main findings consists of five sub-sections presenting, respectively, the methods used during the evaluation, an overall assessment of CBM practices based on information collected at field-level, a comparative analysis of the sustainability of CBM practices, an analysis of strengths and challenges in organising farmers, and reflections on the functionality and effectiveness of the regional coordination. Section 3 is the concluding section and Section 4 provides some recommendations for sharpening the focus of CBM and addressing some of the challenges identified during the evaluation.

### **3. METHODOLOGY**

This evaluation is based on a range of methods of collection of primary data, and consultation of secondary sources including academic publications as well as non-academic literature on on-farm management of agro-biodiversity, gender relations in agro-biodiversity, organisational development and community empowerment.

Primary data sources included:

- Analysis of progress reports, semester or annual reports submitted to DF and from partners to LI-BIRD. Publication and dissemination materials (including written and audio-visual productions) produced by CBMSA at country-level, or as a regional programme. Review of training materials and policy documents produced by CBMSA, either as a country or as a regional programme.
- Focus group discussion with farmers and other target groups using participatory methods and tools in 6 selected sites in Nepal (2 research days per site on average) and 2 sites (1 research day per site) in India, Bangladesh and Sri Lanka (see below for details) followed-up with interviews with key or leading farmers.
- Interviews with project coordinators, field project officers and mobilisers and with the Senior Management Teams of all four partners organisations (before or during the field work)<sup>6</sup>.
- Feedback/debrief sessions with project team (including directors, technical advisors, project

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<sup>5</sup> Based on a discussion in Pokhara, Nepal, with Elisa and Kyrre Magnus Lind on February 15<sup>th</sup>, 2012.

<sup>6</sup> Due to lack of time, no separate meeting was organised with representatives of local and national institutions (such as District Agriculture Development Office and Department of Agriculture in Nepal) nor with policy-makers.

coordinators) in Nepal, India, Bangladesh and Sri Lanka after completing the field work.

The evaluation was conducted in several stages, with critical intellectual, technical and logistical inputs from LI-BIRD and from other partners at all stages. The main steps were :

### *1. Site selection (one month before starting the evaluation)*

- a) LI-BIRD contacted the partners and asked them to select 2 sites in each country for the evaluation based on the following criteria : geographical diversity, diversity in CBM practices carried out, diversity in size of groups and group membership, and in group maturity.
- b) LI-BIRD selected 6 sites in Nepal for the evaluation : 3 in Terai region (Dang, Bara and Jhapa), 2 in mid-hills (Doti and Begnas), and 1 in Himalayan area (Mustang). Out of these sites, 4 are recent sites (CBM started in 2008) and 2 are older 'resource sites' (Bara and Begnas) with over 10 years of experience in CBM-related work.
- c) Around one month ahead of the evaluation, Pitambar Shrestha from LI-BIRD prepared a draft schedule for the evaluation and circulated it to all partners and field-level coordinators. The final schedule for the evaluation is presented in Annex 1.

### *2. Selection of communities and informants*

- a) Upon reaching each site, a discussion was organised between the project team and the evaluation team. The objectives and approach pursued were discussed, and based on this, the project team identified farmer groups to be visited. Depending on the focus of the evaluation (specific CBM practices, group dynamics), adjustments were made to ensure that the objectives set out for each particular session could be met.
- b) Then a participatory process was used to select informants within each farmer group. Important criteria set out by the evaluation team were : a mix of men and women, representatives of all socio-economic categories represented in the group, a mix of group leaders and ordinary members, individuals with success stories and individuals facing challenges, direct and indirect project beneficiaries.
- c) In most sites in Nepal, a focus group discussion was organised with members of the Executive Committee on day 1, followed by individual interviews or farm visits, and then on day 2, one or two specific ward-level groups were selected and FGDs organised in order to get a more accurate understanding of the CBM project at ground level.

### *3. Main research questions and tools*

A range of research questions have informed this evaluation and are presented in Annex 2. While some deal strictly with CBM practices and their effectiveness (Community Biodiversity Register, Community Seed Bank, etc), others seek to gain an understanding of critical issues such as :

- a) level of ownership of the programme by the group
- b) sustainability of CBM practices
- c) group dynamics and challenges faced by the group from group formation to the present
- d) gender equity within the group and in leadership
- e) sense of empowerment generated by the group.

The outcome of some of these key questions are presented in section 2.4 below.

Table 1 below provides a summary of major topics investigated and methods used during the field work in each site visited.

**Table 1. Themes investigated and methods used in each site**

Site	Themes investigated	Method/tool
<b>NEPAL</b>		
Ghanteshwor (Doti)	Diversity Block (fruit, medicinal plants, beans, taro) Value addition (Citrus) Sustainability of CBM practices (1) Leadership and group dynamics	FGD Farm visit Matrix ranking (PRA) FGD, MSC
Rampur (Dang)	AnGR (poultry) Sustainability of CBM practices (2) Value addition (leaf-plate and dry legumes) Diversity Block (taro, chilli)	Poultry farm visit Visit of leaf-plate making unit Matrix ranking (PRA) FGD + case studies FGD
Kachorwa (Bara)	CSB, CBM Fund, CBR Diversity Block and PPB Group dynamics and gender relations	FGDs
Shivagunj (Jhapa)	Home garden and Diversity Block (rice, taro, banana, beans) Value addition (Kalo Nunyia rice) CBM Fund	Farm visits + FGD + PRA FGD MSC
Begnas (Kaski)	Wildrice conservation area PPB Value addition (taro, rice, medicinal plants, leaf-plate)	FGD PRA PRA + individual interview
Kunjo (Mustang)	Sustainability of CBM practices (3) Varietal enhancement (barley) Value addition (seabuckthorn juice) CBM Fund, home garden, seed production	Matrix ranking (PRA) FGD Timeline analysis (PRA) Individual interviews + FGD
<b>BANGLADESH</b>		
Adazan (Tangail)	Community Seed Wealth Centre Varietal enhancement	Individual interviews FGD
Shalpanaru (Tangail)	CSB/Village Seed hut Nursery of medicinal plants, Patti cow (AnGR)	FGD Farm visit
Bantiar (Sirajgonj)	Bamboo-binding, school programme Home garden, medicinal plants, seed sales Sustainability of CBM practices (4)	Field visit, school visit FGD + case studies Matrix ranking (PRA)
<b>INDIA</b>		
Ramchandrapur and Nastipur (Medak, AP)	Main components of AnGR Men's and women's sanghams Group dynamics/empowerment	FGD with staff and with shepherds + MSC FGD + case study
Sikindlapur (Medak, AP)	Process of revival of <i>Deccani</i> breed and <i>Gongadi</i> craft Wool <i>Sangham</i> : shepherds, spinners, weavers, <i>kada</i> -makers	FGD, visits to shepherds FGD + Value chain analysis (PRA)
Gundenatti (Kittur, Karnataka)	CSB and seed production Organic farming, Participatory Guarantee Scheme Group dynamics	FGD + Seed bank visit Farm visits Individual interviews
Kadkod (Sirsi, Karnataka)	Organic farming CSB and Rice diversity	Farm visit FGD + Rice diversity matrix
<b>SRI LANKA</b>		
Athungoda (Puttalam)	Agro-well, value addition, CBM Fund, CSB Sustainability of CBM practices (5)	2 FGD + farm visits + CSB visit Matrix ranking (PRA)
Kanthale (Trincomalee)	CSB, home gardens, Seed exchange Varietal enhancement, perceptions of climate change	FGD + Seed Bank visit PRA on Seed exchange FGD

**Legend:**

DB = Diversity Block ; CBR = Community Biodiversity Register ; CSB = Community Seed Bank ;  
AnGR = Animal Genetic Resources ; FGD = Focus Group Discussion ; PRA = Participatory Rural Appraisal ; MSC =  
Most Significant Change analysis

### *Facilitation and translation*

The study was facilitated by project staff in each country. Pitambar Shrestha, who has been involved with CBM from the initial stages of the project in Nepal, coordinated the study, and facilitated the field work in Nepal (organising meetings and translating from Nepali to English). In Bangladesh, India and Sri Lanka, we relied on project coordinators and field staff for organising meetings and translating from local languages into English.

This worked well overall, but there is an inherent challenge in relying on the coordinators of a project when trying to evaluate that same project. The reason for this is that they may be uncomfortable about revealing the 'least appealing' dimensions of the project: lack of methodological clarity, inherent contradictions, tensions within the group, insufficient capacity of local partners, limited project ownership by farmers.

We tried to overcome these barriers through open communication and through triangulation of information (getting insight from field officers, different categories of farmers, management teams). I also clearly expressed my expectations in terms of translation during focus group discussions in communities: what I expected was an exact translation of farmers' words, and not a summary or interpretation of what was said. I asked facilitators to take special care in capturing women's words and concerns, as this is essential for doing gender analysis. Overall, this approach yielded good results, and any gap in communication was promptly addressed. We also hired an external translator in one instance, which proved to be useful.

## **4. MAIN FINDINGS**

This section presents some key insights on the main CBM practices implemented by partners through farmer groups. Each CBM site has its own specificities in terms of ethnic composition of groups, agro-ecological conditions, cultural and political context. These have direct and indirect impact on CBM. It is not possible to capture the complexity of these nuances in a few pages. What we propose, then, is to highlight some of the good practices, challenges and shortcomings that stood out during this evaluation process, and to illustrate these with a few more specific case studies.

### **4.1. Overall assessment of CBM practices**

#### **4.1.1. Community Seed Bank**

*« Without seed, we can not think about biodiversity » (Bantiar village, Sirajgonj, Bangladesh)*

*« We trust our own seeds. We don't trust commercial seeds : to get high yields from market seeds, we need to use a lot of agro-chemicals » (Athungoda, Puttalam, Sri Lanka)*

*« If we don't have seed in our house, we can easily get seed from the seed bank » (a woman farmer, Ghanteshwor VDC, Doti, Nepal).*

A Community seed bank is a method for collecting, storing, regenerating or multiplying and

distributing local crop germplasm along with associated knowledge and important information about its use<sup>7</sup>. A community seed bank thus helps farmers fulfill their seed requirements for diverse agro-ecological conditions. It is an innovative practice for conserving local landraces, ensuring the continuity of local evolutionary processes and contributing to food security of farming communities<sup>8</sup>.

Community Seed Banks are present in all four countries, and in all sites visited except Mustang in Nepal and Medak (in Andhra Pradesh, India), which focuses on the conservation of animal genetic resources. The seed bank is at the core of CBM, and recognised for its vital role by farmers.

Due to the large number of CBM practices to be assessed within a limited amount of time, we decided to investigate different issues in different sites. More exhaustive information on number of accessions, type of information recorded in the Seed register, types of services offered by the CSB, etc can be obtained from partners. In the recommendations section, we propose a table for recording this information systematically and monitoring CSBs more closely.

### *Main contributions of CSB*

In Bangladesh, when we asked women farmers to spell out the most significant contributions of the Village Seed Hut, they listed four main points, all inter-related, and quite gendered :

1. « Safe and secured seed storage, raised above the ground, and therefore keeping seeds safe from water in rainy season or in case of flood.
2. Men are often tempted to sell seeds, instead of safeguarding them for the next season. ***But men don't necessarily know that women have seeds in the Seed Hut, so it makes it easier for women to save seeds.***
3. The establishment of the Seed Hut has given visibility and strength to the group.
4. The Seed Hut is a common place for all of us (a place for meeting and sharing) ».

### *The conservation agenda of CSB*

Bara is one of the resource sites in Nepal, established as a CBM site over 10 years ago. CBM is run by a farmers' organisation registered as the Agriculture Development and Conservation Society. This group has gained much experience in managing its Community Seed Bank, consisting of 86 rice varieties, 2 finger millet, 5 sponge gourd, 2 pigeon pea. Over the years, they have developed a method for ensuring that all these varieties are preserved every year at community level :

- The organisation prepares packets of 250 gm of seeds for each of the 86 rice varieties and distributes them to farmers.
- Rice has to be grown by every farmer in the group. If someone doesn't have a rice field, he/she can grow finger millet or sponge gourd instead.
- They started this system because everyone wanted to grow only a few aromatic varieties.
- All rice varieties are also grown in diversity block.

This system is effective in ensuring the preservation of local crop varieties through farmers' involvement, and can easily be replicated in other sites.

One obvious weakness of the Bara Seed Bank, however, is that it focuses only on four crops (rice, sponge gourd, finger millet, pigeon pea) because of the agenda of funding agencies, early on in the project. When we asked which other crops should be conserved, women came up with several other crops, and intricate rationale for conserving them :

- « We need to keep barley seeds because we need barley for worshipping purpose. Barley is

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<sup>7</sup> Sthapit, B. et al, *On-farm Management of Biodiversity Practices in Nepal : Good Practices*, LI-BIRD, IPGRI, IDRC.

<sup>8</sup> *Ibid.*

also important for diabetic people.

- Horse gram is important for kidney stone problems. Now it is very rare. Also useful to treat disease of animal (foot and mouth disease and animal fever).
- Sorghum : white sorghum is very good for different diseases, it gives good fodder, and nice bread can be prepared.
- We also want to preserve elephant foot yam and linseed ».

LI-BIRD is currently developing the Neglected and Underutilised Species (NUS) programme with other sources of funding, and will be working in Bara, with these women, precisely on these crops, and a few more. This participatory session with women farmers in Bara re-emphasised the necessity to involve women farmers in the *definition* of any biodiversity-based project, and to *better understand* the socio-cultural, culinary, religious, and health factors that underlie agro-biodiversity.

### *Management of CSB*

In Gundenatti, Karnataka (a transition zone between dry and hilly), the Green Foundation facilitates the distribution of seeds from the Community Seed Bank to farmers as part of the CBM programme, for a range of varieties : ladies' fingers, bitter gourd, bottle gourd, drumstick, spinach, tomato, amaranthus (3 varieties), pumpkin (3 varieties), field bean, cucumber, local capsicum, eggplant (4 varieties). We conducted a PRA with a group of farmers (men and women) from Gundenatti to understand the functioning of the community seed bank (Table 2).

**Table 2. Management of the Community Seed Bank in Gundenatti, Belgaum district, Karnataka**

	<b>RICE</b>	<b>PULSES</b>	<b>FINGER MILLET</b>	<b>VEGETABLES</b>
Name of main varieties distributed I = improved L = local	Intana (I) Dodigya (L) Kumkumsari (L red, aromatic) Moogadhsugandha (I) Jaya (I) Koumoda (L) Bangarketi (L)	Kumbesaru (greengram) Karikarela (chickpea) Gaddevere (field bean) Battakadle (greenpea) Kimpukadle (chickpea) Uddu (blackgram – 2 varieties)	Batragi Madigaragi Maggiragi	Ridge gourd Amaranth Ladies' fingers Beans (2 varieties) Eggplant Cucumber Bottle gourd
# of farmers who accessed seeds from Seed Bank in 2011	75 farmers : - 40 took local - 35 took improved	15 farmers	7 farmers	60 farmers
# of farmers growing varieties for conservation	Around 65 (may be 5-6 are not doing so well)	Not systematized	?	Not systematized
Volume of seed transactions in 2011	30 quintals (7 quintals bought by 1 NGO)	150 kg	5 kg	15 kg
# of farmers involved in seed production	40 farmers exclusively growing for seed purpose (collective production)	8 farmers provide excess seeds to Community Seed Bank	Ragi was brought from outside	10 farmers

Source : PRA with 8 men and 4 women farmers in Gundenatti, 23 March 2012.

This table shows that the seed bank is established and running, but could be improved in terms of systematizing methods for seed production, distribution and conservation. The seed bank also has several improved rice varieties, which is not exactly the objective of community seed bank under CBM. Existing local rice varieties could be enhanced (in terms of disease resistance, aroma, yield...)

through varietal enhancement (under CBM) so that farmers are less dependent on improved varieties.

### *Capacity-building on seed production and community seed bank management*

LI-BIRD is organising training for farmers to build their capacity on seed production, national and local seed regulations and management of community seed bank. One 4-days training organised in Nawalparasi in November 2011 was thus attended 26 lead farmers (7 women) representing 10 different districts of Nepal. The majority of these farmers are directly involved in local seed production and community seed bank management activities under the project and they gained on technical knowledge in seed production but also information about how to develop a seed business plan and marketing strategy. This type training should be replicated in other CBM-SA countries.

### *The CSB as a 'stimulator' of local seed exchange*

In Kantale, Sri Lanka, we decided to do an exercise in order to establish whether the creation of the Community Seed Bank led to an intensification of seed exchanges at community level (Table 3).

**Table 3. Evidence of informal seed exchanges amongst farmers in Kantale, Trincomalee District**

	Seeds given to CSB	Seeds taken from CSB	Seeds given to other farmers	Seeds taken from other farmers
HH 1	Chilli, ladies' fingers, amaranthus, papaya	Cowpea, eggplant, chilli, sorghum, papaya	Sorghum to 3 farmers	Yes
HH 2	Paddy (Sodrusamba and Hatouwi), cucumber	Eggplant, pumpkin, black gram, papaya, chilli	Chilli saplings (to 4 farmers), eggplant, capsicum	Yes
HH 3	Hashpumpkin, spinach	Pumpkin, papaya, sorghum	Bottle gourd, papaya, cowpea, spinach (to over 20 farmers)	Yes
HH 4	Greengram (2 varieties), ladies' fingers, blackgram, sorghum	Blackgram, sorghum, greengram, ladies' fingers, chilli, drumstick seedling	Ladies' fingers, chilli, eggplant (to over 20 farmers), 1 guava sapling to each HH	No
HH 5	Winged bean, sponge gourd	Pumpkin, bottle gourd, papaya, spinach, cowpea, chilli, eggplant, grape sapling	Cowpea, eggplant, chilli (to 3 farmers)	Sponge gourd, finger millet, black gram, cowpea (white) from 2 farmers
HH 6 (Great seed provider)	Cowpea (3 var), snake gourd, bitter gourd, finger millet, amaranth, green gram, ridge gourd, ladies' fingers, winged bean, cucumber, papaya	Sponge gourd, bottle gourd, black gram, papaya, winged bean	Cowpea, winged bean, ridge gourd, ladies' fingers, sweet potato (3 var.), cassava, eggplant saplings, tomato, chilli, jackfruit saplings, umbrella saplings (to 15-20 farmers)	Medicinal plants (several types), winged bean, cowpea

Source : PRA with 14 women and 4 men farmers in Kantale, Sri Lanka, 26.03.2012

The outcome of this exercise (Table 3) shows that :

1. seed exchanges have indeed intensified with the creation of the CSB
2. seed and saplings are exchanged for many different crops and varieties
3. virtually all farmers in the group are involved in seed exchanges (Table 3 presents results for 6 households only, but all 19 households surveyed displayed similar practices).

These findings are of significant because they support the idea that farmers' seed systems are dynamic and need to be supported *as an alternative* to the commercial seed system<sup>9</sup>.

One of the participants in the FGD in Kantale, an old man, made an interesting comment about the community seed bank. He said « *This initiative is not only good for our livelihood ; it's also good*

<sup>9</sup> This important point is further discussed in the Conclusions section.

*for our mental health and spiritual satisfaction* ». Indeed, the seed bank promotes *inter-generational learning*, and sharing of knowledge about farming between old and young, rich and poor, which is very important. It's a link between the past and the future.

### *Mainstreaming CSB in Government programmes*

In some cases, local groups have received support from local municipality to build Community Seed Bank structures (as in Doti for instance). This shows that there is growing interest on the part of local authorities in sites where groups have been active for some years. In Karnataka, some landlords with a keen sense of the 'public interest' (known as "Swami") have also expressed interest in supporting the establishment of seed banks at local level, which is a positive sign.

In most South Asian countries, Community Seed Banks are being established with support from non-State actors largely. However, in Nepal, the Government has been paying particular attention to the community-based models promoted by LI-BIRD, and will be sending officials to a National workshop on community seed bank to be held in June 2012.

Also, in every district where CBM is being implemented in Nepal, DADO (the District Agricultural Development Officer) is running a parallel programme in a different block, thus testing out CBM as an approach for Agricultural Development.

### *Challenges and shortcomings*

Across sites and countries, the challenges encountered by groups in running the seed bank include :

1. Difficulty to mobilise farmers around the conservation of local varieties. In Bangladesh, when Nayakrishi farmers started keeping seeds, large farmers were discouraging them. « We have to bring hybrid seeds ». Community leaders said : « We had to go forward with modern agriculture». Similar observation in Sri Lanka and in Doti, Nepal. In all three cases, however, those who earlier criticized now fully support the initiative.
2. Insufficient knowledge about seed preservation techniques : pest attack is a problem in the long-run (Athungoda, Sri Lanka).

Some of the shortcomings identified during the evaluation relate to :

- The management of the seed bank is not always systematic or logical enough. There has to be a clear methodology for distributing seed amongst farmers, returning seeds to the seed bank, distinguishing local and improved varieties, etc. Roles need to be assigned for the smooth functioning of the seed bank, and sound methods for recording-keeping need to be developed. In the Recommendations, we propose a series of indicators for monitoring various aspects of community seed bank, including management.
- In some sites, there lacks a systematic process for renewing seeds kept in the seed bank. In many sites, it is not entirely clear how seeds of local varieties get distributed amongst the group to ensure that all stored genetic material is renewed on a yearly basis.
- Low community involvement in managing the seed bank : in Bangladesh, the Community Seed Wealth Centre is run by UBINIG employees and a few volunteers. The functions of the CWS are to ensure regeneration, short-term storage, display and circulation of seeds used by local farmers. It acts as an *in situ* genebank from which farmers from the Naya Krishi Andolan can access seeds for their own farm or for their village-level Seed Hut. In principle, the Community Seed Wealth Centre and the seed huts therefore play complementary roles. There are two committees of farmers involved in the management of the CSW. These are the Natural Resource Auditing Committee (NRAC) and Specialised Women Seed Network (SWSN). In practice, however, we did not find that farmers had a strong sense of ownership of this Centre (which is located on the NGO premises). Also, the number of accessions is



impressive, and the system has been operating for over a decade, but there is still a doubt as to whether UBINIG will, in the medium-run and long-run, have sufficient resources to maintain these accessions (which have to be grown every year by specialised staff).

#### 4.1.2. CBM Fund

The CBM Fund is an integral part of the CBM approach: it's an important tool for mobilising financial, human and social capital to increase livelihood opportunities based on agrobiodiversity. It is a mechanism from which local CBM groups generate regular incomes in the form of interest, which can be used to continue basic conservation and livelihood development work when external support phases out. In addition, « this fund could become part of the access and benefit sharing scheme, where part of the benefits accruing from the use of community genetic resources can directly go to this fund and later be used for the welfare of the concerned community »<sup>10</sup>.

Owned and managed by the CBM Committee, the CBM Fund is an approach for linking conservation with livelihood development. At field level, this principle works well in some sites, and was found to be less rigorously applied in others. In this section, we try to illustrate differences in the actual functioning of this Fund, and underlying causes for such differences.

The institutional set-up for CBM in Bara, Nepal, is quite unique. In addition to the Agriculture Development and Conservation Society, there is a Savings and Credit Cooperative with 380 members (350 women), consisting of 10 women's groups. They have a separate committee for CBM Fund management under ADCS and the fund is mobilized as loans to members expressing the need for a loan. What is interesting is that ADCS has spelt out conditions for loan eligibility which establish a clear link between livelihood and conservation :

- Loan is given on rotational basis, and on recommendation by the group
- Anyone taking a loan has to grow at least one local rice variety (from the community seed bank). Landless households can grow sponge gourd near their house, or grow pigeon pea on public land<sup>11</sup>. Those who rent or share land should still grow at least one local rice variety.
- The interest rate on loans is 12% annually (as opposed to 60% in the case of money-lenders). There is no need for collateral (people had to put their gold or jewelry as collateral earlier).
- Loans (Rs. 5000 on average) can be used by women to start small businesses (eg. fermented pulses for sale) or to buy animals.

In other sites as well, CBM Fund is used to purchase animals : local poultry breeds, breeding bull (one compelling case in Jhapa, Nepal, where the bull owner earns over Nepali Rs. 12.000 per month from his bull), milking cows, etc. It is important to encourage farmers to use CBM loans to conserve local breeds (which is not uniformly the case at present).

In fact, there would be scope to increase the *potential of CBM Fund for animal-rearing* in Sri Lanka and Bangladesh, where *farmers in CBM groups strongly expressed this demand*. In Bangladesh, one PRA revealed that communities are totally dependent on external support for bamboo-binding. It may be worth developing a CBM Fund mechanism so that communities can gradually collect savings and invest in bamboo-binding, which helps farmers reclaim land (threatened with river-bank erosion) and increase agricultural biodiversity.

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<sup>10</sup> Sthapit, B. *et al*, *On-farm Management of Biodiversity Practices in Nepal : Good Practices*, LI-BIRD, IPGRI, IDRC.

<sup>11</sup> Landless households can be directly involved in farming (when they rent out or share land) or indirectly via waged labour. Often, a combination of the two is practiced.

Anthra is also supporting its *sanghams* to mobilise financial resources to conserve the local Deccani breed of sheep in the dryland Deccan Plateau. In Sikindlapur, women's *sanghams* organised loans (Rs. 3000) for 11 households to purchase a Deccani ram.

When compared with other savings or credit interventions, the CBM Fund is acclaimed as a positive mechanism. In Mustang, one lady said : « Other organisations give access to fund, but there are many problems in mobilising these funds, and repayment level is very low. With Biodiversity Conservation Development Committee, the fund is well-managed, and repayment rate is high<sup>12</sup> ».

Two main shortcomings have been identified during the evaluation with respect to the CBM Fund :

- In some cases, the CBM Fund is partly used household expenditures (one such case in Chayyo, Mustang), which is not appropriate.
- In several sites, there is no rigorous method for ensuring that group members who take loans engage, in return, in conservation activities (by growing local varieties as in Bara, for example). It would be easy enough to find innovative ways of ensuring that CBM Fund beneficiaries contribute to conservation (maintenance of the Diversity Block on a rotational basis, management of the Seed Bank). This process can be done in a participatory manner, eliciting ideas from community members.

Some key aspects for sustainability of CBM Fund include:

- Transparent management
- Higher involvement of women at CBM Fund management level (not just as beneficiaries)
- System for assessing, recording and monitoring how loans are used (at group level)
- Involvement of CBM fund beneficiaries in other CBM activities (home garden, varietal enhancement)

#### **4.1.3. Community Biodiversity Register and Diversity Fair**

In every site we visited, there is a story linked to some form of Biodiversity Fair. Fairs have usually played an essential role in :

- getting people aware of the diversity they do possess (in terms of crops, animals, wild edible species, medicinal plants, tree species...)
- initiating group activity around conservation of diversity
- identifying farmers or shepherds that stand out as keepers of seeds or local breeds
- starting the process of documenting agricultural biodiversity and associated information and traditional knowledge through CBR

The different partners have used various kinds of fairs or campaigns. The Green Foundation organised a series of Seed Jaathas in partnership with other NGOs and farmer organisations in the State federated in the Southern Action against Genetic Engineered (SAGE) Network. The campaign, which has been proactive in promoting biodiversity and organic farming, was conducted in 14 districts of Karnataka. The Green Foundation organised a 4-day campaign with varietal exhibition, speeches and meetings across two districts (Belgaum and Uttar Kannada), with 14 stops in local communities<sup>13</sup>.

According to Srikant, who coordinated this action, this process had several positive outcomes :

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<sup>12</sup> It was not possible to collect exact figures for the repayment rates under CBM during this evaluation.

<sup>13</sup> This initiative will be followed-up by a state-level convention of seed-savers on April 26<sup>th</sup>, 2012. The organisers are expecting 500 farmers.

1. farmers' increased awareness about genetically-engineered crops
2. the creation of a platform to remember and discuss local crop varieties
3. a cost-benefit analysis of organic vs. conventional farming (less dependency on costly inputs, health issues)
4. interest by farmers in gaining access to seeds of local varieties and learning about organic farming
5. identifying resource persons during the Jaatha : farmers already doing organic farming, few farmers doing marketing of local produce
6. identifying influential people with land (Swamiji) : «I can offer some land for experimentation and training », « We should have a community seed bank in our village ».
7. small schools and Gram Panchayats came forward with interest
8. important press coverage leading to demands from communities to receive support for conservation activities

In most sites, the Diversity Fair has been a one-time event, and the documentation through Community Biodiversity Register as well. These processes are participatory in nature, and tend to reinforce group dynamics, and so it may be a good idea to renew them occasionally.

This is what Anthra has been doing with its Deccani breed conservation Jatras. These have been taking place on a yearly basis for the last five years : the best rams, ewes and lambs of Deccani sheep and Osmanabadi goats are exhibited (in a central place in Hyderabad), thus generating pride amongst shepherds and interest amongst local community. In 2010, Anthra felt that organising a Jatra was very intensive in terms of human and financial resources, and may lead to spreading diseases amongst animals. Therefore a new format was thought out, and in March 2011, six villages were identified as centres for the Jatra. Shepherds could visit the flocks in these centres, and share ideas and concerns. In addition, a Gongadi exhibition – around the craft of spinning and weaving – was organised in Hyderabad in October 2011.

Hence, diversity fairs can be made more 'perennial' if CBM partners and farmer/shepherd groups work closely to identify the best format to give more visibility to local animal genetic resources and to create momentum within communities and amongst other stakeholders around biodiversity-based livelihoods, knowledge systems and crafts/artforms.

Similar observations can be made about CBRs. Once they have been prepared, CBRs tend to be static, with little group interactions around them. However, the experience of the group in Bara shows that it can also be a more *dynamic process for monitoring the status of genetic resources* at community level. The Agriculture Development and Conservation Society organised three rounds of CBRs in Bara. The third CBR included many more crops, and enabled them to understand that :

1. CBM interventions had led to an increase in the cultivation of local varieties
2. there were many women growing these varieties outside the group (with the hope of joining the savings and credit cooperative)
3. more focus should be placed on medicinal plants : the organisation planned, as a result, to establish a diversity block for medicinal and aromatic plants, with LI-BIRD's support.

There has been no reported case of CBR being used in order to support claims to traditional knowledge. However, anticipating that this may become a reality in the future, LI-BIRD is organising Access and Benefit Sharing trainings focusing on Farmers' Rights, ABS, national policy and International Treaty on Plant Genetic Resources<sup>14</sup>.

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<sup>14</sup> Source: CBM-Nepal Annual Progress Report, Jan-Dec 2011.

#### 4.1.4. Value addition

The value addition components of CBM is perhaps where we found most variations between sites in terms of process, outcomes, management and ownership. We should also add that it is difficult to grasp, in just one FGD, the complexity of each value addition case (number of people producing, selling, to whom, how frequently, at what price, and so on). In addition to this, there is a general assumption by LI-BIRD staff at ground level that « its works well for people », and in order to get to the underlying challenges of value addition, one first has to 'de-construct' this assumption.

In more concrete terms, we tried, in Nepal, to investigate on the actual returns from leaf-plate collection in Dang by interviewing women farmers from vulnerable households deriving a part of their livelihood from leaf collection (Case study 1).

##### **Case study 1 : The economics of leaf-plate collection in Dang : mixed outcomes**

###### **Interview with 5 women 'collectors' :**

**Seasons ?** Year-round activity expect for July-August-Sept. Peak season is April-May.

**Number of days spent monthly ?** Not regular. If no other source of income, they go every day.

**Time involved for collection ?** During peak season, it takes 1 hour, otherwise 2-3 hours. At least 3-5 hours go into it when they go.

**Time involved for leaf-plate making ?** It takes one day to prepare 100 plates.

Two types of plates : one with 12 leaves (100 per day), one with 4 leaves (200 per day)

**Price of leaf-plates ?** 0.25 Rs per plate for 4-leaves plate and 0.5 Rs for 12-leaves plate.

Woman 1. Before her husband's death, she was collecting leaves regularly. She would earn about 3000-4000 Rs every six months. Now she earns by selling buffalo milk, ghee. She also has goat and chicken. She is planning to start leaf-collection again. What is good is that she gets paid in cash the following day.

Woman 2. She used to earn a lot. Now she is not so fit, but she still earns 2000 to 3000 Rs per month. She remembers buying 50 kg of rice from a one-time payment. She is fully dependent on it, and she has to go more or less every day.

Woman 3. She goes to collect on alternate days : one day for fodder, the next day for leaves. « I come here to sell leaves once every 3 days (twice a week), and get 200 to 300 Rs every time ». On average 500 Rs per week. In one month, she earns 2000 to 2500 Rs. Her husband sends 4000-5000 Rs to 8000-9000 Rs per month. They have been able to acquire land, which she farms and which provides food for the family for 8-9 months.

###### **Main findings :**

- Leaf collection provides an additional source of income for vulnerable women
- Some women have stopped going for leaf collection because the money earned is not worth it.
- None of these women are members of the CBM group despite being invited : they argue that they would have « nothing to contribute », which signals a feeling of disempowerment.

In Mustang, we found out that seabuckthorn juice was not being marketed collectively, but individually, and did some further probing to find out why (Case study 2). A similar situation arose in Begnas, where collective action around Anadi rice and taro products seems to be phasing out. An individual woman farmer is now acting as an entrepreneur, buying from farmers and selling in Pokhara, and the cooperative has become less active over the past few years (for reasons we could not explore, for lack of time).

## Case study 2 . Seabuckthorn juice in Mustang : A story of complex social ties

### Interview with 8 farmers in Chhayo, Mustang :

**What is seabuckthorn juice ?** A juice made from mountain berries collected on wild trees, with very high Vitamine C content.

#### **How did seabuckthorn juice production start ?**

- Three organisations (including LI-BIRD) provide training to villagers
- LI-BIRD provided bottles and labeling in second year, but the house in which they were kept collapsed : all this was lost.
- Group members started producing and found that cost of production was very high (because of the cost of added sugar) and sales prices was also too high : there was no market to sell.
- Group members (75%) are now involved in producing and selling unprocessed juice for one month per year. Average production per HH : 20-30 liters. Average earning: 2000 Rs – 5000 Rs.

**Who are you selling to now ?** Each family individually sells juice to hotels in Lete (3-4 lodges), at 100 to 120 Rs per liter.

#### **Why are you not selling collectively?**

- « When you sell on your own, you can sell a small amount, and get some immediate cash which you can use for HH needs. »
- « It's because of poverty : people here have debts to repay, and they repay with seabuckthorn juice »
- « It's a 3-party agreement : people buy items from shops ; the hotel owners tell the shopkeeper to provide food items like rice to villagers ; then villagers pay in juice to the hotel owners ».
- Less than 50% of villagers who sell seabuckthorn receive cash : most people are tied with debts.

One positive example is the citrus processing unit in Doti, which seems to be well-managed by the group, and provides an outlet for farmers to sell their lemon and orange at a higher price. Saplings have also been distributed on a relatively large scale, to ensure the sustainability of the project.

Some key challenges need to be overcome for value addition to become more viable :

- Supporting organisations need to be more realistic about the products and market constraints : pricing mechanisms, market demand, competition, selling arrangements (eg: patron-client relations), transport constraints (which get compounded seasonally, and are always higher for women).
- Farmer groups need to develop sound marketing skills, and have a sense of what markets exist, what quantities they can produce, etc (i.e. they should prepare a business plan)
- There has to be more clarity on the level of external support required for a particular value-added product to emerge, and a clear exit strategy so that the collective effort does not collapse when support is withdrawn (as may have happened in Begnas).
- Innovation is a key to success : to give but one example, Anthra has been working with designers to revive the *Gongadi* (woolen blankets) prepared by the *Kurma* weavers : now new designs are available, and smaller blankets catering to the urban demand are also being prepared.

### 4.1.5. Home gardens

Home garden is not, strictly speaking, a component of the CBM project and in fact, LI-BIRD has a separate programme on home gardens in several districts of Nepal. Yet we included home gardens in this evaluation for two main reasons :

1. When we discussed CBM practices at village level, farmers generally mentioned home gardens as one important activity for conservation and livelihood

2. Home gardens are of particular significance to women, and since we set out to analyze gender relations in the CBM programme, it made sense to look at the home garden, which typically falls under the female domain.

In Nepal, resource home gardens are being developed under CBM (in addition to distribution of diversity kits to resource-poor households). Thus in Doti, for instance, at BCDC level, there are 8 resource home gardens that have received support from LI-BIRD for vermicompost production, irrigation pipes, and cattle shed improvement. These resource home gardens act as a « hub », and other group members visit them to learn, or to take seedlings and saplings.

Beyond this, home gardens are sites of exchange and experimentation by and among farmers, and this is true not only in Nepal, but also in Karnataka (India), in Sri Lanka and in Bangladesh. Through CBM, farmers have learnt to prepare compost, vermicompost, organic manure and pesticides. The distribution of seedlings and saplings has played a key role in increasing diversity in home gardens.

Two significant benefits from home gardens stand out :

1. Many farmers have been able to generate additional income due to improvement of their home garden. The diversity of crops grown in HG has increased overall, and sometimes dramatically, as a result of CBM interventions. In Doti, several households (including poor families) now earn 10 to 15.000 Nepali Rs from their home garden every year. Indira, who runs her household on her own, sells many products from her home garden : onion, beans, broleaf mustard, raddish, seedlings, milk, eggs, ghee, onion seeds. « This is how I maintain my family », she says.
2. The home garden is a place to try out new practices and gain confidence with organic farming practices (virtually in all CBM sites across South Asia) :
  - For one farmer in Doti, the most significant change in the village is the « use of home-made pesticides instead of chemical ones » and, as a result, the «sharp decline in use of chemical pesticides, which is good for the environment : plants, bees, people, land. Now when the Department of Agriculture provide us seeds and chemicals, we take the seeds, but we don't use the chemicals ».
  - In Kantale, Sri Lanka, after preparing and using organic manure and pesticides for one year in their home garden, several farmers realised that this lower costs of production. As a result, they transfered these techniques to their fields, and started cultivating land which had been left fallow for several years due to financial constraints. By adapting organic farming practices designed for home gardens to other parts of their farming systems, these farmers reveal their capacity to innovate and take benefits from the CBM programme several steps further.

#### ***4.1.6. Animal Genetic Resources Conservation***

Anthra has been on a journey of local breed and craft revival for around 15 years. After several years of research and documentation of ethnobotanic knowledge held by shepherd communities of the Deccan Plateau, Anthra began to observe that the Deccani breed, a local breed of majoritarily black sheep reared by the Kurma community, was disappearing. « Change happens like a tsunami », says Sagari Ramdas, one of the founders of Anthra, and currently Executive Director.

Anthra started working with small collectives – the *sanghams* – of shepherds to conserve this breed, which present two major particularities :

- the Deccani sheep are adapted to the dryland environment, and can withstand fodder scarcity much better than Red Nellore sheep, an introduced breed facing high mortality rates in the Deccan Plateau, and requiring high amounts of fodder and water (both of which are scarce during the dry season).
- its unique wool, which has high socio-cultural value for the Kurma, and formed the basis of a craft and way of life.

The shepherds eloquently express their preference for the Deccani sheep : « We want the black sheep, we don't want the red ones. We remove the red ones because it needs more fodder and water. It has no value », whereas the Deccani breed is drought-resistant : « It can survive simply by licking the mud ». And it has high value because of its tasty meat, thick wool and the manure it gives.

Anthra has been supporting *sangham* members to get back to the Deccani breed by progressively removing Red Nellore rams from their flocks. A good ram has to qualify on three main criteria :

- wool (*unni*) should be soft, of fine quality ; it should not be hairy (like the red sheep wool)
- horns (*komo*) should be nicely formed and shaped
- height and length : the animal should have a long back and it should be high.

The formation of strong *sanghams* (separate men's and women's sangham) also served to secure better access to Government veterinarian services (vaccination and deworming). And in 2011, the women *sanghams* were able to collect funds to buy 11 rams and one he-goat using loans provided by Anthra. The women *sanghams* have also been active in restoring traditional dryland cropping systems. And they have been able to revive their skills as spinners.

As one shepherd puts it : « It's been 2 years. Now there are more black sheep : we are getting the wool, selling the wool, we are back in this activity of sharing the wool, using the wool for making blankets, sheep mortality has decreased, we are able to withstand fodder shortage ».

A significant change that has taken place is that there is continuous supply of wool again (after many years). Anthra has helped to build a synergy between the villages keeping sheep flocks and the ones where spinners and weavers can still be found. « Wool is coming, women and spinning, we are weaving », says a weaver. Forty women have taken up spinning as a livelihood again (in 8 villages), and the number of looms has gone from 2 to 12 in the area.

In terms of craft revival, Anthra has played a major role in identifying women and men with the skills of spinning, weaving and *kada*-making (*kada* is the border of a blanket, made by *kada*-makers with special skills), connecting these people to one another, providing them with tools (some of which had been lost), and organising exhibitions to create a momentum around the *gongadi*, the wool blankets made by the *Kurma*. Anthra has worked with designers and craft specialists to broaden the market potential for *gongadi* and gather media attention around this craft revival process.

Some of the challenges which the *sanghams* are still facing include :

- fodder and water scarcity on a seasonal basis, which needs to be addressed innovatively (more cooperation between shepherds and farmers, involvement of the shepherd community in watershed conservation, in detilting of tanks, in tree-planting activities...)
- the lack of youth involved in this livelihood and craft (which is being addressed by selecting and training youth in various skills, including marketing)
- rapid change at societal level, leading to declining cohesion at community level, and an

inclination amongst the youth to leave the countryside. Hence the need to find urban consumers, to make weaving work more attractive to young people (through exhibits...)

- a larger trend of agricultural commercialisation, which is affected all rural livelihoods, and which Anthra is trying to address by orienting part of its CBM programme on the preservation of dryland cropping systems and locally-adapted varieties.

#### 4.1.7. Participatory Plant Breeding

In Nepal, grass root breeding and participatory plant breeding is taking place largely in cereal crops: 3 rice landraces (Kalonuniya in Shivagunj, Jhapa; Tilki in Rampur, Dang, Joroyal Basmati in Laxminagar, Doti) and Dabdi wheat landrace at Ghanteshwor, Doti. In Mustang, 6 accessions of barley has been selected and sent to Hill Crop Research Programme (HCRP), Kavre, Dolakha and some elite lines of HCRP are also cultivated in farmer's field along with the LI-BIRD selections for testing.

During the evaluation, we looked into PPB in Begnas, where a group of farmers have been conducting PPB on rice varieties with the help of scientists. From 7 members initially, the group now has 25 members, 10-12 of whom produce seeds for two varieties developed through PPB : improved Mansara and Biramphul (Table 4).

**Table 4. Evaluating the benefits from improved varieties developed through PPB, Begnas**

	Local Mansara	Improved Mansara	Local Biramphul	Improved Biramphul
Yield (per 750 sq meters)	50 kg (1 <i>moori</i> )	75 kg	150 kg	200 kg
Taste	Not good Low volume of rice	Softer, tastier, a bit more volume of cooked rice	Good eating quality, aromatic, high volume of rice	Good taste, less aroma, same volume of rice as local
Milling recovery	Low 3:1 (9 <i>pathi</i> of paddy gives 3 <i>pathi</i> of rice)	Higher (9 <i>pathi</i> gives 4 <i>pathi</i> )	High (20 <i>pathi</i> of paddy give 11 <i>pathi</i> of rice)	Same as local
Quality and quantity of straw	Low straw volume Medium quality Soft straw but deteriorates after lodging	More volume of straw, softer straw Cattle prefer this straw	Low volume, moderate quality	High volume, good quality
Lodging	It lodges, panicle looks down	Does not lodge, no dropping of panicle	It lodges	No lodging
Disease-insect resistance	Highly susceptible	Resistant	Highly susceptible	Resistant
Market demand	No demand	Demand in seed	High market demand	Demand in seed and rice (grain)
Value for adaptation to CC	None	Less lodging, so less risk of losing the crop in case of rain during harvesting season	No specific value	Yes due to less lodging
Rate of adoption by farmers	Very few	Many : 250 HH out of 300 are growing it in 4 villages (estimate)	Very very few	Many : 2/3 people are growing it in 4 villages (estimate)

Source : PRA with 8 farmers (4 women, 4 men) in Begnas, Nepal. March 2012.



One of the leading PPB farmers, Surya, explains that at the beginning, all activities were supported by LI-BIRD. Now, a fund has been created, and the group is more autonomous. Seeds of improved varieties are supplied free of cost, because no one buys seeds in this area : people normally exchange seeds.

PPB is a long-term process (6 to 8 years), which should only be tried out with a highly motivated group of farmers, and with support from plant breeders. The aim is not only the outcome (breeding and registering new varieties under farmer group's name), but the process of learning to work with local genetic resources.

Several rice varieties have been registered as an outcome of the PPB programme in Nepal, which is quite an achievement. Due to time constraints, it was beyond the scope of this evaluation to assess the rate of adoption of these varieties, and to review in detail the process for breeding and registering these varieties. However, LI-BIRD has produced several scientific publications with many details on process, performance and impact of PPB output and local institutions for PPB<sup>15</sup>.

#### **4.1.8. Other practices : diversity block, varietal enhancement, seed production, bamboo-binding**

Other practices developed under CBM have been studied in the course of the evaluation. Below is a summary of key findings in these areas :

- Diversity blocks can either be maintained by individuals (not ideal), by a farmer group or a school (in which it can be used to sensitise children)
- The main objective of a diversity block is to multiply limited rare seed which could be the source of seed for diversity kits, participatory plant breeding or *ex situ* collections. But in one instance (Chhayo, Mustang), we found one group protecting a patch of wild leafy green in a small diversity block and earning revenues from it (people pay a fee to collect some leafy greens, and the group manages the resource sustainably (which was not the case earlier).
- In Bara, farmers identified three main benefits from diversity blocks :
  - conserving lost varieties and preserving knowledge for the next generation
  - producing quality seeds
  - source of varieties for local farmers, for different landtypes and for different uses.
- Varietal enhancement : there are only a few cases, and farmers have not come forward with a strong motivation to carry out varietal enhancement. It has proved very beneficial to farmers in Jhapa, however : the *Kalo Nuniya* rice variety now marketed on a large scale, and the farmers are thinking to form a cooperative.
- Seed production and marketing is present in many sites. It aims to strengthen healthy seed systems and to ensure the sustained supply of seed of landraces (local or enhanced) to the farming communities.
- In Bangladesh, farmers sell seed of rice, jute, onion, potato, sesame, Indian spinach, grasspea, red amaranthus, mustard, spongegourd, bittergourd, okra, wheat, beans, pumpkin, barley. This activity is generating an income for families : « *Because of benefits from seed sales, we can send our kids to school* » (a woman farmer from Bantiar, Sirajgonj dist., Bangladesh). In

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<sup>15</sup> See Gyawali, S. et al., 2008, "Participatory Plant Breeding (PPB): A strategy for on-farm conservation and the improvement of landraces", in Sthapit, B. et al (eds), *On-farm management of agricultural biodiversity in Nepal*, Bioversity International, pp. 144-153.

groups of around 30 people, 20 on average sell seeds. Interestingly, women and men sell seeds of different crops... with different levels of benefits (Case study 3).

**Case study 3 : Making an income from seed sales in Bangladesh : men's and women's earnings.**

Family 1 : The wife sold black gram, mustard, jute, Indian spinach, papaya, red amaranth for 3500 Taka.

She used money for : treatment of son-in-law, sending kids to school (buying stationary). She still has 1000 Taka in savings, and jute seeds. The husband sold seeds for 2500 Th.

Family 2. In 2010, the wife earned 800 Taka from selling seeds of Indian spinach, ladies' fingers, amaranth, eggplant, beans. She used the income to buy a rice-cooking pot, a trunk, clothes for the kids. She still has 500 Taka saved. The husband sold seeds of mustard and sesame for 3000 Taka.

Family 3. The husband sold 12.000 Thaka's worth of rice seeds in 2010. He invested in foodgrain trade, buying and selling mustard and blackgram. He is expecting yearly returns as high as 30.000 Taka. He also earned 5000 Taka from potato seeds. His wife earned about 2000 Taka by selling seeds of ladies' fingers, amaranth, ash gourd, pumpkin. With this money, she sent her girls to school, bought clothes and books.

Family 4. The husband earned 15.000 Taka from selling seeds of rice, sesame, millet and blackgram. When we ask him how much his wife earns from selling seeds, he expressed skepticism: « Babir khawto thaka aar hobe » « How much money can my wife earn, really ? ». She earns 2000 to 3000 Th. from seeds of amaranth, Indian spinach, radish, papaya, ladies' fingers, sweet pumpkin and red amaranth.

- Bamboo-binding is another significant practice in Sirajgonj, Bangladesh : it is used to reclaim land that has been lost due to river-bank erosion. According to farmers in this area, this practice is a great success, and people come and see the results from distant places. The practice existed earlier, and could be restored thanks to funds mobilised through the CBM group.

## 4.2. Sustainability of CBM practices

Sustainability in agricultural biodiversity projects is related to two basic aspects:

- farmers' ownership and knowledge on practical aspects for development and conservation of agricultural biodiversity and
- the organisational capacity of farmers groups to continue CBM practices in the long-run.

In order to assess the 'comparative value' of different CBM practices in different contexts, we conducted participatory ranking exercises in 5 locations : 3 in three agro-ecological zones of Nepal (Mustang, Doti and Dang), one in Bangladesh and one in Sri Lanka. The reason for not conducting this exercise in Andhra Pradesh is that Anthra focused on animal genetic resources. As to Karnataka, only a few CBM practices are currently implemented.

### Process :

1. We asked the group to list all CBM practices which they considered as significant.
2. Then, we identified a number of criteria for evaluating the pros and cons of various CBM practices from community members' perspective (between six and ten depending on time available for conducting the exercise).
3. We shared this list with participants, and asked them to add their own (which they did, in a

few cases).

- Then we prepared the matrix, identified a facilitator (local staff), explained the ranking method, and proceeded with the ranking (for each parameter, the practice ranked as 1 is the most significant, as 2 is slightly less significant, all the way up to 6 or 10).

For each parameter, we asked simple questions to participants, as follows :

- Benefits to the community : which CBM practices has benefitted you most, as a community ? Why ?
- Benefits to women : which CBM practices has benefited women most ? Why ?
- Benefit to poor households: for example : if a practice helps to reduce cultivation costs, and it increases access to food , then it is beneficial to poor HH.
- Level of participation : is there a large number of people involved in implementing this practice (and feeling a sense of ownership over it) ?
- Income-generation : which CBM practice is generating substantial income or helping to diversify livelihoods? (building financial capital)
- Increase in knowledge : which practice is most significantly developing the knowledge base of the community ? (building human capital)
- Basis for future development : to what extent can you build on this CBM practice for future community development ? (eg. : using material stored in seed bank to develop new varieties, growing medicinal plants in home gardens to reduced dependency on costly medicine)
- Sustainability of practice : which activity can most easily be sustained by the community *without* external support ? (i.e. which practice would continue if LI-BIRD withdrew support?)
- Contribution to biodiversity conservation : which practice most contributes to conserving biodiversity ?
- Climate change adaptation : which practice most contributes to adapting to climate change ?

Below are the results of the PRA exercises (Table 5 to 9). It should be noted that when doing such ranking, what is important is not so much the score as the rationale behind it. Hence, for each parameter, we asked why a given practice would come first, second, third and so on.

**Table 5. Participatory assessment of CBM practices in Ghanteshwor, Doti (Nepal)**

	Benefits to			Level of participation	Income-generation	Increase in knowledge	Basis for future development.	Sustainability of practice	Contribution to conservation	Climate change adaptation
	Com	Poor HH	Women							
CBR	3	6	6	1	7	1	2	6	2	3
Diversity block	6	7	7	4	6	4	7	7	4	4
CBM Fund	4	1	4	6	1	5	5	3	7	6
Community Seed Bank	1	2	2	2	3	2	1	1	1	2
Value addition	2	5	3	3	4	7	4	4	6	5
Home garden	5	3	1	5	2	3	3	2	3	1
Varietal enhancement	7	4	5	7	5	6	6	5	5	7

Key findings :

- Community Seed Bank is most significant in terms of overall benefits, contribution to conservation and sustainability.
- The CBM Fund is essential for poor households' livelihoods.
- Value addition (citrus) is beneficial because farmers can now sell their lemon at Rs. 8-9/kg instead of Rs. 2/kg earlier.
- Home garden has increased access to « many things : seeds, seedlings, saplings (fruit trees), equipment » and helps poor households to be self-sufficient. Also important for women's income.
- CBR is a strong base to increase knowledge on plants.
- Home garden comes first when it comes to adaptation to climate change because :« we can grow up to 200-300 species in the HG, all are local, adapted to local climate. The HG helps to protect from soil erosion, and to deal with new diseases and pests. If you plant garlic, ginger, coriander, you confuse insects and they will do less damage to plants ».

**Table 6. Participatory assessment of CBM practices in Rampur, Dang (Nepal)**

	Benefits to			Level of participation	Income-generation	Increase in knowledge	Basis for future development	Sustainability of practice	Value in conservation	Climate change adaptation
	Com	Poor HH	Women							
Community Seed Bank	1	3	3	1	2	3	1	1	1	1
CBM Fund	2	1	1	3	1	7	3	2	2	7
Value addition	3	2	2	4	3	6	2	4	8	8
CBR	5	6	6	2	8	1	6	8	7	6
Varietal enhancement	7	8	7	6	6	4	8	7	4	2
Home garden	6	7	4	5	4	5	4	5	3	3
Organic farming	4	5	5	7	5	2	5	3	5	4
AnGRC	8	4	8	8	7	8	7	6	6	5

AnGRC = Animal Genetic Resources Conservation

Key findings :

- CBM Fund is highly significant for poor HH and woman as « it enables poor people to start small enterprises ».
- Value addition is beneficial to women, poor HH, and the community at large : « We have replaced other factory products by local products. Our money is contributing to the local economy ».
- Community Seed Bank is given high value for the present and the future : « We want to make the seed available for all farmers ». « If we conserve existing diversity in Seed Bank, the future generation will learn how to improve it ». It is also seen as helpful to adapt to climate change because « it provides options for developing new varieties to adapt to changing rainfall patterns and climate change ».

**Table 7. Participatory assessment of CBM practices in Chhayo, Mustang (Nepal)**

	Benefits to community	Benefits to women	Level of participation	Income generation	Increase in knowledge	Sustainability of practice	Value in conservation	Climate change adaptation
Seed production and marketing	1	4	4	2	2	1	1	5
Home garden	3	1	1	4	4	3	3	3
Value addition	2	3	2	1	3	4	2	4
CBM Fund	4	2	3	3	1	2	4	1
Local poultry exchange	6	5	6	5	6	6	5	2
Varietal selection of barley	5	6	5	6	5	5	6	6

**Key findings :**

- There is no seed bank in Mustang, but seed production and marketing is equally important, for three main reasons :
  - a) « we don't have to go outside to buy seeds
  - b) we can earn from selling seeds
  - c) we produce quality seeds which are good for our fields ».
- Home garden gives some economic margin to manoeuvre to women : « If we need a small amount of money, we can earn it by selling some products from our home garden. And there's no need to spend money on vegetables when we have a home garden ! ».
- Value addition is significant in terms of income because group members prepare different kinds of produce : seabuckthorn juice, vinegar, potato chips, pickle and jam.
- CBM Fund increases farmers' knowledge because they discuss many things during monthly meetings. It is also valuable in adapting to climate change because farmers « mobilise the CBM Fund to acquire livestock and chicken, which are less affected by climate change than crops ».

**Table 8. Participatory assessment of CBM practices in Athungoda, Puttalam (Sri Lanka)**

	Level of participation	Increase in income	Increase in knowledge	Sustainability of practice	Contribution to conservation	Climate change adaptation
1. Seed bank	1	3	3	2	1	3
2. Home garden	7	1	1	1	2	1
3. Agro-well	4	3	8	8	5	2
4. CBR	2	8	1	5	3	2
5. Value addition	6	5	5	9	-	5
6. Handicraft	5	4	4	6	-	-
7. Diversity block	6	6	2	3	2	3
8. CBM Fund	3	7	7	7	-	-
9. Animal rearing	5	2	6	4	4	4

Key findings :

- Seed bank is what brings farmers together : « Everyone gives some seed to the seed bank – maybe only 10 grams, but everyone contributes something ».
- The home garden has benefits in terms of income (« everyone has a home garden and everyone sells from HG »), source of access to knowledge. It is also the most sustainable practice : « Now that we have knowledge and seed, we can do it on our own ». And it is useful in terms of climate change adaptation : «With the decline in rains, we have started growing plants in pots as this requires less water ».
- Value addition, handicraft, agro-wells and animal rearing are not seen as sustainable because they all require external financial support (handicraft : constructing a sales outlet).

**Table 9. Participatory assessment of CBM practices in Bantiar, Sirajgonj (Bangladesh)**

	Benefits to community	Benefits to women	Women's participation	Men's participation	Contribution to women's income	Contribution to men's income	Control of river-bank erosion	Conservation of biodiversity	Adaptation to climate change	Sustainability of practice
Seed Hut	1	1	1	1	2	2	2	1	1	1
Home Garden	3	2	2	3	1	1	3	3	3	2
Nursery	4	3	3	4	3	3	4	4	4	3
Bamboo-binding	2	4	4	2	4	4	1	2	2	4

Key findings :

- The seed hut is very beneficial to women for various reasons :
  - a) « Seed is in our hands (not men's) »
  - b) « Because of benefits from seed sales, we can send our kids to school »
  - c) « When we sell seeds of vegetables, we keep that money »
  - d) « There used to be a lot of conflicts between women and men when men started demanding seeds, and women could not provide seeds. Now that we have our own seeds again, conflict has declined ».
- Income : seed sales bring in substantial income, but they are limited in volumes and time, whereas sale of vegetables from the home garden is on-going through much of the year.
- Differences of opinion between women and men on the value of bamboo-binding : according to men, bamboo-binding is key to conservation of biodiversity (« Without land, how we can preserve biodiversity? »). Women find that the home garden is more significant (because it's their domain).
- The nursery is particularly useful to midwives and women healers in this community.

Overall, if we look at all four ranking exercises, three practices appear to be most sustainable (i.e. would be continued in the absence of external support) : the Community Seed Bank, the CBM Fund and the home garden. It is not surprising that seed banks should come in this category, as they play a pivotal role in preserving biodiversity and restoring farmer-led seed systems.

However, it is interesting to see that home gardens are of vital importance to women in all these three countries, which may be an explanation for the significance they are given in these ranking exercises. Maintaining – and perhaps increasing – support to home gardens in the context of CBM may need some consideration as an option for future development.

Varietal enhancement, value addition and CBR rank amongst the least sustainable practices. Diversity blocks are recognised as valuable in some sites (from an adaptation to climate change perspective, in Sri Lanka and Doti), and less in others. This means that these four practices may be dropped by groups in the medium-run, unless group members start appreciating their value.

### **4.3. Strengths and challenges in organising farmers**

This section presents some insights into the effectiveness of the organisational structure through which CBM is being implemented in all four countries. Some of the key questions investigated during the course of this evaluation included : membership rules, leadership, social cohesion (within groups), gender equity, levels of ownership of project among different categories of farmers, and legal status of groups. Due to lack of time, in-depth analysis of all these issues could not be carried out in every site. Some of the findings presented in this section may therefore require further research and probing in order to be fine-tuned.

Below is a brief description of the organisational structure of farmer groups used as the main channel for implementing CBM activities in each country, with a rapid analysis of the main strengths and weaknesses of these structures. This is followed by a summary of key insights gathered through focus group discussions and individual interviews about the benefits and challenges of organising farmers into groups.

#### ***4.3.1. Pros and cons of different organisational structures***

##### *Nepal*

In Nepal, every Village Development Committee (the equivalent of a municipality) is divided into 9 wards. CBM is being implemented through the Biodiversity Conservation and Development Committees (BCDC) located in each ward (9 per VDC in total). One Executive Committee, formed by members of the Ward-level BCDC, oversees the entire CBM process at VDC level.

Although slightly cumbersome as a structure, this institutional set-up seems to work relatively well because it ensures the participation of community members at every step of the programme. The principle of participation of all ethnic groups, with a focus on disadvantaged groups (including women) seems to be working well in practice, with only few exceptions. However, the relatively low number of women in Executive Committees is an issue of concern.

The relationship between Ward-level committees and Executive committees appears, by and large, to be open and transparent : ward-level members can propose ideas which get discussed by the Executive committee and, conversely, the Executive committee follows work going on in all 9 wards fairly closely. There are a few cases where the Village Development Committee has allocated funds to the BCDD, which is one of the rationales for opting for this structure. For instance, in Doti, VDC has begun allocated 25% of the budget for irrigation related activities run by the BCDC, and in Shivagunj, Jhapa district, Rs. 150.000 has been allocated for the construction of a community seed bank<sup>16</sup>.

Ownership by local government and other line agencies is crucial for the successful implementation of CBM activities. Their support increases effectiveness in planning, monitoring, resource mobilisation and decision-making around CBM.

<sup>16</sup> CBM-Nepal Project Progress Report, 2011, p. 29.

It should also be noted, on the theme of State actors' involvement, that the Department of Agriculture (DoA) has included the CBM approach in their training modules for its staff. LI-BIRD professionals have been invited as resource persons by the DoA, which is implementing CBM in one pilot site in each of the districts where LI-BIRD is implementing CBM.

### *Bangladesh*

The CBM programme is run in 12 sites located in 6 districts via farmers' groups formed under Naya Krishi Andolan with support from UBINIG. All CBM farmers are Naya Krishi Andolan farmers, and this is the source of some confusion as farmers for the most part identify themselves as Naya Krishi, and know little about CBM as a distinct project with specific objectives. This joint organisational structure for two distinct – though interrelated – programmes has pros and cons : on the one hand, CBM can build on existing awareness about organic practices, but on the other hand, the scope for implementing all CBM components is limited. For instance, Naya Krishi groups (and/or UBINIG) have not implemented the CBM Fund so far. Yet the CBM Fund is a valuable tool for linking conservation and livelihood improvement, and should be developed in consultation with communities.

### *India – Andhra Pradesh*

The CBM programme is operated through the *sanghams* created with Anthra's support in Andhra Pradesh. There are distinct men's *sanghams* and women's *sanghams* : men's *sanghams* are constituted of male shepherds (from the Kurma and Golla castes), and women's *sanghams* are composed of women from the same shepherd castes but also from other castes and socio-economic status, and include Dalit women. The two types of *sanghams* appear to complement each other well : the men deal with sheep-rearing issues, and address pastoral livelihood-related concerns (like the lack of fodder or water), and women's *sanghams* have been active on several fronts : creating awareness on the need to restore the Deccani breed in their communities, organising loans to buy black Deccani rams, promoting crop diversity, encouraging women to take up spinning again, creating a platform to discuss a range of social issues affecting women.

The main strength of the *sanghams* is that they are highly democratic, process-oriented, and can lead to interesting forms of empowerment (see Case study 5 below). One question is whether the shepherds can resolve all critical issues threatening their livelihood on their own, without the support and engagement of other castes/socio-economic groups in the village. Sooner or later, shepherds will need to coordinate their efforts with other farmers at village level (for the provision of fodder or water for instance), so the current *sanghams* may need to evolve into more inclusive collectives at some point (this is already happening in the case of women's *sanghams*). An additional small concern is that most women leaders of the women's *sanghams* are all relatively old, and few young women seem to be coming forward to pursue this work and take up leadership roles.

*Sanghams* are not registered as formal institutions, and the Anthra team feels that there is currently no need to do so as the *sanghams* have been able to achieve good results so far despite their lack of formal status. In fact, by remaining informal, the *sanghams* have been able to retain their independence and capacity to voice their own concerns. In India, many groups that formalise then get either affiliated to larger interest groups, or co-opted by political parties.



## *India – Karnataka*

The Green Foundation has been working with different groups of farmers and local partners, some of which have had some engagement with organic farming. In Gundennatti, Belgaum district, 10 farmers have been working under the Participatory Guarantee Scheme, a process whereby the farmer pledges that his/her production process is free from manufactured chemicals fertilizers, insecticides, herbicides, hormones and a local group of five or more organic farmers certifies him/her.

The process of selecting groups for implementing CBM activities appears quite *ad hoc* in the case of the Green Foundation: the organisation is willing to work with groups that express an interest and show some commitment to the issues of conservation of local agro-biodiversity and use of organic farming methods. The positive angle of this approach is that there is no necessity to constantly 'motivate' group members since they have come forward with a specific demand. However, they may not be ready to implement all CBM activities, and indeed, only few components of the CBM project can be found in the Green Foundation sites in Karnataka. Part of the reason for this is that local partners acting as intermediaries between the Green Foundation and farmers in two (out of three) districts are not skilled in the implementation of CBM, and have a tendency to merge CBM with their own agenda, which leads to sketchy outcomes.

## *Sri Lanka*

Some of the farmer groups involved in the CBM programme in Sri Lanka have been involved with the Green Movement prior to CBM, and some are newly formed. Some are women-only groups (Athungoda for instance) and some are mixed (Kantale). In both sites, we observed a very satisfactory level of group cohesion, and good representation of all age groups, which is also very encouraging. Groups are composed of farmers with different ethnic and religious background, and from different socio-economic categories. The Green Movement has provided support for the construction of agro-wells, and we found out that these benefited not only group members, but also non-group members who came to fetch drinking water, and were well-received. This is also a positive point. During group meetings in Kantale, we also learnt that the group was planning to voluntarily engage in village development by helping rebuild road and by organising an alms giving event in the village. It is noteworthy that this CBM group now feels an inclination to involve itself with community development at large.

Due to lack of time, we could not investigate whether or not CBM groups have started to build institutional linkages with other local or research institutions. This would be important to improve the visibility of CBM work, to link national campaigns led by GM with grassroot-level advocacy (on the need to support organic inputs or to restore traditional water-conservation structures, for instance), and to make CBM-related work more sustainable and far-reaching.

### ***4.3.2. Strengths and challenges of organising farmers into groups***

In all four countries, we examined issues of social cohesion, inclusiveness, gender equity and leadership as a means of assessing the effectiveness of the organisational structure through which CBM is being implemented.

#### **Social cohesion within groups**

« The most important thing we learnt is to work as a group » says a woman from the CBM group in Athungoda, Sri Lanka. Not only in Sri Lanka, but across all sites visited, there is clear evidence

that group activities have led to improved social cohesion at community level. In Shivagunj, Jhapa district (Nepal), both men and women farmers clearly stated that after the group was formed, caste-based discrimination gradually declined, and new forms of cooperation emerged between hill migrants and Adivasi communities (Case study 4).

**Case study 4 : Forming groups helps to overcome caste discrimination and build social support :**

The example of the CBM group in Nipatriya Hamlet (ward 2), Shivagunj, Jhapa district (Nepal)

« We were isolated : hill migrants on the one side, and Adivasis on the other. We were not integrated, it was a form of discrimination. Now we are together, we are like brothers and sisters, like one family » (a male group member).

« I never used to eat with Dalits and Adivasis. During group meetings, people would sit separately : Madheshi (indigenous, long back migrated from India), Adivasi, hill migrants. All this has changed now because of this CBM project. We have learnt to work together » (a Brahmin Chhetri female group member)

« In our group, we have made a provision to ensure that if someone dies in a family, the group will allocate funds to buy fruit and all members go to the funeral taking fruit. Earlier, Adivasi would go to Adivasi funerals, hill migrants would go to hill migrants funeral » (a male group member).

« The most significant change that has come about as a result of this project is change in interactions between Adivasi and hill migrants relating to food, labour, greetings, seed. Adivasi farmers used to feel that if they give seeds to hill migrants, their own production would decline through seed deterioration. Now exchange of seeds takes place freely amongst all community members » (a male group leader).

## **Inclusiveness**

We found most groups to be quite inclusive, with a fairly high representation of poor and vulnerable households. It is difficult, in such a short research process, to truly evaluate whether the most marginal households have received sufficient benefits, compared to other households. However, on many occasions, members of economically disadvantaged households proved to us that they felt a sense of belonging to the group. The same applies to women-headed households.

## **Community empowerment**

Empowerment takes many forms, and is not easy to grasp. It has been defined as a “multi-dimensional social process that helps people gain control over their own lives”, or as “the process through which those who are currently disadvantaged achieve equal rights, resources and power”<sup>17</sup>. The following definition is also worth noting in the context of CBM : “the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control and hold accountable institutions that affect their lives”<sup>18</sup>.

The farmer groups have been empowered in various ways, to varying degrees, with variations within groups. In Sri Lanka, Nepal, Bangladesh, women have turned their home gardens into micro-entreprises, thus earning a livelihood and getting economically empowered. Marginalised groups (Dalits) have become empowered to take a more active role in biodiversity conservation in their communities. In Andhra Pradesh, we came across what was, for me, the most compelling form of empowerment based on the third definition above, which it illustrates well (Case study 5).

<sup>17</sup> Quoted in Jupp, D., S. Ibn Ali and C. Barahona, 2010, Measuring Empowerment ? Ask them, SIDA Studies in Evaluation, Sweden.

<sup>18</sup> World Bank Sourcebook on Empowerment, 2002.

### Case study 5. (Re)claiming rights over trees : How a shepherd *sangham* tilted the Gram Panchayat's decision to auction acacia trees (Andhra Pradesh, India)

#### Interview with Balayya, one of the *sangham* leaders (around 35 years old) :

- In 2007, the Gram Panchayat<sup>19</sup> issued a tender and sold some acacia trees for 27.000 Rs. The shepherd community was unhappy with this decision, but could not oppose it.
- In 2010, the *Mekala Gorrela Pempakadharla Sangham* (village-level organisation of pastoralists) was formed and became active at community level (with ANTHRA's support). They shared awareness about Government Order 566, stating that in villages where shepherds are present, « at least 5 acres of common land with all trees must be allocated for shepherds ». Acacia trees are important fodder trees for sheep and goat.
- In 2011, the Gram Panchayat announced that it was going to auction acacia trees once again. It transferred authority to the water-user association to sell the trees. Tree-cutting began on the tank bund.
- Members of the pastoralists *sangham* approached the water-users association and said « Stop cutting the trees inside the tank : we have some right to these trees », referring to the Government Order.
- There was a conflict over this issue for three days in the village, and ultimately, the shepherds obtained what they fought for : the acacia trees were saved.
- Since then, the *sangham* – especially the youth – have been able to secure other demands from the Gram Panchayat : the construction of a daycare centre, the preservation of Ellama Pochamma temples (one of the local deities) threatened with destruction.
- They have driven the Gram Panchayat to pass the following resolution : « Anyone who cuts down a tree will have to pay a fine of 500 Rs ». Currently, they are in the process of negotiating with a field assistant from Government of India to include the plantation of acacia trees on common land as one of the activities under the National Employment Guarantee Scheme (NEGS).

The success of the *sanghams* in questioning decisions made by local institutions is linked to Anthra's long-standing experience of 'working with people' : the organisation has been working with local people to revive pastoralist livelihoods for 15 years. But it is also linked to the fact that Anthra largely acts as a *facilitator of change*, focusing on nurturing processes of change, *rather than proposing a series of activities*, with clear objectives, methods and pre-set outcomes. CBM can embrace both approaches, but field staff sometimes lack the vision which Anthra has been able to develop over the years, or have not been trained to facilitate change. Perhaps more could be done along those lines so that CBM releases its full potential in terms of community empowerment.

### Gender equity

What is perhaps most striking about CBMSA when it comes to gender is the impressive proportion of women involved in grassroots-level groups. In Nepal, 45% of CBM group members are women<sup>20</sup>. Yet in many ward-level groups, women outnumber men. The same is true in Sri Lanka. In Karnataka and Bangladesh, women are also present, but perhaps less vocal (due to cultural gender norms limiting women's mobility, education and self-confidence). Thus, overall, the participation of women does not come under question.

What is still lacking, perhaps – and this is linked to organisational culture – is giving sufficient credit and visibility to these women. In Karnataka, male farmers appeared to be more comfortable to speak up than women which could mean that GF needs to make more efforts in supporting women's participation<sup>21</sup>. In Nepal, by and large, women's contributions to CBM are valued. We did note,

<sup>19</sup> The Gram Panchayat is the Village-level governing assembly in India.

<sup>20</sup> CBM-Nepal 2011 Project Progress Report

<sup>21</sup> The Green Foundation has just secured a Grant from Women Earth Alliance for a project to strengthen the capacity of women farmers in Karnataka. The idea is to create, over the next two years, a network of 40 women community-

however, that the poultry farm (under Animal Genetic Resources) in Rampur was presented as the husband's achievement, whereas in fact, he himself admitted that his wife was doing most of the work !

Local staff (especially field coordinators and mobilisers) play a key role in helping groups to form and can influence internal group dynamics. Hence it is essential to have sufficient women staff, which is not the case with LI-BIRD, nor with the Green Movement, nor with the Green Foundation, nor with UBINIG. In short, Anthra is the only CBM partner that has a strong female presence at organisational level, and this certainly has a bearing on group-level dynamics.

Despite these shortcomings, it is clear that benefits from CBM have equally benefited women and men. In fact, we came across many women who found that becoming group members helped them overcome gender barriers and acquire more mobility, gain confidence and self-esteem. In Jhapa, one woman eloquently expressed what she has gain from taking part in a CBM group : « I did not have the courage to leave my home earlier. Now I feel that I too can do outside activities. I can even travel a bit further from home. I even go and sell vegetables in the market. Yes, now I can earn for myself, I am not dependent on the money my husband sends ».

### **Women's leadership**

Leadership structures vary from one country to another, and from one site to another. In Nepal, the Executive Committees assume formal leadership, meet regularly, make decisions, etc. There seems to be good levels of transparency and accountability overall. This leadership to be working well in terms of taking activities forward, but we identified two issues of concerns.

First, there seems to be limited turnover at the executive level, which limits opportunities for 'ordinary farmers' to gain skills as leaders. Rotational leadership may be encouraged as a means of getting more people acquainted with decision-making processes, and higher levels of empowerment as a result (even though, admittedly, not everyone makes a good secretary, treasurer or chairperson...).

Secondly, the number of women in Executive Committees is quite limited in some groups<sup>22</sup>. In Doti, for instance, there are 7 men and 2 women in the EC, and one of these women only rarely attends meetings. When we inquired about the reason for low participation of women at executive level, several reasons were listed : social norms, workload, time constraints (evening meetings) and also, in the case of Doti, long distance to be travelled by foot in order to reach the meeting place (at ward level, on a rotational basis, which seems highly sensible). We were also told that it is easier for women to attend ward-level meetings. So it would important to give women an opportunity to exercise leadership at ward-level as a first step towards more gender equitable leadership.

In Mustang, we asked the chairwoman « What more could LI-BIRD do to improve women's status ? », and she replied :

1. « The group should offer leadership position to women (secretary, treasurer, vice-chairperson) so that they feel responsibility and develop their capacity. Both at ward-level and EC level.
2. LI-BIRD should provide training to help women take part in activities, to come up with their own ideas, to speak up. If we do this, that might help women ».

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resource person highly skilled in organic farming, Panchayat Raj institutions, environmental issues, banking. A similar project with the Government of India aims to train 200 women farmers in the State of Karnataka.

<sup>22</sup> Expect in Mustang, where the Executive Committee is composed of 10 women and 4 men.

#### **4.4. Functionality and effectiveness of the regional coordination**

The CBM-South Asia programme is being run through a fairly complex structure, with LI-BIRD playing a central coordinating role, and acting as a pivotal point between the Development Fund on the one hand, and other South Asia partners on the other. Amongst CBM partners, there is another 'layer' of actors, as in some cases, the CBM programme is implemented by a local NGO, and not directly by the CBM partner.

At country level, in most sites (except for Karnataka), field coordinators are stationed at community-level and work closely with farmer groups. This structure seems to be ideal in terms of the implementation of CBM activities as field coordinators follow activities on a day-to-basis, and have a good understanding of the groups' internal dynamics (ward-level groups and CBM committees). The skills field coordinators possess vary (some are strong on social issues, other on technical issues, and others on community empowerment) and so does their in-depth understanding of agricultural diversity conservation issues. By and large, field coordinators are sensitive to gender and to marginalised groups, and have a good rapport with community members. It would be good to increase the number of women coordinators.

At group level, identifying key resource farmers, and farmers – men and women – with a capacity to analyze situation, and mobilise people, is very critical. We have found that the quality of the Chairperson is quite essential in determining the group's dynamics. The Executive Committee chairman in Doti and chairwoman in Mustang both show high levels of moral integrity and dedication to the work, and have been able to achieve good levels of group cohesion.

Exposure visits have been valuable in terms of getting groups aware of the potential of CBM, and motivating farmers to start activities in their own communities. In general, 'farmers speaking to farmers' is perhaps the most effective strategy for spreading awareness and concerns over agricultural diversity, and should be made use of extensively.

At the regional level, partners seem satisfied, overall, about the working principles of the network, and have found annual review and planning meetings especially useful in terms of sharing ideas and learning, pooling resources from different organisations, and jointly designing a strategy to take CBM forward. Some partners would be keen to have more regular opportunities sharing and feedback, which should happen in the near future (with the creation of a dedicated website for posting findings and concerns). In Sri Lanka, the management team finds that the full potential of the South Asia Network is yet to be realised : each partner still tends to work in isolation, which severely limits the impact of the overall programme (both in terms of CBM practices and at advocacy level, nationally or regionally).

Our meetings with farmers in all countries, with CBM staff at all level, from field 'mobilisers' and volunteers to managers, has enabled us to identify the strengths of the programme (illustrated above), but also a few major issues that need resolving, as outlined below.

##### **4.4.1. Programme coherence**

- One key finding from this evaluation is that the programme is not applied uniformly across sites and countries. This is partly due to the differences in competencies and personalities of field coordinators. But also to a certain lack of methodological clarity on the part of some partners. While it is almost impossible to apply standardised rules for running a diversity block or a genebank across sites that are vastly different from a socio-cultural and economic

point of view, there should still be some overall coherence in the activities.

- « This is great... but can we really call it CBM ? ». This summarises the impression one comes away with after visiting some of the sites in CBMSA, especially in Bangladesh and Karnataka, where much focus is placed on the community seed bank, home garden and on organic farming, but other components like the CBM Fund and CBR have not been developed.
- In Bangladesh and Sri Lanka, the CBM programme managers explained that they had received support from plant breeders and agricultural scientists earlier, but that these partnerships came to an end, and had not been replaced, leaving a gap in their capacity to fully implement varietal enhancement or participatory plant breeding.

#### ***4.4.2. Variations in how partners integrate CBM into their broader agenda***

- South Asia partners have, for the most part, taken up CBM to consolidate some aspect of their work and to synergise with other actors at regional level. And all have a wider agenda of their own, in addition to CBM. We found this to be both a weakness and a strength. A strength because they build on their extensive grassroot-level experience, which often tends to reinforce their CBM work. A weakness because they tend to implement the CBM components that 'fit well' within their larger agenda, leaving out other dimensions.
- In Bangladesh and Karnataka, for instance, the farmer groups do engage in Community Seed Banks, varietal enhancement to some extent, vibrant home gardens, but there is no CBM Fund and no diversity block. Yet both partners have proved to be innovative in terms of farmer-centered seed production systems and the promotion of organic farming, and UBINIG has supported a community in responding to the immense challenge faced by rural communities throughout the country : loss of land due to river-bank erosion.

#### ***4.4.3. Limitation of trainings***

- The important focus placed on training calls for questions. Training may be an important step to get the programme going, initially, but there seems to be an excessive use of trainings in Bangladesh, Karnataka and Sri Lanka (as revealed by the CBM-SA Annual Report 2011).
- There is a problematic assumption that trainings 'magically' lead to the adoption of the new practices by farmers, and to outcomes such as 'increase in the income of farming families from biodiversity-based products. The reality is more complex. A training for women on preservation techniques for food items says nothing about women's capacity to actually sell more pickles, to identify buyers, use the income effectively (who controls the income?). We came across many examples showing, in fact, that farmers could not adopt a given practice (bee-keeping, making compost, raising chicken) even after attending a training.
- Moreover, trainings may also hamper more organic processes of change, where farmers can do their own analysis, and start designing solutions with support from CBM partners.

#### ***4.4.4. Monitoring mechanisms***

- The monitoring process for CBM appears to have some inherent weaknesses, which are best illustrated through specific examples :
  - During the FGD in Rampur, Dang, we learnt that the group in Ward no.8 was responsible for maintaining a diversity block with 12 chilli varieties. After a few years, the group

discontinued this block. When we asked why, they told us that 34 people had taken seeds from diversity block to grow chilly in their home garden, and they said they lacked time to work collectively. Yet there is no guarantee that five years down the line, all 14 varieties of chilli will still be present in the village !

- In Rampur as well, we were told that the Executive Committee divided up the responsibility of conserving local varieties for 5 major crops (cowpea, bottlegourd, eggplant, taro and rice) amongst ward-level groups. But we also found out that in ward 9, dedicated to taro, the entire conservation effort for taro relied on one woman only, which is not ideal from a conservation perspective. The existing monitoring system does not seem to provide space and scope for identifying and addressing such inconsistencies.
- In Bangladesh, the Participatory Varietal Selection (PVS) is being run in four sites (Tangail, Chapai, Pabna, Cox's Bazar). In each site, farmers are conducting trials on the same nine *Aus* rice varieties. We conducted an FGD with selected farmers in Adazan, Tangail, and we were baffled by the level of confusion that emerged. We could not get any clarity on the actual number of farmers conducting baby trials and mother trials at village level, nor get a detailed account of the process for conducting trials : when do farmers meet to share impressions, how frequently is data recorded, how the group decides on whose land to grow which variety, and so on. This lack of clarity was quite concerning, and shows that the monitoring system in place to record the process and outcome of participatory varietal selection in this village need to be reinforced.
- In the light of these examples, it seems important for the regional coordination to revise the monitoring system in order to make it more effective.

#### **4.4.5. Overall management**

- As stated above, country partners seem satisfied, overall, with the regional coordination system. All mentioned that the decreased budget for 2012 would be a challenge, since CBM is quite an extensive programme, and it can not be properly run with a very limited budget. This means that choices will have to be made, and priorities set.
- Some minor issues were raised :
  1. LI-BIRD sometimes expects to receive information or documents at short notice, which is a challenge for the Green Foundation since its sites are quite spread out geographically.
  2. The joint planning and review meetings are an opportunity to share on a yearly basis, but one of the advisers of the Green Movement feels that what is missing is a platform where partners can discuss, raise issues they are facing 'at home', express dilemmas and concerns, ask questions, share methods or results. This is currently being addressed by LI-BIRD, and it will be important to see whether the proposed format meets people's expectations.
- LI-BIRD has been playing a proactive role in designing and implementing CBM in Nepal, and throughout South Asia via country partners, more recently. LI-BIRD's technical and research expertise are widely recognised and acknowledged, and attested by its numerous publications. As CBM expands into new sites and territories, it may be useful to give more visibility to the programme as a whole by coordinating case studies across South Asia.

## 5. Conclusions

Several important points emerge from this evaluation process. In this concluding section, we propose to briefly examine CBM in its capacity to address major challenges.

### *Improved livelihoods*

In Nepal, what clearly stands out from this short research piece is that CBM does strike a balance, by and large, between conservation and livelihood improvement. There are many compelling examples of how people have been able to improve their livelihood, and sometimes even to come out of poverty, after being part of the CBM programme : migration to foreign land has stopped in some households, some women-headed households have been able to conquer their financial autonomy (with positive outcomes in terms of self-esteem), vulnerable families have seen real improvements in their life on a day-to-day basis. These outcomes are the result of combined approaches which, together, reinforce the social fabric in rural communities, thus reducing vulnerability and exclusion.

In the other three countries, this dimension is less striking, partly because the project is still very recent (only 2 years), but also because the potential of CBM Fund in improving livelihoods has perhaps been underestimated until now.

### *Addressing changes in agriculture*

We should not forget that farmers across the world are up against dramatic trends of change, driven by trade liberalisation and food and agricultural policies. Increasing commercialisation, rising costs of production, environmental degradation are some of the manifestations of agrarian changes at work. When assessing CBM, therefore, we also need to consider the capacity for CBM to help farmers adapt to these changes. One positive example in that direction comes from Sri Lanka : after developing their home gardens using organic methods, farmers of Kantale gained confidence and realised that costs of cultivation had been lowered with these new techniques, and they started applying them to their farming system as a whole. In Athungoda, small farmers are increasingly growing *katuel battu*, a dryland medicinal plant they sell to a pharmaceutical company, under a contractual arrangement. The CBM group should help them monitor opportunities and risks associated with commercial crops, so that farmers do not end up preserving local crop varieties on the one hand, and getting into debt as a result of growing commercial crops on the other.

### *Linking agro-biodiversity with organic farming*

Whether we consider agro-biodiversity conservation, climate change adaptation, or ecological sustainability, organic farming appears to be part of the larger solution for smallholders, in South Asia and elsewhere. From that point of view, it is a good thing that some of the country partners are already making concerted efforts to support farmers who have shifted to organic farming, and to promote this trend. In the Terai region of Nepal, we realised that agro-biodiversity conservation alone is not sufficient to resolve the main challenges and contradictions farmers are facing in the plains. In the mid-hill and Himalayan regions, farmers have been somewhat protected by their environment, and commercial seeds and chemical fertilisers are still not very common. But in the Terai area, policies support the ever-increasing adoption of chemical inputs and hybrid seeds. And yet farmers in Bara realise that these practices are killing their soil, their environment, and affecting their health. Through ten years of experience with CBM, the Bara group has understood the importance of preserving local varieties and of becoming self-sufficient in seeds, for their own benefits. But they are finding it difficult to decrease their dependency on external inputs, and CBM does not directly help them in addressing this.



Another huge related challenge (one which Farhad Mazhar from UBINIG conceptualises very well) is to support the emergence of alternative seed systems, i.e. to help farmers produce seeds on a large scale in order to provide an alternative to commercial seeds. We have seen that through CBM, many farmers are engaging, with or without support, in seed production and marketing (often as a means of livelihood). What is perhaps lacking in CBM as it currently stands is a strategy to develop alternative farmer-led seed systems on a large-scale, which can progressively compete with commercial seed channels.

## 6. Recommendations

We propose a range of approaches and concrete steps to begin to address some of the points and challenges raised throughout this report. Three sets of recommendations are proposed below, making specific suggestions to:

1. improve and streamline CBM practices at country level.
2. enhance the effectiveness of organisation and coordination at regional level
3. incorporate cross-cutting themes such gender equity, organisational development and strategic coordination into the programme

### 6.1. CBM Practices: Country-wise recommendations

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Bangladesh UBINIG	<ul style="list-style-type: none"><li>• Systematise Participatory Varietal Selection work in terms of farmers' engagement, methods, records, analysis of results and follow-up steps. Also systematize monitoring mechanism for PVS</li><li>• Develop institutional partnerships for PVS and PPB</li><li>• Develop some of the missing components of CBM (Diversity Fairs, CBR, CBM Fund, see <i>Good Practices</i> document) to strengthen existing practices (CSB, nurseries, PVS, home gardens)</li><li>• Introduce CBM Fund to increase communities' capacity to mobilise funds autonomously for conservation and livelihood (for bamboo-binding work, for instance, which is currently entirely dependent on external funding)</li><li>• Scale-up the work on animal genetic resources: currently, only a few farmers have purchased Patti cow under CBM – this needs some scaling up. Also, in Sirajgonj, farmers expressed the need to have a breeding bull from a local breed in their community (which could be acquired using the CBM Fund)</li><li>• Support local farmers' groups that are developing seed production and marketing activities, ensuring gender-equitable outcomes (eg. support <b>women's entrepreneurship in seed production and marketing</b>)</li><li>• Adopt <b>more transparent monitoring and reporting methods</b>, reflecting the strengths <i>and</i> weaknesses or inconsistencies of the CBM programme</li><li>• Conduct a <b>critical assessment of the economic sustainability of the Community Seed Wealth Centre</b> (external evaluator) and if the model is not viable, consider options for strengthening it (more involvement of farmers, getting funding support from national institutions, reduce the number of accessions to a more manageable number, etc).</li><li>• Progressively increase the number of women staff in the organisation, at field, technical and executive levels</li></ul>
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India GREEN FOUNDATION	<ul style="list-style-type: none"> <li>• Adopt a more systematic approach for Community Seed Bank and provide technical support to groups in terms of management of varietal diversity, seed collection, distribution of seeds amongst members for conservation, maintaining seed registers, and so on (see table x below)</li> <li>• Systematise Participatory Varietal Selection: develop a sound methodology (with LI-BIRD's technical support)</li> <li>• Diversify capacity-building options (GF's partners currently rely too much on trainings on various agro-ecological practices)</li> <li>• Do a critical assessment of partners' capacity to deliver on CBM and consider doing a <b>direct implementation</b> of CBM in less diverse geographical areas (which would be more manageable and perhaps more cost-effective)</li> <li>• Document more systematically the very interesting participatory processes developed for raising awareness on biodiversity and seed autonomy (Seed Fairs, public meetings, networking with other actors, creating a pool of local stakeholders and supporters of agro-biodiversity, influencing Government, etc)</li> </ul>
India ANTHRA	<ul style="list-style-type: none"> <li>• Introduce CBM Fund to increase communities' capacity to mobilise funds autonomously for conservation and livelihood (especially for buying Deccani rams)</li> <li>• Support shepherds' <i>sangam</i> in addressing critical livelihood constraints such as fodder scarcity and decreasing access to pastures. Encourage them to think 'outside the box' by envisioning complementarities between the pastoralist system and the farming system at large (eg. crop residues as an alternative to fodder, generalisation of tree-planting activities, rehabilitation of tanks, all of which are being adopted in some communities).</li> <li>• Strengthen the 'inter-generational knowledge transfer' component of the work (both in terms of animal and plant resources)</li> <li>• Introduce women's <i>sanghams</i> and their nascent work on conservation of local crop diversity to the Community Seed Banks run by women's <i>sanghams</i> in others parts of Andhra Pradesh (Deccan Development Society, Millet Network) to create momentum in terms of crop diversity conservation initiatives.</li> </ul>
Nepal LI-BIRD	<ul style="list-style-type: none"> <li>• Closer monitoring of diversity block: how is DB managed at community level? Who makes decisions? Based on which parameters? How to increase community engagement with Diversity Blocks (make it a collective rather an individual conservation model)?</li> <li>• Do a critical evaluation of the value addition initiatives (case-by-case) and assess what type of support is needed from LI-BIRD to make these initiatives more collective, self-sustained and profitable (this has to be done in a participatory manner).</li> <li>• Develop a monitoring mechanism (for all partners) to mitigate the risk that CBM Fund may be used for household expenses or not properly linked to conservation activities by a) specifying types of activities that can be undertaken under CBM Fund, b) setting up an internal monitoring process whereby group members review, on a regular basis, how the loans are used, by whom, for what, and c) reviewing, regularly, whether fund users are meeting their conservation obligations (using local breeds,</li> </ul>

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growing local varieties for conservation purposes...).

- PPB: Support existing groups in the transition to becoming entirely autonomous (which is already partly the case), so that LI-BIRD can focus attention on new groups. Continue diversification of PPB programmes into crops other than rice (as is happening in Doti).
- Explore the possibility of **more collective initiatives** (as opposed to individual ones) around critical CBM practices like home garden enhancement (eg. vermicompost, nurseries) and animal genetic resources (poultry farming done by collectives of vulnerable women for example).
- Multiply farmers' exchanges and farm visits as a method for capacity-building and strengthening local groups (as an alternative to trainings)
- Have a more **committed policy on Gender equity**: eg. 40% women in all leadership positions, at all levels (and technical/logistical support to groups in order to achieve this target within 2 years). Design this as a participatory process of change (rather than as a top-down decision) by involving men and women in the assessment of local gender barriers and in the design of culturally-appropriate solutions.
- Implement **rotational leadership in ward-level** and VDC-level groups so that more people can get an opportunity to exercise leadership at local, to acquire new skills and to play steering roles.

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- Assist farmers' groups in **identifying key activities** to be strengthened under CBM (instead of trying to develop too many activities). More focus should be placed on most 'mature' activities (CSB, PVS, home gardens, CBR) and less on least 'mature' ones (handicraft)
  - Carefully **evaluate value addition initiatives** (case-by-case) and focus on the ones that are most promising (based on range of criteria like: number of women involved, easy access to raw material, seasonal vs. year-round, good level of skills, interest expressed by young people to assist in securing markets). Assess what type of support is needed from GM to make these initiatives viable and profitable
  - Do a critical assessment of the long-term sustainability of agro-wells and the relevance of agro-well development as a CBM practice
  - Place more emphasis on alternative approaches such as soil and water conservation that have been identified for Athungoda and Ulukkulama sites and the adoption of cropping patterns more suited to dryland conditions that are also currently being promoted by field staff
  - Introduce an Animal Genetic Resources component in the programme as most farming families rely on animals. There may be a need to work with farmers and Government organizations on promoting local breeds, enhancing the productivity of local cattle and goat breeds, and better understanding the value of local animal breeds in adaptation to climate change
  - Bring in young people in the PVS/PPB work
  - Assess whether the focus on rice under PVS/PPB is viable given the fact that water for irrigation is an issue in many parts of the country. Place more emphasis on PPB and PVS for millets and legumes (already under way).
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## 6.2. Organisation and coordination (LI-BIRD)

LI-BIRD needs to resolve a number of critical issues outlined above, including: programme coherence; a general tendency, at regional level, to 'pick and choose' from CBM, leaving out some important CBM components; and inconsistency and lack of rigour in monitoring mechanisms.

The regional coordination needs to revisit the monitoring system, and to reinforce local staff's capacity to 'ask the right questions' and be more rigorous about reporting what is going on at ground level – both successes *and* inconsistencies or challenges encountered. The principles of 'truthful evaluation' may also need to be reinstated at regional level.

It may be useful for LI-BIRD and its partners, at this stage, to develop methods for better monitoring the work conducted at field level in all sites. The idea is that with more comprehensive and regular feedback from field workers on how CBM practices are being implemented, LI-BIRD and its partners would be able to increase responsiveness and programme coherence.

Below is an example of a proposed tool for monitoring the progress and challenges of community seed bank. Similar tools could be developed for other CBM practices.

**Table 10. Proposed tool for monitoring community seed bank**

Material stored	Number of accessions <i>(give details per crops and per variety)</i> Process for increasing the number of accessions in the Seed Bank <i>(conserving additional traditional varieties)</i> ? How is the material renewed ? Number of people involved in renewing material <i>(farmers, staff, others)</i>
Seed Register	What is the processings for recording information on local varieties ? Approximate area on which saved varieties are grown <i>(record area for each farmer)</i> What type of information is recorded ? What type of information is missing (and should be recorded) ?
Services offered by the bank	Seed saving (at which level) ? Support for home garden development ? Seed production and marketing <i>(which services are provided/missing?)</i> Seed storage in case of natural disaster/crop losses ? Exchange with other village seed banks ? Access to a Master Seed Bank or national genebank ?
Link with CBM Fund	Which varieties are distributed/conserved through CBM Fund ? Is there an effective mechanism linking CBM Fund and CSB ? How could it be improved ?
Management of the Seed Bank	Is there a Seed committee ? (number of men and women on the committee) How is membership defined ? What categories of farmers are present/absent from the committee ? How are decisions made ? What kind of support is the Seed Bank receiving (technical, logistic, management) ? Is any type of support missing ?

LI-BIRD also needs to re-emphasize the value of CBM as a *comprehensive* method for strengthening communities' capacity to manage and conserve and benefit from biodiversity. Hence, it should make it clear to partners that:

a) activities lying beyond this scope can not be an integral part of CBM (and hence can not be funded through this particular programme)

b) CBM hinges on a number of critical components aiming at mobilising human, natural, social and financial capital to increase livelihood opportunities from biodiversity, and if key components are missing, then the entire concept is jeopardised.

Where key components have not been developed, like the CBM Fund in Karnataka and Bangladesh,

LI-BIRD needs to assess reasons why partner countries so far, and provide technical support to partners for setting up CBM Fund at farmers group level.

In addition, LI-BIRD may need to play a greater role in articulating the work of various partners at regional level, especially where there is common interest. For instance, Anthra, the Green Movement and the Green Foundation are all working (at least in some sites), in dryland environments, and have all understood the value of millets as an alternative to rice-based, water-intensive cropping systems, especially in the context of climate change and increasingly erratic weather patterns. LI-BIRD could facilitate collaboration on agrobiodiversity conservation in dryland contexts (sharing methods for varietal enhancement or participatory plant breeding in millets, improving crop-animal integration which is critical in dry agro-ecosystems, scaling up the conservation of local breeds).

It would also be good for LI-BIRD to play a **steering and advisory role** at CBM-SA level in the following **key areas**:

### *1. Development of alternative seed systems under CBM*

In consultation with partners, and drawing from the positive experience of CBM-SA partners, like PGS in Karnataka, Network of Seed Huts run by UBINIG, LI-BIRD needs to coordinate a strategy for strengthening local seed systems in all four South Asia countries:

- build farmers' capacity on seed production, national seed regulations and management of community seed bank (as is done by LI-BIRD under CBM-Nepal)
- support local initiatives in seed production and marketing
- develop certification system that 'works for small and marginal farmers'
- provide support to groups willing to go one step further in terms of marketing (learn from positive examples)
- ensure gender equity in this domain and support women's entrepreneurship in seed production and marketing (as seed is traditionally a female domain in South Asia)
- identify 'safe spaces' within the legislation for developing farmer-centered seed systems (based on the exchange *and* sale of seeds) at national and regional levels.

### *2. Scaling up work on Animal Genetic Resources as part of CBM*

Given the importance of cattle, small ruminants and poultry in farmers' livelihoods in all four countries, LI-BIRD should take the lead in a concerted effort to scale up work around animal genetic resources, which is quite sporadic at the moment in CBM (except in Anthra) by:

- relying on Anthra's technical expertise (a workshop is organised by Anthra with partners in October 2012 to share on the AnGR approach, which is one good step in this direction).

LI-BIRD also asked Anthra to prepare a manual for the conservation of AnGR which can readily be shared within the CBM network

- ensuring that when farmers take loans through the CBM Fund for purchasing animals, they acquire local breeds (especially rare breeds)
- providing support (logistical, technical, financial...) for the acquisition of males (rams, bulls, cocks) of local breeds to ensure the preservation of local breeds (artificial insemination is normally not done with males from local breeds)
- supporting individual farmers or shepherds who may have a keen interest in preserving local breeds (buffaloes, cows, pigs, goats, poultry...).

### *3. Climate change adaptation*

Agro-biodiversity is one of the key assets in climate change adaptation. This reality is well-understood by farmers, and reflected in Development Fund's Programme ABC (Agricultural Biodiversity and Climate Change). Thus, it would be logical for LI-BIRD to begin coordinating work on this at the regional level by:

- listing existing CBM practices that already play a role in climate change adaptation (eg. bamboo-binding and Patti cow in Bangladesh, home gardens, PPB, CBM Fund) and developing a a Climate change adaptation analysis of these practices (evidence-based)
- organising a consultation with partners (and farmer representatives, mixed-sex) to generate new ideas based on farmers' assessment of how climate change is affecting their livelihoods, to analyze threats and risks with potential impact on agro-biodiversity (erratic rainfall patterns, drought, water-intensive commercial crops, etc)
- identifying partner organisations working on climate change in each country (scientific organisations, civil society organisations, development banks, etc) and at the regional level
- increasing the budget allocation for CBM practices that increase climate change adaptation
- starting advocacy work at regional level on the linkages between agro-biodiversity and climate change.

### *6.3. Cross-cutting themes*

#### *Building gender equity into CBM-SA at all levels*

1. Encourage the participation of women at all levels, including decision-making and leadership – a long way to go still in most project sites, and at organisational level. Give women a chance to exercise leadership at ward level (Nepal). Introduce rotational leadership wherever possible, including in Executive committees.
2. Conduct more research and analysis on the role of women in the management of agro-biodiversity and neglected and under-utilised species. Collect gender-dissaggregated data more systematically. Develop a better understanding of how women farmers are affected by food, agricultural and seed policies, what special knowledge women have about certain crops, what is their agenda in crop diversity. Give equal weight/recognition to women when a couple is working together (poultry farm in Rampur).
3. Be more attentive to the current trend of « feminisation of agriculture » : do an estimate of the proportion of women-headed households at community level and ensure they are well-represented in all groups. If not, facilitate their inclusion in groups. Strengthen women farmers' capacity to adapt to climate change and to influence decisions.
4. When addressing gender, try to go beyond cultural norms stating that 'women are shy', or 'it's not proper for a woman to be a leader'... Many projects have shown that women's role in the

community, and women's capacity to make decisions can change drastically in a few years if they receive adequate support in terms of building confidence, getting opportunities to play leadership roles and so on.

### ***Organisational development***

Strengthen farmers' organisations through participation, leadership and partnerships :

1. Review group rules and regulations (rotational leadership for all members including women to build leadership capacity)
2. Build capacity of all members (financial management, assertiveness, leadership....) through exchange visits, trainings (but not only trainings). Develop the group's analytical capacity and negotiating power
3. Make regular use of participatory tools (SAS, Outcome mapping, Reflect) to identify most vulnerable households in the community, set priorities, question decisions made by local institutions, to investigate gender or ethnic relations relating to agro-biodiversity management
4. Develop internal group capacity for evaluation and monitoring, by posing and answering simple questions like : Who benefited from this training ? What stops people from implementing the knowledge gained ? How do we select the best candidates to attend a training ?
5. Create partnerships with key stakeholders at institutional level as a platform for mutual learning