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REGINE ANDERSEN

# The Impact of the Development Fund's and LI-BIRD's Community-based Agrobiodiversity Programme in South Asia – with emphasis on Nepal



FRIDTJOF NANSENS INSTITUTT  
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**Regine Andersen**

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## Abstract

The Development Fund of Norway (DF) has commissioned an evaluation to analyse the impact, relevance and sustainability of its Community-based Biodiversity Management South Asia Programme (CBM-SA). The programme was implemented by Local Initiatives for Biodiversity, Research and Development (LI-BIRD) with DF support from 2008 until 2016, aimed at improving the 'biodiversity-based' livelihood security of local communities. Target groups were small-scale farmers, disadvantaged farmers in particular, with a special emphasis on women. The focus of the evaluation is on Nepal. The CBM-Nepal Programme has successfully responded to the most central needs of the target groups, including those of women and members of disadvantaged groups, in seven of the ten sites that were followed up by LI-BIRD until the end of the programme period. Seed and food security and livelihoods have improved greatly within the target groups. The programme has repatriated and secured access to crops that are adaptive to climate change and has introduced agricultural methods that are similarly more resilient. Members appreciate the collective spirit, self-esteem and empowerment experienced through their associations. The CBM-Nepal Programme is highly relevant to, and has influenced the policies, strategies and plans of the government of Nepal, and has also contributed to achieving Nepals commitments to relevant international agreements. The evaluation offers recommendations as to how the experiences could be better documented, analysed and shared nationally and internationally, and how conditions could be identified for scaling up the model to a national level in Nepal and in other countries. Towards this end, it offers recommendations for capacity development, focus of work and long-term commitment.

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# Acronyms and Abbreviations

CBD	Convention on Biological Diversity
CBM	Community-based Biodiversity Management
CBM-SA	Community-based Biodiversity Management South Asia Programme
CSB	Community Seed Bank
CSV	Climate-Smart Village
DADO	District Agriculture Development Office
DF	Development Fund, Norway
DFID	Department for International Development, UK
DGIS	Directorate-General for International Cooperation, the Netherlands
DLSO	District Livestock Service Office
DOA	Department of Agriculture
EOSA	Ethio-organic Seed Action, Ethiopia
GPA	Global Plan of Action on Plant Genetic Resources for Food and Agriculture (FAO)
IDRC	International Development Research Centre, Canada
IPGRI	International Plant Genetic Resources Institute ( <i>renamed Bioversity International</i> )
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
LI-BIRD	Local Initiatives for Biodiversity, Research and Development (Nepal-based)
MoPE	Ministry of Population and Environment, Nepal
NAGRC	National Agricultural Genetic Resource Centre, Nepal
NARC	National Agricultural Research Council, Nepal
NEFAS	North East Slow Food and Agrobiodiversity Society
NGO	Non-governmental organization
NPR	Nepalese Rupees
PPB	Participatory Plant Breeding
SAHAS	Group of Helping Hands, Nepal
SAWTEE	South Asia Watch on Trade, Economics and Environment
SDG	UN Sustainable Development Goals
VDC	Village Development Committees (Nepal) (dissolved 2015)

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In the end, however, responsibility for this report and for any shortcomings remains with me.

*Oslo/Lysaker, 26 June 2019*  
*Regine Andersen*  
*Senior Research Fellow (Dr Polit)*  
*Fridtjof Nansen Institute*

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## Summary

The Development Fund of Norway (DF) is among the leading agencies worldwide collaborating with developing-country partners to promote and enhance the sustainable use of crop genetic diversity as a means of poverty alleviation and food security. During the past decade, the DF has worked together with local partners in Ethiopia, Guatemala, Honduras, Nicaragua, Malawi, Nepal, India, Bangladesh, Sri Lanka and Somalia to improve the livelihood security of local communities through programmes for community-based agrobiodiversity management.

The DF has commissioned an evaluation to analyse the impact, relevance and sustainability of its agrobiodiversity management programmes over the past decade, also with a view to the effects of climate change on agriculture. The present report presents the findings from the evaluation of the Community-based Biodiversity Management South Asia Programme (CBM-SA) implemented by Local Initiatives for Biodiversity, Research and Development (LI-BIRD) with DF support. The focus of this evaluation is on Nepal.

The CBM-SA, implemented in Bangladesh, India, Nepal and Sri Lanka 2008–2016 aimed at improving the ‘biodiversity-based’ livelihood security of local communities in South Asia. Target groups were small-scale farmers, disadvantaged farmers in particular, with a special emphasis on women.

Case studies for this evaluation were carried out in Shivasatakshi Municipality in Jhapa District (South-eastern lowland plains) and in Bhanu Municipality, Tanahun District (mid-hills, central Nepal).

The Kanchan Biodiversity Conservation and Development Committee visited in Shivasatakshi was functioning very well. There was an impressive rice diversity block with 70 thriving varieties of rice, along with ample seed production, distribution and sales of open-pollinated improved and local varieties of rice, facilitated through a special revolving fund. The diverse vegetable production was facilitated

through regularly distributed seed diversity kits and training in advanced organic methods, thereby improving nutrition and income levels. Micro-credit schemes linked to conservation activities benefitted 120 members in 2018, based on a fast-growing revolving fund for this purpose. Income-generation activities reached women and disadvantaged groups in particular. There were many accounts of how the programme had transformed the lives of the members of the association, benefitting the whole community as well as farmers from neighbouring communities. Some weaknesses were identified, particularly as regards the technical aspects of conservation in the community seed bank, but the broad picture was positive indeed. The association was well organized (institutionally, professionally and financially), its executive committee and members demonstrated high levels of competence, as well as self-esteem. Female members emphasized the empowerment they experienced through participation. The greatest challenge involved the rapid expansion of seed sales and micro-credit supported activities, and related questions of how to increase storage facilities and transform administrative systems to accommodate such growth.

Also in Bhanu the achievements were impressive. A professional executive committee presented their work and achievements in a well-structured power-point presentation. Visits to the community seed bank, diversity blocks and several farms, together with interviews with members and affected farmers, confirmed the impression of a smoothly functioning Biodiversity Conservation Committee. 111 varieties of local crops were maintained in the community seed bank, closely following established procedures, and were grown in the diversity blocks as well as in members’ fields. Seed security with regard to these crops and self-sufficiency in vegetables were important achievements, bringing improved food security, nutrition and income. Production has been further boosted by training in advanced organic methods. Another important achievement was seed production of open-pollinated improved varieties of rice, facilitated through the steadily growing seed

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fund. Involvement in breeding the local *Khari* (hill) goat has boosted the economy of many members and established the site as a centre of *Khari* goat production in the district. This has been possible through micro-credits from the Community Biodiversity Management Fund of the association, which has benefitted 244 members in 2018, women and disadvantaged people in particular. Farmers, members and non-members told how the association had transformed their lives, benefitting the community as well as neighbouring ones. Some weaknesses and challenges were also identified, but they did not affect the overall impression of success.

From information gathered about the other project sites, there are good reasons to assume that the findings from the two project sites visited have relevance for the five other project sites that made substantial progress during the programme period. Three other programme sites were quite different from the ones described above, and our findings from the two sites visited are not relevant for these programme sites. What the three other sites have in common, is that they were not as successful. A summary of experiences and lessons is provided in the report.

The District Agricultural Development Offices (DADOs) were partners in the Community-based Biodiversity Management (CBM) Nepal programme in ten districts, sharing the approach – in itself an achievement. The aim had been to engage the DADOs in scaling up the best practices of CBM. However, as the DADO sites were organized differently and are not directly comparable with the LI-BIRD sites, the findings from the two case studies are not relevant for the DADO sites. Since this was the first effort to scale-up the CBM approach through the extension service system, the experiences and lessons are valuable. A summary of key experiences and lessons is provided in the report.

The CBM-Nepal programme has successfully responded to the most central needs of the target groups, including those of women and members of disadvantaged groups, in seven of the ten sites that were followed up by LI-BIRD until the end of the programme period. Seed and food security and livelihoods have improved greatly within the target groups. The programme has repatriated and secured access to crops that are adaptive to climate change and has introduced agricultural methods that are

similarly more resilient. Members appreciate the collective spirit, self-esteem and empowerment experienced through their associations. The CBM programme is highly relevant to the policies, strategies and plans of the government of Nepal, as well as to its commitments to such international agreements and goals such as the International Treaty on Plant Genetic Resources for Food and Agriculture, the Convention on Biological Diversity and the UN Sustainable Development Goals.

The impacts of the CBM-Nepal programme are impressive. Not only have more than one thousand crop varieties been conserved and made available to farmers, but the livelihoods of the farmers involved have improved substantially in seven localities. Through the programme they have been able to reduce their agricultural production costs substantially, while achieving greater yields and diversifying production for home consumption and generating substantial income to meet household consumption needs and ensure good schooling for their children. That these impacts have been sustained and are even increasing two years after the project was phased out, is a clear sign of success. Members related impressive accounts of how, as a result of the programme, their life situations have been transformed and continue to improve steadily. Also non-members enjoy access to high-quality seed from the CBM associations. In some districts the demand for high-quality seed from the CBM associations exceeds production, so greater production capacity is needed. Non-members also enjoy the knowhow that members share with them.

The vibrant activities of seven of the ten associations established with support from LI-BIRD/DF two years after the end of programme show that these interventions are sustainable. Moreover, activity levels are increasing, and the capital generated is growing steadily. This is clearly a great success. However, sustained progress here will depend on technical and institutional backup with regard to several pressing issues, as well as continued access to training and relevant information. With little effort, even greater impacts can be expected in the future, ensuring longer-term sustainability.

However, LI-BIRD/DF has not succeeded everywhere. This report has noted important lessons for future engagement – from the experiences with three sites that did not succeed, as well as a first approach to

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engaging the agricultural extension service. These lessons concern matters such as agroecological, sociocultural and logistical aspects to be considered in connection with establishing CBM associations, as well as how the advantages of the agricultural extension services can be best utilized while also building their capacity to carry responsibilities with regard to CBM interventions. The experience that has been accumulated offers a solid foundation for the next steps.

The CBM programme in Nepal has been a great success in terms of finding a path for CBM, involving various solutions for different sites in order to respond to the specific needs of target groups, and carefully preparing the policy environment at all governance levels for the introduction of CBM. This has meant considerable pressure on LI-BIRD to deliver, since it has devoted itself to putting all this in place. LI-BIRD is recognized as an organization that can show the way, and that is what is expected of them. Nevertheless, CBM was not targeted in the new LI-BIRD/DF programme on livelihood and resilience enhancement that started in 2017, except for a few CSB activities. LI-BIRD asks how DF can leave so much valuable experience – experience gained on both sides. This is also a question of sustainability. The good results that LI-BIRD and DF have produced together could become a great story and provide a solid foundation for scaling up good practices. Now others may take over and capitalize on these results, leaving DF with little of the credit it deserves. LI-BIRD sincerely hopes that DF will be able to continue where it left off.

Community-based Biodiversity Management as practised by LI-BIRD/DF in the CBM programme in Nepal is a well-designed and powerful tool for ensuring seed and food security and improving the livelihoods and living conditions of small-scale farmers, while ensuring that crop diversity and soil resources will be available for future generations.

That being said, the findings from Nepal have limited general relevance for the other partner countries of CBM-SA. In general, success in other countries has been limited. This is due mainly to the choice of partners and their differing expectations, as well as to overburdening LI-BIRD as first-time coordinator of a regional programme with limited financial resources. A regional programme might well have been facilitated from the DF, leaving LI-BIRD with

the capacity it needed to develop the CBM model in Nepal. Coordinating partners and facilitating exchange among them are central advantages that the DF may develop further, also for partners in South Asia.

The evaluation offers six sets of recommendations: (1) It's harvest time! Documentation, research and dissemination are needed, to spread the news of the achievements, learn from experiences and identify systematically the conditions for success as a foundation for scaling up best practices; (2) Take CBM to a new level in Nepal, based on the foundation years – a road map is presented; (3) Strengthen the capacity of DF on agrobiodiversity to improve its role as a strong professional partner; (4) Focus the work of the DF in terms of numbers of thematic approaches and partners, in order to ensure quality and long-term sustainability of its programmes and projects; (5) Long-term commitment for programmes related to agrobiodiversity management, as DF and LI-BIRD have potentials for great accomplishments if they can build on the successes achieved; (6) Learning across borders, as DF-partners in different countries may benefit greatly from sharing experiences.



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# Contents

Abstract .....	V
Acronyms and Abbreviations .....	VI
Acknowledgements .....	VII
Summary .....	VIII
Contents .....	XII
<b>1. Introduction .....</b>	<b>1</b>
1.1 Why this evaluation? .....	1
1.2 Method .....	2
1.3 Structure of the report .....	3
<b>2. The Community-based Biodiversity Management Programme .....</b>	<b>4</b>
2.1 History .....	4
2.2 Objectives, target groups and project sites .....	5
2.3 Key features of the programme .....	5
2.4 On reported achievements and adjustments along the way .....	6
2.5 Approach of this evaluation .....	7
<b>3. Two embedded case studies from Nepal: Jhapa and Tanahun .....</b>	<b>8</b>
3.1 Kanchan Biodiversity Conservation and Development Committee in Shivagunj, Shivasatakshi Municipality, Jhapa District .....	8
3.1.1 Conservation work .....	8
3.1.2 Success story: local Kalonuniya rice .....	10
3.1.3 Seed production .....	10
3.1.4 The CBM fund and income-generating activities .....	11
3.1.5 Diversity kits and introduction of more vegetables .....	11
3.1.6 Use of organic methods .....	11
3.1.7 Institutional matters .....	11
3.1.8 Messages to the Development Fund .....	11
3.2 Biodiversity Conservation Committee at Purkot, in Bhanu Municipality, Tanahun District .....	12
3.2.1 Conservation work .....	14
3.2.2 The success story of Khari goats .....	14
3.2.3 Seed production .....	14
3.2.4 The CBM fund and income-generating activities .....	15
3.2.5 Use of organic methods .....	15
3.2.6 Institutional matters .....	15
3.2.7 Messages to the Development Fund .....	15
<b>4. General relevance of the findings .....</b>	<b>16</b>
4.1. General relevance to project sites in Nepal with similar characteristics .....	16
4.1.1 Agyauli in Nawalparasi District .....	16
4.1.2 Rampur in Dang District .....	16
4.1.3 Ghanteschwor in Doti District .....	17
4.1.4 Kachorwa in Bara District and Begnas in Kaski District – resource sites .....	17
4.2 LI-BIRD supported project sites in Nepal for which the findings are not relevant .....	17
4.2.1 Talium in Jumla District .....	17
4.2.2 Ratanchura in Sindhuli District .....	18
4.2.3 Kunjo in Mustang District .....	18
4.3 DADO sites in Nepal for which the findings are not relevant .....	19

---

4.3.1 Difficult framework conditions.....	19
4.3.2 Experiences from Jhapa and Kaski .....	19
4.3.3 Impacts from the DADO-part of the programme .....	19
4.3.4 Some of the lessons learned from the DADO experiences .....	20
4.4 Some lessons from the programme’s South Asia approach .....	20
4.4.1 Partners and expectations .....	20
4.4.2 Experience, capacity and financial resources.....	21
4.4.3 Prospects for a regional approach .....	21
<b>5. Relevance of the CBM programme in Nepal.....</b>	<b>22</b>
5.1 Relevance to target groups.....	22
5.1.1 Relevance to small-scale farmers.....	22
5.1.2 Relevance to women.....	23
5.1.3 Relevance to disadvantaged people .....	23
5.2 Relevance to public policies, strategies and plans in Nepal .....	24
5.3 Relevance to international agreements and goals .....	25
5.3.1 Relevance to the International Treaty on Plant Genetic Resources for Food and Agriculture .....	25
5.3.2 Relevance to the Global Plan of Action on Plant Genetic Resources for Food and Agriculture ..	26
5.3.3 Relevance to the Convention on Biological Diversity.....	26
5.3.4 Relevance to the UN Sustainable Development Goals.....	26
5.4 Relevance with regard to agrobiodiversity conservation and farmers’ seed systems.....	26
5.4.1 Exploring/developing the diversity available .....	26
5.4.2 More diversity.....	27
5.4.3 Value addition .....	27
5.4.4 New methods and tools.....	27
5.4.5 Relevance to young people .....	27
5.5 Present and future validity of the programme objectives in Nepal .....	28
<b>6. Impact of the CBM programme in Nepal .....</b>	<b>29</b>
6.1 Impact on on-farm management of agrobiodiversity .....	29
6.2 Improved livelihoods, including food and nutrition security and income .....	29
6.3 Empowerment of local communities .....	30
6.4 Distribution of benefits between women and men .....	30
6.5 Dissemination of quality seeds beyond target communities .....	30
6.6 Unintended/unexpected impacts.....	30
6.7 Impact on relevant local, national or international policies.....	31
6.8 Impact on methodologies, plans or strategies of relevant institutions.....	32
<b>7. Sustainability of the CBM programme in Nepal .....</b>	<b>33</b>
7.1 Sustainability of achievements/impacts.....	33
7.2 Strengthening the sustainability of DF’s agrobiodiversity interventions in Nepal.....	33
7.2.1 Opportunities for strengthening the sustainability of successful CSBs/associations .....	33
7.2.2 Conditions for success for future interventions in Nepal as regards sustainability.....	34
7.2.3 Conditions for scaling-up community biodiversity management sustainably.....	35
<b>8. Conclusions and recommendations .....</b>	<b>37</b>
8.1 Conclusions .....	37
8.2 Recommendations.....	38
<b>Attachments.....</b>	<b>41</b>
A. List of documents and literature .....	41
B. List of interviews and interviewees in Nepal.....	44

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# 1. Introduction

The Development Fund of Norway (DF) has, in collaboration with local partners in Ethiopia, Guatemala, Honduras, Nicaragua, Malawi, Nepal, India, Bangladesh, Sri Lanka and Somalia worked to strengthen farmers' access and knowledge of locally adapted agrobiodiversity, while seeking to ensure that relevant national institutions and civil society organizations integrate agrobiodiversity management in their own work. DF has commissioned an evaluation to analyse the impact, relevance and sustainability of these programmes with a view to environmental challenges such as climate change. The evaluation was split according to regions. The present report presents the findings from the evaluation of the Community-based Biodiversity Management South Asia Programme (CBM-SA) that was carried out by Local Initiatives for Biodiversity, Research and Development (LI-BIRD) as DF's implementing partner. The emphasis of the evaluation is on Nepal.

This evaluation was conducted two years after the programme had been phased out in Nepal; for several sites there had been no contact with LI-BIRD since then. The timing of the evaluation offered an excellent opportunity to assess the impact, relevance and sustainability of the programme, while at the same time enabling recommendations that may strengthen long-term sustainability.

## 1.1 Why this evaluation?

Plant genetic resources for food and agriculture constitute the basis of all food and agricultural production. They provide the essential pool from which plant traits can be found that meet the challenges of crop pests and diseases, drought, marginal soils and other environmental factors, such as climate change. This also makes these resources central in the fight against poverty, as diversity between and within crops is an effective means of spreading the risks of crop failure for small-scale farmers, and for exchanging, selecting and developing varieties that can adapt to changing environmental conditions and nutritional needs.

The Development Fund (DF) of Norway is among the leading agencies worldwide, collaborating since 1989 with developing-country partners to promote and enhance the sustainable use of crop genetic diversity as a means of poverty alleviation and food security. DF-supported projects on agrobiodiversity have served as best-practice examples in many contexts (see e.g. Andersen and Winge 2013; Global Consultation on Farmers' Rights in Bali, 2017) and provide valuable learning possibilities.

A global effort is underway, led from the Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture, aimed at establishing a Joint Programme on Biodiversity in Agriculture for the Sustainable Use of Plant Genetic Resources for Food and Agriculture. It would bring together central actors and boost international efforts. New efforts are also underway to enhance and promote the realization of Farmers' Rights under the International Treaty, in the form of a set of options to guide and assist countries.

In this context, the initiative to evaluate the impact of the DF community-based agrobiodiversity management programmes implemented 2009–2016 in Africa, Asia and Central America is both relevant and timely. It may provide important learning opportunities not only for the DF and its partners, but also as regards enhancing the sustainable use of crop genetic resources globally.

The findings are also relevant for implementation of the Norwegian Government's new plan of action for sustainable food systems in Norway's foreign affairs and development cooperation policy 2019–2023 (Ministry of Foreign Affairs, 2019), which emphasizes access to agrobiodiversity in agriculture as an important tool for achieving climate-resilient agriculture in developing countries.

The Development Fund and its implementing partners will use the learnings from this evaluation to guide the development of future projects and programs.

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## 1.2 Method

As part of this assignment, a 30 pages inception report was prepared, to design the method for the evaluation in the different regions. This was approved by the DF prior to evaluation fieldwork.

The evaluation is based on qualitative methods, an approach well suited for examining analytical questions like those posed by the DF. Available statistical material has been taken into consideration as appropriate. Case studies from two programme sites in Nepal provide the foundation for the analysis. These are representative of the majority of LI-BIRD-managed sites. Drawing also on information from the other sites, this report establishes the conditions under which the findings may have relevance for other sites ('casing'), and it describes the divergent situations at sites which are different. Contextual information has been collected so as to situate the case studies within relevant policies, structures and processes across scales up to the national and international levels.

The case studies in Nepal can be regarded as 'embedded case studies', as Nepal is in turn a case of the implementation of the programme in South Asia. However, this evaluation could not go into depth on the implementation of the programme in Bangladesh, India and Sri Lanka, as there was no budget for doing case studies in these countries. However, considerable time was spent discussing experiences with LI-BIRD, also with previous and current directors and staff who had been involved in various phases of the programme. This, together with the documentation received, provided the basis for briefly assessing the programme in the other countries included in CBM-SA from the side of LI-BIRD as an implementing and coordinating agency. However, a fuller evaluation of the impact, relevance and sustainability of the CBM-SA in Bangladesh, India and Sri Lanka, would have required field studies in those countries.

Further information on the cases and case study approach is provided in section 2.5.

Data collection has involved document and literature review. The documents include applications, plans, reports, evaluations, and other programme materials, including publications from DF and LI-BIRD, as well as relevant national legislation, policies, strategies, and plans from the government

of Nepal. Relevant international agreements were also covered in the document analysis. The literature includes research reports, books and book chapters and articles. See attachment A for list of documents and literature.

Data collection further encompasses semi-structured interviews. Altogether 126 informants in Nepal were consulted (42 women and 84 men), through key informant and focus group interviews. Some persons were consulted more than one time. Key informant interviews were conducted with LI-BIRD management and staff; with officials from the government and authorities at various governance levels, including with former staff of the collaborating extension service units (DADOs); and observers/researchers. Focus group interviews were conducted with board members of the CBM associations under the programme in the two case-study sites (gender-mixed) and with members of the CBM associations at these sites (gender-mixed), as well as separate focus group interviews for women. Focus group interviews were also conducted with non-CBM-members affected by programme activities (gender-mixed). All together 104 farmers were consulted: 39 women and 65 men. See Attachment B for a list of interviews and interviewees in Nepal.

In connection with the case studies, involved/affected farmers were visited on their farms. The farmers showed the agrobiodiversity at their farms, what methods they applied to improve productivity in light of climate change, and how they worked to improve soil health and environmental sustainability. Farmers also described how the transformation caused by the programme had affected their lives in terms of seed and food security, livelihoods and living conditions, as well as the empowerment through acquiring knowledge, exchanging experiences and working together. Altogether eight farm visits were conducted in Nepal. The names of the farmers visited are included in the list of interviews/interviewees in Attachment B.

All interviews were recorded in the form of memos, and photographs were taken to document findings at the farms visited. Photographs were also taken of groups of interviewees.

Debriefings took place with the boards of the associations visited at the case-study sites, with representatives of LI-BIRD in Pokhara and

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Kathmandu as well as with the DF in Oslo. These meetings served as important sources of validation of the information presented here. Further, LI-BIRD and the DF have commented on this report.

### **1.3 Structure of the report**

The evaluation report starts out with an introduction to the Community-based Biodiversity Management Programme South Asia (CBM-SA). On this background the methodological approach to the evaluation is further specified. The two case studies are presented; next, the general relevance of the findings from these two sites is discussed as regards the remaining sites in Nepal. Diverging sites are described in further detail. Also, a brief overview is provided of experiences from implementing the programme in India, Bangladesh and Sri Lanka, discussing lessons as seen from LI-BIRD. Due to the limited information from these other countries, the ensuing analysis of relevance, impact and sustainability as well as conclusions and recommendations are limited to the finding from Nepal.

The findings from Nepal, thus, constitute the foundation for the analysis of the relevance, impact and sustainability of the programme. Conclusions and recommendations for this work in Nepal are presented.

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## 2. The Community-based Biodiversity Management Programme

The Community-based Biodiversity Management Programme South Asia (CBM-SA) has been conducted in Nepal, India, Sri Lanka and Bangladesh under the leadership of Local Initiatives for Biodiversity, Research and Development (LI-BIRD), an organization established in 1995, engaged in sustainable management of natural resources for improving livelihoods of smallholder farmers. LI-BIRD is one of very few research-based NGOs worldwide, that is specialized in on-the-ground agrobiodiversity management.

### 2.1 History

After some initial activities in agrobiodiversity management, LI-BIRD engaged in systematic work in the area from 1997, starting with the project *Strengthening the Scientific Basis of In-situ Conservation of Agricultural Biodiversity On-Farm* (In-Situ Project). Here LI-BIRD collaborated with Nepal Agricultural Research Council and the International Plant Genetic Resources Institute (IPGRI, later renamed Bioversity International). The project aimed at developing a framework of knowledge on farmers' decision-making processes relevant to *in-situ* conservation of agrobiodiversity; strengthening national institutions for the planning and implementation of conservation programmes for agrobiodiversity; and broadening the use of agrobiodiversity and farmers' participation in such conservation. The first phase (1997–2001) was supported by the Directorate-General for International Cooperation of the Netherlands (DGIS) and the second phase (2002–2006) by the International Development Research Centre of Canada (IDRC). In the second phase, a pilot community seed bank (CSB) was successfully established at Bara site in southern Nepal.

Substantial achievements were made and important lessons drawn. The question arose: how to scale up the achievements in Nepal as well as in other parts of South Asia? DF had been a partner with LI-BIRD since 2003, supporting other projects; it was interested in partnering in the follow-up after IDRC

support had been phased out. In 2007, DF decided to support LI-BIRD in scaling up the achievements from the In-Situ Project, and the project application for the CBM-SA project was developed. The idea was to scale up the activities to 10 districts in Nepal, involving the District Agriculture Development Organizations (DADO) with parallel activities in each district, subsequently laying a foundation for upscaling also in other countries in South Asia. The CBM-SA programme started as a pilot project for scaling up experiences in Nepal in 2008. Research was an important element, and a 2008 baseline study provided a central foundation for the project. Also the identification of project sites followed scientific standards. The DADOs joined the collaboration, as intended.

During 2008, also the South Asian approach was developed. Potential partner organizations in India, Bangladesh and Sri Lanka, selected on the basis of network contacts, were invited. They all had experience in agrobiodiversity management, to varying degrees: ANTHRA and GREEN Foundation in India, UBINIG in Bangladesh and Green Movement in Sri Lanka. In 2009 some activities were implemented in these countries; then, from 2010, the CBM-SA project was implemented in all partner countries.

In 2013, LI-BIRD realized that this South Asian approach was requiring too much capacity and energy from the organization, at the expense of implementation in Nepal. Moreover, there was little replication of Nepali lessons and experiences in the other South Asian partner countries, even though there were relevant learning experiences across borders. On the whole, achievements were not satisfactory. As a result, DF decided to phase out its support to India in 2014, to Bangladesh in 2015; and in the final programme year, 2016, only Sri Lanka remained on board.

The programme was scaled down in term of geographical outreach. However, in terms of number

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of beneficiaries, its outreach was expanded, as the concentration of capacity made it possible to reach more people through specifically targeted activities in project sites in Nepal. This has been documented in annual reports to the Development Fund.

LI-BIRD has developed advanced know-how and capacity on community-based biodiversity management and is recognized internationally for its global leadership in developing sustainable approaches to community seed banks and related activities. LI-BIRD representatives are frequently invited to international forums to present their experiences. LI-BIRD has indeed become a forerunner in this area. Executive Director Dr Balam Thapa emphasises that: 'agrobiodiversity remains our main focus in LI-BIRD, the key part of our work' (interview, 1 October 2018).

## 2.2 Objectives, target groups and project sites

The overall goal of the CBM-SA programme was to increase 'biodiversity-based' livelihood security of local communities in South Asia. This reflects an important lesson from the In-Situ Project: successful conservation strategies on the ground must offer livelihood benefits to the farmers. Expected programme outcomes were increased on-farm/in-situ conservation of genetic diversity; increased agrobiodiversity-based incomes; farmer groups empowered with regard to the management of agro-biodiversity, and increased contribution and influence of policies towards the sustainable use and conservation of genetic resources.

Target groups were small-scale farmers, disadvantaged farmers in particular, with special emphasis on women.

In Nepal the LI-BIRD project sites were located to and linked up with Village Development Committees (VDC) in 10 districts. VDCs were later dissolved in connection with the countrywide administrative reform of 2015, but the names of the locations have been retained as a reference for this evaluation:

1. Shivagunj, Jhapa District
2. Purkot, Tanahun District
3. Agyauli, Nawalparasi District
4. Rampur, Dang District
5. Ghanteshwor, Doti District
6. Talium, Jumla District

7. Ratanchura, Sindhuli District (phased out by the end of 2014, in order to consolidate activities in other sites)
8. Kunjo, Mustang District (phased out by the end of 2014, in order to consolidate activities in other sites)
9. Kachorwa, Bara District (resource site from the In-Situ Project, phased out during 2013)
10. Begnas, Kaski District (resource site from the In-Situ Project, phased out during 2013)

The DADOs implemented parallel projects in all these ten districts from 2010 until 2013. In 2014 only three sites were continued (Dibyapuri in Nawalparasi District, Chailahi in Dang District, and Depalgaun in Jumla District. In 2015 all activities were halted.

In the other countries of South Asia in which CBM-SA was active, activities were started in 43 villages/sites in 16 districts. In India, ANTHRA engaged in activities in eleven villages in two districts and GREEN Foundation engaged in activities in eight villages in two districts. However, programme support was phased out in 2014. In Bangladesh, UBINIG initiated activities in fourteen sites in six districts. Here programme support was phased out in 2015. In Sri Lanka the Green Movement initiated activities in ten villages/sites in six districts; here the programme was phased out together with the finalization of the project in Nepal, in 2016. Reasons for phasing out support prior to the plan were explained above (2.1).

## 2.3 Key features of the programme

LI-BIRD's approach to Community-based Biodiversity Management (CBM) focuses on raising awareness, empowering communities, conserving and diversifying crops (and to some extent livestock), improving livelihoods, building capacity, integrating its work in policies, strategies and plans at various levels of governance, and securing financial and institutional sustainability.

CBM practices include:

- community biodiversity registers (identifying and registering the crop diversity available in farmers' fields/surroundings);
- diversity fairs (displaying seeds and other propagating material of the diversity identified for exchange/sale);
- food fairs (displaying and offering food made from the identified agrobiodiversity, often based on traditional recipes);

- diversity blocks (conserving the diversity of crop varieties in small parcels in a field to maintain and display them, and sometimes to explore their characteristics with a view to variety enhancement and breeding);
- participatory plant breeding (breeding new varieties based on the diversity available, often through cross-breeding techniques);
- landrace enhancement (participatory varietal selection);
- diversity kits (bags with seeds of various crops, often vegetables, to be distributed to members and sold to other interested persons to promote seed sharing and increase the diversity of crops for production);
- participatory seed exchange (enabling farmers to exchange their seeds more efficiently);
- community seed banks (storing facilities for seeds of different varieties, to conserve and enhance diversity, as a back-up for seeds kept by farmers; such banks normally use improved seed storage technologies like airtight containers, Hydrion-ph paper testers and/or moisture meters to assess seed moisture and incubators used for germination-testing of seed);
- home gardening (organic methods for home gardens and agriculture, including various methods for composting, vermiculture, urine collection for use as fertilizer and biopesticide, production and application of biopesticides from herbs, and crop rotation)
- Value-addition of crops (enhancing quality and sometimes processing and packaging of crops and facilitating market entry for increased income);
- promotion of animal genetic resources (when not included in other strategies, e.g. goat rearing, piggery, and poultry keeping);
- CBM funds (revolving funds providing micro-credits to members at low interest rates for income-generating activities, provided the members also take part in conservation activities);
- production of high-quality seed for distribution and sales (mainly from open-pollinated improved varieties recommended by the National Seed Board, but also from some traditional varieties, in order to apply the insights achieved in seed selection and production for commercial purposes, so as to generate additional income as an incentive for CBM work)
- seed funds (funds enabling the association

to purchase seeds produced by its members or other associated groups, for distribution among members or sales to members and other interested customers at a somewhat higher price, enabling the seed fund to grow as well as earn some income for the community seed bank).

- many training courses for the above-mentioned purposes, as well as exposure visits to other sites.

Some practices were developed in response to challenges and demand encountered along the way. Also, practices present from the beginning were further developed through the programme. Importantly, communities themselves decide which practices to apply. Some have applied all practices to varying degrees; some have chosen not to apply certain selected practices.

After the financial support from LI-BIRD/DF was phased out in 2016, operating costs for the activities are covered by the respective CBM Fund and Seed Fund, in addition to any other funding, e.g. from local authorities. The operating costs cover salaries for staff as well as other running costs.

## 2.4 On reported achievements and adjustments along the way

Substantial achievements were reported to the Development Fund from seven project sites in Nepal, all run by LI-BIRD: Shivagunj in Jhapa District, Purkot in Tanahun District, Agyauli in Nawalparasi District, Rampur in Dang District, Ghanteshwor in Doti District; Kachorwa in Bara District; and Begnas in Kaski District (the latter two phased out by the end of 2013 as programme resource sites). Lack of progress was encountered in Kunjo in Mustang District (phased out by the end of 2014), Ratanchura, Sindhuli (phased out by the end of 2014) and Talium in Jumla District.

The project sites run by the DADOs made some progress initially, but could not report similar achievements and were phased out gradually between 2014 and 2015. Resources allocated to DADO sites were much lower as compared to the LI-BIRD managed sites.

Work in other South Asian countries experienced several major challenges, resulting in the South

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Asian approach being phased out between 2014 and 2016. This released more capacity for LI-BIRD to work in Nepal, eventually leading to a greater number of beneficiaries in Nepal, in fact exceeding the number targeted for the CBM-SA Programme.

All in all, with the adjustments made along the way, LI-BIRD was able to report over-fulfilment of the targets set for the programme in its final report to the Development Fund. There had been some serious challenges along the way, followed by subsequent adjustments.

## 2.5 Approach of this evaluation

This evaluation focuses on the sites that made good progress during the programme implementation period. This is based on the assumption that such cases hold considerable learning potential as regards conditions for success as well as the practical solutions chosen. Therefore, the in-depth embedded case studies focus on two such examples, in differing agroecological and socio-cultural contexts. As will be shown below, these two cases have considerable potential for generalization to the other five sites which reported considerable achievements.

The other sites are also important for learning. While this evaluator was in Nepal, considerable time was spent with LI-BIRD to gather information and discuss possible reasons why three sites did not succeed. Here important lessons can be drawn for future work in this area.

It is also highly interesting that LI-BIRD tried to scale up the experiences via the established public extension service system, the DADO. This could potentially have great impact, although there was not much success to be noted. While in the field, we visited officials who had been centrally involved in the DADO part of the programme, and learned about some unexpected positive long-term impacts as well as reasons why the programme as such did not make much progress. These lessons are of great value for efforts to scale up the experiences from the seven successful programme sites.

Also intriguing is the idea of exporting the positive experiences to other countries in South Asia. It was beyond the scope of this evaluation to go into depth on this part of the programme, but again much time was spent discussing experiences with LI-BIRD, also with previous and current directors and staff

that had been involved in various phases of the programme. This, together with the documentation provided, helps to bring out some important lessons from the side of LI-BIRD.

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## 3. Two embedded case studies from Nepal: Jhapa and Tanahun

The evaluation team visited Kanchan Biodiversity Conservation and Development Committee at Shivagunj, Shivasatakshi Municipality in Jhapa District, and the Biodiversity Conservation Committee at Purkot, in Bhanu Municipality, Tanahun District. Here the findings from the field visit are presented, followed by a discussion of their general relevance for the other LI-BIRD project sites, and with information from the DADO part of the programme.

### 3.1 Kanchan Biodiversity Conservation and Development Committee in Shivagunj, Shivasatakshi Municipality, Jhapa District

Shivagunj is located in lowland plains of in south-eastern Nepal, near the border with India. The name refers to a former Village Development Committee, dissolved in connection with the nationwide 2015 administrative reform. For simplicity, and since it was the name of the site for this programme activity, we use the name here. Shivagunj belongs to the ‘rice basket’ of Nepal, in the lower plains (the Terai). High-yielding rice varieties dominate, normally grown by use of chemical fertilizers and pesticides. Before the irrigation system was established in Shivagunj some 20 years ago, many local varieties of rice were grown here. After the introduction of irrigation channels, diversity dwindled rapidly as farmers switched to modern varieties and hybrid seed. With the new varieties came higher incomes, but also dependencies. Seeds and input factors were expensive, money had to be borrowed from money lenders at high interest rates, and rice prices were unpredictable – so, despite the higher yields, the economic benefits were often marginal for small-scale farmers. In Shivagunj the evaluation team found an association that had largely solved these problems, for its members and for many other farmers in the area.

When the evaluation team arrived in Shivagunj in October 2018, that was the first visit from LI-BIRD after support to this site was phased out in 2016.

We did not know what to expect. What we found was an impressively well-functioning community biodiversity management association engaged in systematic conservation work – seed production, distribution and sales, facilitated through a special revolving fund; vegetable production with advanced organic methods, improving nutrition and income levels; micro-credit schemes linked to conservation activities, now benefitting 120 members per year; a fast-growing revolving fund for this purpose; vibrant income-generation activities that reached women and disadvantaged groups in particular; and many accounts of how the programme had transformed the lives of the members of the association and benefited the whole community as well as farmers from neighbouring communities. Some weaknesses were present, as explained below, but the broad picture was positive indeed.

The prosperous growth after 2016 was possible despite the lack of external funding or backup, due to the solid foundation laid by LI-BIRD, with support from the DF, from 2008 until 2016. The association was well organized (institutionally, professionally and financially), its executive committee and members demonstrated high levels of competence in areas important for the association, as well as self-esteem. Female members in particular emphasized the empowerment they experienced through participation as being an important benefit.

#### 3.1.1 Conservation work

The first observation we made was the thriving rice diversity block at the entrance to the community seed bank. The rice diversity block displayed 70 local varieties of rice, in quadrats of approximately 2 m<sup>2</sup>, structured in orderly fashion and labelled, with some space in between. It was well kept and without any signs of pests or diseases. The rice diversity block constitutes the backbone of the conservation work of the community seed bank, as the seeds are regenerated each year through collective effort. This impressive field showed how the association takes conservation work seriously. Seed samples of all varieties were sent to the National Gene Bank in

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### BOX 1: BASIC FACTS ABOUT

#### Kanchan Biodiversity Conservation and Development Committee in Shivagunj, Jhapa

**Founded** with the support of LI-BIRD/DF in 2008.

**Supported** by LI-BIRD/DF 2008–2016, no funding after that.

**Registered** as a local NGO in 2013.

**Organized** with an executive committee and 23 village-level groups (up to three groups per village). A general assembly is the highest decision body. Office building localized together with the CSB, supported by LI-BIRD/DF and members of the association. One staff member.

**Members:** 1070 households (approx. 20% of all households in the area) with one representative from each household, thereof 698 women and 372 men.

**Crop varieties conserved:** 70 local varieties of rice, various varieties of vegetables, fruits and tubers.

**Crop varieties used for consumption, distributed through the association:** one local variety and four improved open-pollinating varieties of rice, two improved open-pollinated varieties of maize, as well an unknown number of vegetables and fruits, and smaller quantities of a few local varieties of rice.

**Seed production for sale:** 45 tonnes of seeds of four varieties of open-pollinating improved rice, two varieties of open-pollinating improved maize and one popular local rice variety, Kalonuniya, are produced by 26 trained member seed-growers. Approx. 1000 farmers bought rice in 2017, equally split between members and non-members. In addition, the municipality bought 1000 kg of rice for distribution, which constitutes a substantial recognition of the quality of the seed. The amount of seed produced and sold doubled in 2018.

**Seed fund for purchase of seed for marketing purposes:** LI-BIRD/DF contributed approx. NPR 800,000 to the Seed Fund, which had increased to NPR 1.5 million as of October 2018.

**CBM fund for income-generating activities:** A revolving community biodiversity management fund for income-generating micro-credits, with NPR 900,000 provided by LI-BIRD/DF, has increased to NPR 1.7 million as of October 2018, because of the 12% interest rate paid by the borrowers. 120 members have received micro-credits in 2018, to be paid back, with interest, after 6 months.

**Value increase:** LI-BIRD/DF invested altogether NPR 1.7 million in the two funds, which the members had increased by NPR 1.5 million to NPR 3.2 million as of October 2018. This figure does not include the resources taken from the funds to finance staff and running costs of the association.

2014, an important back-up.

Members have received training in the selection and conservation of seeds. In addition to the rice diversity block, members grow the local varieties of rice and other crops conserved in the community seed bank for conservation purposes in small plots on their farms. The evaluation team visited several of these plots. Engaging in conservation work is a precondition for receiving micro-credits. Conservation is deemed very important, to ensure the genetic properties required for future selection and breeding, particularly in light of climate change. At present, however, only one variety is used for commercial purposes, Kalonuniya (see below); a

few others are used for household consumption in small quantities (particularly Basmati and Anadi). Members of the association express the need for more training to explore, select and further develop the diversity they have, in order to make better use of it, not least to be able to meet the challenges of climate change. There could be more instances than that of Kalonuniya, and members feel that these should be explored. However, as the association no longer has training or technical backup, that is not possible.

Vegetables and fruits are grown on farm, and the association facilitates the distribution and exchange of seeds and propagating material, *inter alia* through

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diversity kits distributed each year, up to three times, with seeds of various vegetables. LI-BIRD introduced new crops that are now popular in many households, like taro and elephant-foot yam, both particularly nutritious. Approximately 150 households were growing elephant-foot yam as of 2018.

The storage system for seeds for conservation had some weaknesses, as the system for maintaining back-up bottles of seeds seemed somewhat confused. There were fewer bottles than varieties; not all of them were suitable for storage; and some appeared to have more moisture than recommended. This was the weakest part of the conservation system in Shivagunj. However, when checking the records of the community seed bank regarding seeds of the varieties distributed for conservation and sustainable use, we found a sophisticated, well-planned and maintained system of on-farm conservation that largely compensates for the weaknesses of the seed storage system, although a back-up would reduce the risk of losing varieties due to e.g. pests or diseases. All varieties kept by the association were grown each year in the rice diversity block and by farmers, and the records kept track of all movements in this regard. The records were written by hand and kept in fire-safe storage. However, with no computer available, there were no back-up facilities for the records. This constitutes a potential risk of losing important data, but has not yet constituted a problem.

### 3.1.2 Success story: local Kalonuniya rice

When the project started, members were invited to tell about local rice varieties they remembered and would like to see again. One such variety was the Kalonuniya rice, highly prized because of its high nutrition levels, aroma and good taste. Furthermore, it was easy to grow, needed no chemical fertilizer or pesticides, was robust to environmental challenges and did not require weeding (thus: less work). The plant grew some 1.2 meters tall, and the long straw was used for mats, roofs and, importantly, for animal fodder. This variety had been totally lost from the community. Together with LI-BIRD, members of the association explored surrounding villages and districts to find the cherished Kalonuniya variety. Finally, it was found more than 50 kilometres away, and 36 accessions of seeds were brought back to Shivagunj for multiplication, selection and further development. After years of research and development, the resultant two lines with the most

advantageous properties were provided to members of the association. Kalonuniya rice is now the most popular local rice variety in the whole district. In addition to the advantages mentioned above, it has a higher market price than improved varieties, so production is also advantageous in economic terms, despite yields slightly lower than with improved varieties. All in all, then, Kalonuniya illustrates how farmer and breeder collaboration can result in the reintroduction of lost varieties, adding value to these varieties for the benefit of farmers and consumers alike.

### 3.1.3 Seed production

Members of the association have received professional training in seed production, and produce high-quality seeds of open-pollinated improved varieties of rice and maize and the popular local Kalonuniya rice (which is also open-pollinated, as are all local rice varieties). Seed production fields are marked with signboards informing about the varieties grown, the growers, and more.

With open-pollinated varieties, seeds can be saved and used for the next season for generations of plants – in contrast to hybrids, which produce high yields only in the first one or two years. A quality insurance system safeguards seed-production quality, which is recognized among members, non-members and experts alike as very good, among the best seed available in the district. The price is affordable, and slightly lower for members.

Demand is growing rapidly – outstripping production by far, despite annual production increases, including a doubling in 2018. This constitutes a major challenge for the association. Storage facilities are becoming inadequate. Moreover, the system established to facilitate high-quality production is strained almost to the bursting point. Technical assistance is required on how to proceed in view of the constantly increasing demand.

For the 26 farmer members involved as seed producers, the production constitutes an important source of income, and a safe one at that: the association buys all the seed produced, at pre-determined rates, conditional on the seed meeting the quality standards. The association is able to provide purchase guarantees thanks to the establishment of the seed fund, which is used to buy the seed from member farmers. When

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the association sells their seed, the seed fund is replenished. As the price of sold seeds is higher than that of purchasing it from the farmer members, the seed fund keeps increasing, and can be used to buy more seeds next time. In this way the seed business is expanding, benefiting seed producers as well as customers in Jhapa.

However, due to the high demand for seed, more seed producers are required – and that also requires more training. At present, the association does not have access to such training. Another limiting factor is the storage facilities, which are becoming too small.

#### **3.1.4 The CBM fund and income-generating activities**

A very popular element of the work of the association is the Community Biodiversity Management fund (CBM fund), a revolving fund that provides micro-credits to members. These micro-credits are relatively small, and are to be paid back within 6 months to one year, with an additional interest rate of 12%. Priority is given to women and disadvantaged members. In the course of 2018, 120 farmers were granted micro-credits. Typical projects include pig farming, goat farming, fish farming (ponds), a breeding bull, poultry production, taro production and marketing, and a nursery for small vegetables from the association to be sold in the market. Together with the seed production, these activities provide substantial increases in income levels, *inter alia* enabling families to meet their household expenses, send their children to school and buy medicines.

#### **3.1.5 Diversity kits and introduction of more vegetables**

The association distributes diversity kits to its members at least once, and up to three times, a year. These kits are also sold to non-members, for a small fee. The kits contain seeds of around five varieties of mainly vegetables. Each time, new varieties are presented; farmers are expected to take seed of the varieties they get, and maintain them on-farm, if they wish to keep them. By continuing to present new varieties of vegetables this way, and by distributing tubers like taro and elephant-foot yam, diversity grows and engagement in vegetable production increases. This contributes to improved nutrition as well as income from the sales of surplus production.

#### **3.1.6 Use of organic methods**

Association members have received comprehensive training in organic methods of vegetable and rice production. They practise various forms of compost preparation, including manure compost, vermiculture, crop rotation, urine collection from livestock (through improved sheds) for use in the fields and as biopesticide (with important hygienic benefits for the farm as urine is no longer infesting the courtyards); and they produce their own bio-pesticides from herbs. Members stress that these methods have boosted vegetable production and are very useful for producing local varieties of rice. With the production of improved varieties of open-pollinated rice, chemical fertilizers are applied in limited amounts, in addition to organic input. In general, using organic methods has substantially reduced dependency on external input substantially and thus reduced the costs of food production while increasing yields. Organic methods are also applied by non-members who have seen them at the farms of members.

Other related activities include training in taro production, drying, packaging and marketing. Also, some groups have established participatory seed exchange, to enhance the diversity of vegetables.

#### **3.1.7 Institutional matters**

The executive committee was active, committed and well aware of its responsibilities. The association has one staff-member, with impressive expertise in systematization and keeping track of crops and developments. As the association's seed business and income-generating activities are growing fast, the capacity of this one person to ensure the storage system of the community seed bank is limited. A recommendation to the association is therefore to allocate financial resources from the two rapidly growing revolving funds (for income-generating projects and for seed purchase) to employ one more staff-member. That would enable further growth without reducing the quality of important functions of the association, and without over-stretching the capacity of the executive committee and staff.

#### **3.1.8 Messages to the Development Fund**

Association members in Shivagunj are grateful to LI-BIRD and the Development Fund for the support they have received. The benefits and impact are impressive (see below). However, they found it very challenging to be left totally on their own at the end

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of 2016, even though that had been well prepared. They are fully capable of running their organization and the core activities by themselves, but need technical backup on certain points, and more training to meet upcoming needs. Also, they wish to work on the diversity they have conserved, to explore whether there are more potentials for varieties like the Kalonuniya rice, and to prepare for the effects of climate change – some of which are already evident, such as stronger winds and disruptions in the timing of the seasons. Further, they wish to be informed about relevant new developments in agriculture that could be beneficial. Thus, they propose that some sort of system be set up to ensure backup and training for well-functioning associations like theirs.

Representatives of the two wards and the municipality committed themselves to provide support to the association from 2019, but indicated that this would be even more attractive if the DF and LI-BIRD could find a way to provide the necessary backup, training and communication. Further, representatives from the municipality would like to see more associations developed in other areas, seeing this as a very promising and self-sustaining approach to sustainable development.

LI-BIRD is regarded as a guardian. In particular, the Vice Chair wished to thank LI-BIRD for its excellent support. They will continue to follow up on what LI-BIRD has brought them.

### 3.2 Biodiversity Conservation Committee at Purkot, in Bhanu Municipality, Tanahun District

Purkot, located in the mid-hills of central Nepal, is characterized by relatively steep hills, often with forest cover and with small farming fields on the hillsides and in the valleys. Elevations range from 404 to 1080 meters above sea level. However, sizeable fields that offer good soil, light and fresh air are rare. The diversity of agroecological zones provides a foundation for the diversity of food crops found in this area. There is limited irrigation, so most rice fields are rainfed. Tanahun is generally poorer than Jhapa. Young people tend to move to cities or abroad when possible, and an increasing share of agricultural land is left fallow. As a result, genetic erosion is proceeding rapidly. The name 'Purkot' stems from a local buffalo breed, 'Parkote', still maintained in the area but declining in numbers. Purkot was the name of the

Village Development Committee which covered nine small wards. Following the nationwide administrative reform in 2015, Purkot was merged into Bhanu Municipality and divided in two larger wards, Ward 8 and Ward 9, but with no Village Development Committee. The association is active in both wards, and shares office building with Ward 9.

As in Jhapa, members of the evaluation team were impressed by what we found in Tanahun. A professional executive committee presented their work and achievements, in a well-structured Power-Point Presentation. Our visits to the community seed bank, diversity blocks, several farms as well as interviews confirmed the impression of a highly well-functioning association. 111 varieties of local crops were maintained in the community seed bank, closely following established procedures, and were grown in the diversity blocks as well as in members' fields. These crops were grown for conservation purposes as well as for home consumption, including eight varieties of local rice and a rich diversity of other food crops.

Seed security with regard to these crops and self-sufficiency in vegetables are important achievements, bringing improved food security, nutrition and income. Production has been further boosted by training in advanced organic methods. Another important achievement is seed production of open-pollinated improved varieties of rice, facilitated through the steadily growing seed fund.

Involvement in breeding the local *Khari* (hill) goat has boosted the economy of many members and established Purkot as a centre of *Khari* goat production in the district. This has been possible through micro-credits from the local Community Biodiversity Fund, which has benefited women and disadvantaged groups in particular. Also in Purkot we heard accounts from farmers, members and non-members, about how the association has transformed their lives, and benefited the community as well as neighbouring ones. There were also some weaknesses and challenges (see below), but they do not affect the overall impression of a successful Biodiversity Conservation Committee.

The executive committee stated that in economic terms, they were doing better than ever, and much better than when LI-BIRD was there. Again, this was made possible through the solid foundation laid

through the eight years of programme involvement by LI-BIRD/DF, and some backup along the way after

2016, in addition to small funds from wards and the municipality.

## **BOX 2: BASIC FACTS ABOUT Biodiversity Conservation Committee, Purkot, Tanahun**

**First organized conservation activities:** In 2005, the District Agriculture Development Office of Tanahun initiated the community bio-diversity register and organized a diversity fair.

**Association founded** in 2008, with the support of LI-BIRD/DF.

**Supported** by LI-BIRD/DF 2008–2016; thereafter, limited funding from the ward and the municipality. In 2017, the municipality provided NPR 150,000 for fencing of the new storage facility for the CSB. In 2018, they provided NPR 100,000. In 2018, the wards provided NPR 50,000 each; in 2017, one of them provided NPR 50,000. This is all for the diversity block.

**Community Seed Bank:** Established in 2011 in cooperation with Purkot Village Development Committee. After the disastrous earthquake in 2015, the CSB, together with two other CSBs, contributed altogether 9 tonnes of seed worth NPR 400,000 to 1613 households, with support from LI-BIRD/DF. A new earthquake-proof building was provided by the District Agriculture Development Office of Tanahun, with support from DFID. In 2014, seeds of 106 crop varieties were sent to the National Gene Bank for *ex situ* conservation.

**Registered** as a local NGO in 2014.

**Organized** with an executive committee and 22 village-level groups, whereof 11 are officially registered. The general assembly is the highest decision body. Two staff members.

**Members:** 1040 households (approx. 20% of all households in the area) with one representative from each household: 749 women and 291 men.

**Crop varieties conserved:** 111 local varieties, whereof 36 varieties of nine cereal species; 30 varieties of eight pulse/legume species; ten varieties of three root-crop species; fifteen varieties of eighteen cucurbit species; four other vegetable varieties; nine varieties of four oil seed species; eight varieties of four spice species.

**Seeds production for distribution:** A total of 9 tonnes of seed were sold in 2018. They were sold for NPR 0.5 million, of which 150,000 is net profit that reverts to the Seed Fund and is partially used to cover staff salaries and other operating expenses. The seed was sold at a 50% price reduction; with the municipality supplying the other 50% as a subsidy. A substantial increase in seed production was experienced in 2018, made possible by increased support to the Seed Fund (see below).

**Seed Fund for purchase of seed for marketing purposes:** LI-BIRD/DF contributed NPR 300,000 to the Seed Fund, which has increased to NPR 600,000 as of October 2018. The municipality provided NPR 200,000 for the Seed Fund in 2017.

**CBM Fund for income-generating activities:** A revolving community biodiversity fund for income-generating micro-credits started out with NPR 70,000 provided by LI-BIRD/DF in 2009, later receiving another NPR 700,000–800,000 from LI-BIRD/DF and NPR 500,000 from the District Livestock Service Office. NPR 100,000 from seed sales were also added to the Fund. By October 2018, the CBM Fund had reached NPR 2 million, whereof members have contributed more than NPR 500,000 through the 12% interest rate paid by the borrowers. 244 members were granted micro-credits in 2018 (194 women and 50 men; 30 Dalits, 105 indigenous people and 109 Brahmin/Chhetri).

**Value increase:** LI-BIRD/DF invested altogether approx. NPR 1.1 million in these two funds. With the value increase by members and the revenues from seed sales, as well as support from the local authorities, the total amount had increased to ca. NPR 2.6 million as of October 2018. This figure does not include the resources taken from the funds to finance staff and running costs of the association.

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### 3.2.1 Conservation work

The community seed bank was very well kept. All accessions were stored and regenerated according to the procedures and an annual plan. Records documented the seed transactions for conservation as well as distribution in an orderly and transparent way. As in Jhapa, they were filled in by hand, and there is no back-up. This makes the system vulnerable but has not constituted a problem so far.

However, the rice diversity block was located in a field poorly suited for the purpose, far down in a valley with less sunlight and fresh air than further up. Moreover, there was conventional rice production close by on all sides. As chemical fertilizers and pesticides are normally used for high-yielding rice production, the local varieties are probably exposed as well. Even more serious was the fact that the surrounding fields had been infested with rice borers, destroying the crops. The rice diversity block was not yet affected, but infestation was expected to come. This was the first time that this location was used for the rice diversity block; we were told that it would also be the last.

The diversity block for other crops was located uphill in an area far more suitable in terms of soil, light and air. Here an impressive diversity of crops was thriving – taro, finger millet, turmeric, sesame, yam, cow pea, nigerseed, sorghum and more. The greatest problem was monkeys, which could destroy crops. However, the owner of the field lived across the road and took care to chase them away whenever she saw them. We could see no serious damage when visiting the diversity block.

The diversity kept and used by the members was impressive, with 111 local varieties of species such as rice, maize, finger millet, barley, buckwheat, proso millet, foxtail millet, sorghum, the Nepali cereal 'sama', beans, cowpea, rice bean, soybean, pigeon pea, broad bean, pea, horse gram, taro, yam, elephant-foot yam, pumpkin, sponge gourd, bottle gourd, snake gourd, ash gourd, cucumber, ridge gourd, bitter melon, okra, broadleaf mustard, sesame, nigerseed, linseed/flaxseed, mustard/rape seed, yellow mustard, perilla, ginger, turmeric, chili and dill seed.

A well prepared plan was set up to ensure that all 111 local varieties are grown by members each year, and that seed is brought back to the CSB.

Much of the diversity is in active use among members and in the community. However, it seems that little is done to continue to expand this diversity. Several species commonly used in Nepal were not represented in the seed bank, or as tubers. Furthermore, there were no fruits/berries; the availability of fruits/berries in the area seems to be limited. Here there is scope for improvement; likewise regarding the diversity conserved with a view to potentials for breeding through e.g. varietal selection. Members of the association expressed the wish to engage in such work, in order to further develop the diversity they have and make local varieties more attractive. Chamnarayan Shrestha, former Purkot Village Development Committee Secretary, said that they had so far focused on preserving local varieties as seed, and recommended involving them in a larger production scheme (interview 6 October 2018).

### 3.2.2 The success story of Khari goats

A notable feature of conservation work in Purkot has been the engagement in *Khari* (hill) goats. Through micro-credits, members have been able to invest in Khari goats as well as goat sheds, constructed so as to save labour and make production more efficient. The Khari goat is very productive, lambing three times in two years, with twins or triplets each time. The meat is very tasty and demand is high. When a member sells two mature goats, this brings in approx. NPR 26,000. This has greatly enhanced the income situation of the involved members; the community is now not only self-sufficient in goat meat, but is also selling outside the community. People come from afar to buy, and the village has become a resource centre for the Khari goat, due to the support from LI-BIRD/DF. Training in Khari goat rearing and improved goat sheds have greatly contributed to the success, boosting production while reducing the workload involved.

### 3.2.3 Seed production

An important activity of the association is seed production for distribution/sale, which ensures that farmers receive the seed they want and that seed producers can be sure of selling their produce at prior agreed terms. Seed production is central to seed security among members, and does to some extent also reach non-members. It represents an important contribution to the local livelihoods. Major efforts have been made to increase seed sales, made possible not least through municipal

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support to the Seed Fund. The plan is to produce 25 tonnes of seed of 116 specified varieties of 42 species, covering all diversity in the community seed bank, with different quantities according to demand. 100 members are involved in seed production, some of them thanks to micro-credits from the CBM fund.

Seed production was particularly important after the devastating earthquake of 2015, when the association, supported by LI-BIRD and working together with other two CSBs, was able to ensure seed supply to 1613 households (see boxed text above). This in turn resulted in support from the municipality (from DFID) for the construction of a new earthquake-proof storage building for the CSB.

### 3.2.4 The CBM fund and income-generating activities

The Community Biodiversity Management Fund is expanding rapidly due to the 12% interest rate and loans being provided two times a year, greatly improving the income situation among members. In addition to Khari goats and vegetable or seed production being targeted, there is pig rearing. A sow gives birth three times a year, with average litters of ten. As the price per piglet is NPR 4000, this means around NPR 120,000 for a pig-rearing household. Some members tried bee-keeping but without success, due to insufficient fodder in the area, they believe. However, mushroom farming has been very successful. Women and disadvantaged people are an important target group for micro-credits. Members of disadvantaged groups such as Dalits receive loans on favourable conditions.

Thus far in the history of the Purkot CBM fund, there have been only two cases of misuse of funds. One involved a man who had borrowed an amount and then disappeared. Another was a loan to a group that had difficulties agreeing on how to return the money. Only people who repay their loans will get new loans, and this, together with social norms of the groups, ensures that the CBM fund works well.

### 3.2.5 Use of organic methods

The introduction of advanced organic methods has been a great success and has boosted vegetable and other crop production. Especially important here have been composting techniques and the production of biopesticides. Also successful is cattle-shed improvement, enabling urine to be collected, for use as biopesticide as well as fertilizer.

Saving the urine this way also contributes to better farm hygiene, as the urine (and to some extent the manure) does not spread over the courtyard. This in turn helps to improving the health of children in particular, as they use the farm courtyards as playgrounds. So far 105 cattle sheds have been improved this way in Purkot.

### 3.2.6 Institutional matters

The executive committee was highly competent and committed to its work. However, they also suffered from overwork. As activities are increasing rapidly, more work is needed to oversee everything – *inter alia*, conservation activities, the quality of seed production and the use of the micro-credits. Two staff members are not sufficient due to the growth in activity. Funds for administrative work are kept limited; now even tea breaks have been deleted from the budget. Technical backup seems needed, to help the executive committee to get the required resources from the funds they operate when they cannot obtain them from public sources.

### 3.2.7 Messages to the Development Fund

The executive committee is self-sufficient in economic and administrative terms, but they struggle to get the resources required to oversee the work of the association. Although they do not wish LI-BIRD/DF to return and take charge of core functions, they appreciate technical backup and would like to have access to more training. They wish to continue on the development path they started and learn more, to make better use of their resources and continue developing their work.

Chamnarayan Shrestha, the previous Purkot VDC Secretary, expresses his sincere thanks to the Development Fund for the support to the association (interview 6 October 2018). Many NGOs engage in the region and set up projects, he explained, but when they leave, the projects fall apart, and they don't seem to care. By contrast, the Development Fund sends an evaluator two years after they have stopped funding. That shows how they care, he concluded.

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## 4. General relevance of the findings

In this chapter, we will address the general relevance of the findings for the remaining sites in Nepal and in South Asia. We start out with the programme sites with similar characteristics in Nepal, where the findings are assumed to be relevant. We then describe diverging sites in Nepal in further detail, including both LI-BIRD and DADO managed sites. Lessons are derived from the findings. Finally we briefly discuss relevance of the findings for the sites in India, Bangladesh and Sri Lanka and discuss experiences from the regional approach.

### 4.1. General relevance to project sites in Nepal with similar characteristics

From information gathered from the other project sites, there are good reasons to assume that the findings from the two project sites visited have relevance for the five other project sites that made substantial progress during the programme period. This is elaborated here, drawing on information provided by Pitambar Shrestha, leader of the CBM-SA programme from LI-BIRD.

#### 4.1.1 Agyauli in Nawalparasi District

In Agyauli, Nawalparasi District, the situation is similar to that of Shivagunj in terms of agro-ecological conditions, crop genetic diversity and socio-economic characteristics, as well as number of members (slightly lower, around 800), membership percentage in the community (the same, around 20%) and activities carried out. There is one major exception: in Agyauli there has been no participatory plant breeding or varietal selection. Otherwise, they have a similar story as with the Kalonuniya rice in Jhapa: they have the local *Ghipuri* rice, obtained from another CSB. It is very popular: aromatic, early maturing, suitable for the environment, and stress-tolerant. The CSB is more advanced than the one in Shivagunj. As for organic methods, vermiculture was never accepted, but the other methods are in use. Many trainings are conducted here, as it is used as a resource and demonstration site. There is also a meeting facility with considerable capacity, and many LI-BIRD meetings are held here. The organization has remained strong and well-

functioning; all activities that were started are continuing. It collaborates with local authorities and receives some support. The staff maintains good communication with LI-BIRD about their activities and results. The committee is led by a woman. It is reasonable to assume that the findings from Jhapa and Tanahun have relevance here as well.

#### 4.1.2 Rampur in Dang District

In Rampur, Dang District, there are similarities both with Shivagunj in Jhapa and Purkot in Tanahun. Rampur is in the inner Terai, in a valley at the foot of the hills, south of Pokhara in southwestern Nepal. It is a dry, drought-prone area without many facilities. There is no irrigation. In all, 760 households are involved, and the activities are more or less the same as in Jhapa. Also here we find a story similar to the Kalonuniya experience: the *Tilki* rice variety has been developed through participatory selection breeding, following the same process as for Kalonuniya in Jhapa. In addition, local poultry-farming promotion activities have been conducted in collaboration with the District Livestock Service Office (DLSO). In terms of organization, the association has basically the same structure as in Jhapa. However, the legal framework is different, as the association is organized as a cooperative aimed at promoting business. Interestingly, the CSB works with the extension services, and have enjoyed good cooperation since the beginning. Leadership in the organization is good. The extension services purchase seed from the CSB, providing support, financial and technical, as well as sourcing seed of improved varieties for seed production. There is considerable demand for the seed produced by the CSB, and there is also collaboration with private seed enterprises. All other activities are generally the same as elsewhere; a few farmers also practice vermiculture. Vegetable production has expanded greatly, with substantial benefits, in some cases enabling the expansion of agricultural land. The committee consists entirely of women, and all groups and activities are functional. The association receives some public funding. It is reasonable to assume that the findings from Jhapa and Tanahun have relevance for Rampur.

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#### 4.1.3 Ghanteschwor in Doti District

In Ghanteschwor, Doti District, the situation is similar to that of the others, except for the height factor: this is a western hill district with elevations ranging from 1,500 to 2,000 metres above sea level. It has many features in common with other well-functioning sites, and mostly the same activities. The membership is lower, around 300, approximately 30% of the households in the community. A special feature is the good connection with the head office of the Anamolbiu Seed Company, which was initiated by LI-BIRD. The CSB produce vegetable seed for Anamolbiu Seed Company of many species. Turnover is much higher than for any other CSBs. Volumes are low since this is vegetable seed, but prices are quite high. Whereas the organization has features similar to the others, it is legally organized as a cooperative, as in Rampur, Dang District. Also, non-members are involved in producing seed, who then benefit from the CSB. The reason is that the CSB had to go beyond its membership to get enough qualified seed producers and sufficient quantities of seed. As to crops, they are engaged in producing seed of a potato variety from the UK that was introduced for late-blight tolerance by the Anamolbiu Seed Company. The CSB maintains good cooperation with the extension services office and receives support from them. They have three small buildings for different seed/uses and are expanding. It is reasonable to assume that our findings from Jhapa and Tanahun have relevance for Ghanteschwor.

#### 4.1.4 Kachorwa in Bara District and Begnas in Kaski District – resource sites

The two resource sites Kachorwa in Bara District and Begnas in Kaski District were phased out early, having already received support over a longer period as part of the In-Situ Project (see 3.1). The CSB in Bara, in the Terai, is an important resource site for very many CSBs. It has 87 local rice varieties and a few other crops, a comprehensive diversity block (since 2003) and is generally doing better than the case in Jhapa. There are fewer members (around 400), but with a high level of ownership. This CSB is very focused on conservation; there is also a rice variety which was developed using a local variety as a parent, by a somewhat different method than for Kalonuniya rice in Jhapa: this is *Kachorwa-4*, named after the village. It is very popular, and the farmers continue selling and distributing seeds. There is little value addition going on in Bara, unlike the case in Kaski. Here there is large-scale production of the

local *Jethobudho* rice variety, providing substantial revenues. Being located closer to the city of Pokhara and LI-BIRD Headquarters, Begnas was in a better position to receive both technical and financial support. Generally, activities in Bara and Begnas resemble those at the other sites described above. At both sites, there have been successful organizational changes, and funding has been received from other sources. However, the PPB group in Begnas needs some support, due to an ageing membership and leadership. Nevertheless, it is reasonable to assume that the findings from Jhapa and Tanahun have relevance also for Kachorwa in Bara District and Begnas in Kaski District.

#### 4.2 LI-BIRD supported project sites in Nepal for which the findings are not relevant

Three programme sites were quite different from the ones described so far in this evaluation, and our findings from the two project sites visited are not relevant for these programme sites. What the three sites have in common is that they were not as successful as the other sites. Since also this is of great interest for an evaluation focused on learning, a summary of experiences is provided here. Again, this presentation is based on information provided by Pitambar Shrestha, leader of the CBM-SA programme from LI-BIRD.

##### 4.2.1 Talium in Jumla District

The association in Talium in Jumla District, situated in the high hills of northwestern Nepal, must be declared a project failure. Very few activities were carried out, even though the executive committee met every month and managed to establish a small CBM fund. Motivation was low, perhaps spurred by the unfortunate circumstance that their CSB was destroyed due to heavy rain, and was also robbed. After that, no seed transactions took place. Further factors that may explain the failure:

- The on-site LI-BIRD team member was probably not sufficiently competent or committed.
- Staff from LI-BIRD headquarters could not follow up easily, as it takes 2–7 days to travel one way.
- The local culture is more individualistic, and people may not have been so motivated for working together.
- Genetic erosion is not seen as a big problem, as this is an area that has not yet been exposed to high-yielding varieties.

- Probably the interest in the project among the locals was not particularly high.
- Perhaps there were also inter-cultural issues in the communication between LI-BIRD staff and locals, as there is generally some scepticism to 'outsiders' among locals in Jumla, as locals feel that 'outsiders' do not always understand their particular situation and needs.

#### 4.2.2 Ratanchura in Sindhuli District

Ratanchura in Sindhuli District is situated in the eastern mid-hills of Nepal, an area known for its citrus diversity. The association was engaged in all CBM activities except for establishing a CSB – the latter mainly due to poor progress in developing a strong farmers' organization. LI-BIRD dropped this site in 2014, as progress was not as expected and LI-BIRD and DF had decided to consolidate activities in fewer sites while covering more beneficiaries. Nevertheless, the association has one unique feature: a citrus diversity block in a school complex, although it was not managed properly. There was a plan to teach children how to maintain and conserve citrus diversity. The area is also famous for Akabare chili, a native Nepali variety, very popular because of its properties. It gives high yields, reduces stomach gas, and is very spicy, but without irritating the stomach. The association had started working on value addition to Akabare chili by making pickles, but it is not clear whether any activities have continued. Ratanchura is one of the weakest sites in the programme. Possible reasons for the lack of success include:

- Staff members were new, with little experience from LI-BIRD, and turnover was high.
- Staff may not have had sufficient capacity to carry out the planned activities.
- They probably did not receive sufficient back-up from LI-BIRD headquarters, due to long travel distances.

#### 4.2.3 Kunjo in Mustang District

Kunjo in Mustang District is located high in the foothills of the Annapurnas, and with limited rainfall (in the Himalayan rainshadow). It is a small community of around 150 households. A special feature of the project was the repatriation of barley. Around 400 accessions of barley were provided from ICARDA. Through participatory selection, a few lines were selected for further work. However, the site was dropped in 2014, due to slow progress, and the seeds of the selected lines were provided to

the project site at Jumla to continue further work. Also, in Kunjo, there was no CSB. Only small funds were provided for the CBM fund. The vermiculture method was not adopted in Kunjo, other organic methods were present. There were trainings and exposure visits. What was successful at Kunjo was the production of vegetables in protective plastic 'tunnels'. This increased the availability of vegetables for local households as well as the income from the sales of vegetables. Possible reasons why there was little progress with regard to community biodiversity management include:

- Commitment among the members and staff was low.
- The community belong to the Thakali ethnic group, with some Dalit households. Thakalis considers Dalits as servants, which made it difficult for them to be in the same group. Thakali people are individualistic, making groupwork difficult. Historically, the Thakali ethnic group is known for trading and business, not farming.
- Diversity in the area is comprehensive and not endangered. The target groups might not have felt it important to conserve local diversity.
- The site was distant and difficult to reach. Staff from LI-BIRD headquarters were not able to go there often.
- Local staff did not function well; people did not really do what was expected of them in order to develop the programme at this site.
- Perhaps there were also inter-cultural issues in the communication between LI-BIRD staff and locals, as there is also some scepticism to 'outsiders' among the Thakalis, as they feel that 'outsiders' do not always understand their particular situation and needs.

From these experiences we may note the following precondition for successful CBM projects:

- There must be a conservation need, i.e. due to genetic erosion and endangered plant genetic resources for food and agriculture (PGRFA).
- There needs to be a certain level of collective attitude in the target group.
- There must be capacity and ability among local staff to adapt to new approaches and to communicate in inter-cultural settings.
- Sufficient backup from LI-BIRD headquarters is essential. Remote areas with long travel distances must be considered in the light of this requirement.

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### 4.3 DADO sites in Nepal for which the findings are not relevant

The District Agricultural Development Offices (DADOs) were partners in the CBM programme in ten districts and shared the approach. This was in itself an achievement. The idea was to engage the DADOs in the scaling up of the best practices of CBM. The DADO sites were however organized differently and cannot be compared with the LI-BIRD sites. Thus, the findings from the two case studies are not relevant for the DADO sites. Since this was the first effort to scale-up the CBM-approach through the extension service system, experiences and lessons are valuable. Thus, a summary of key experiences and lessons are provided here, based on interviews with previous DADO staff and with LI-BIRD staff.

#### 4.3.1 Difficult framework conditions

An important characteristic of the DADO sites is that they received much lower financial resources through the programme, as the idea was to leverage DADO funding. Some DADOs added some resources, and some did not. This is considered a major reason for lack of success: The capacity of the officers in charge was severely constrained, and there was general lack of resources. Nevertheless, motivation was high: many officials had participated in trainings and exposure visits to resource sites and were deeply committed to the idea. A complicating factor was the frequent turnover of DADO staff. The DADOs were simply not in a position to take the expected responsibility in the project.

Thus, DADO officials found it difficult at the annual meetings of the programme with LI-BIRD where they were to report on achievements. They felt doomed to fail, as compared to LI-BIRD. The organization of parallel processes was unfortunate, although some learning took place between DADO and LI-BIRD sites.

#### 4.3.2 Experiences from Jhapa and Kaski

In Jhapa, the main objective of the DADO effort was to increase awareness and scale up some good practices of agrobiodiversity. This began with the Community Biodiversity Register. In the wards, various trainings and income-generating activities were started, such as vegetable production, mushroom production and bee-keeping. There was also a diversity block. And there were exposure visits from ward to ward. This continued for only about

three years, however. Then support from LI-BIRD was discontinued, due to reduced funding from the DF. Some groups are still functional, however. Five groups out of nine, with around 150 members, are working mainly on income-generating projects, and do not have a biodiversity focus.

At the DADO site in Kaski District there was a community biodiversity register that had been validated by the stakeholder groups and published in a book. They started a CBM fund and a diversity block, with emphasis on beans and taro. Diversity kits were distributed, and local crop diversity was shared in the community. Everything was grown organically, with no external input, based on locally available resources. Biopesticides were produced and applied. All this was done from own funds, and the funds made available through LI-BIRD.

#### 4.3.3 Impacts from the DADO-part of the programme

The impacts of the programme for the DADO sites were less use of chemical fertilizers and pesticides, conservation of local varieties halting biodiversity loss, production of local varieties, higher crop yields due to improved methods, greater awareness of these matters, better incomes and increased vegetable production for those involved.

Also, at least 35 to 50 extension service officers were trained in the first phase of the CBM-project. That represents an important potential for the future, as many of them are still working in the extension services system or other positions within the agricultural authorities, and may continue their commitment to continue working for the management of crop genetic diversity.

Previous DADO officers consulted in connection with this evaluation stated that they are still committed to the objectives of the programme, and intend to follow up in their future positions after the recent administrative reform in Nepal. Policies, strategies and plans at various governance levels are more conducive now than previously, making it easier to embark on agrobiodiversity activities. One former DADO officer (Manahar Kadariya, interviewed 9 October 2018) highlighted the municipality plan for the Begnas area, 'Biodiversity Management Programme, Begnas, 2018', which has an estimated budget of ca NPR 700,000 for fiscal year 2018/2019 and is aimed at:

- collection and conservation, production, utilization and processing of local varieties of crops;
- documentation of indigenous and traditional knowledge;
- promotion of climate- and environment-friendly agricultural practices.

It would not be correct to say that agrobiodiversity has been mainstreamed in the policy at local level, but there is a focus on agrobiodiversity in certain areas/clusters, and it is an important component of the overall agricultural policy. As such it is institutionalised, and Mr Kadariya plans to use the Begnas programme as leverage for his future activities.

Another important impact of the programme is a circular distributed by the national government to all DADO offices in the country some five years ago, explained Mr Kadariya. The circular provided for DADOs to include a component on agrobiodiversity management in their regular programmes. Specifically, there were four components to be integrated in the DADO programmes – and agrobiodiversity management was one of them.

#### 4.3.4 Some of the lessons learned from the DADO experiences

The DADO typically had two staff members in the area, with responsibility for much more than just this programme. Ideally, they should cover all extension service activities related to agriculture, as set up in their regular DADO plan. LI-BIRD had two staff members with exclusive responsibility for the CBM programme, where there were generally fewer resources for DADO activities. This made for a very difficult situation, and was the reason why this parallel approach could not work.

Important factors that could have reduced the risks involved in phasing out the support include:

- There should have been staff specifically designated for the programme to coordinate activities, with no other duties
- The groups should have met regularly, and they should have had technical backup
- Support for the CBM funds should have been more comprehensive, to give a better start.
- More focus on the value chain for local varieties was needed to get access to the market.

For the groups that are still active, staffing is the

major problem: there is no staff.

If there should be a new programme, it would be important to share the funds and work together, not in a parallel structure as before, according to a former DADO officer (Manahar Kadariya, interviewed 9 October 2018). If the programme were managed correctly, and with clear guidelines, it would be possible for the extension service to take ownership of the programme for many, many years. What is needed is to cover incremental costs and then to reduce this support to zero over time. If they see good results, the municipality will invest. Indeed, he added, they may also take the programme to further areas, if it succeeds. The political environment for doing so is highly promising at present, as further elaborated in the next chapter.

## 4.4 Some lessons from the programme's South Asia approach

The findings from Nepal have very limited general relevance for the other partner countries of CBM-SA. Conditions are very different in India, Bangladesh and Sri Lanka, and the approaches of the organizations involved have also been different. Some general information on partner organisations and achievements was provided in the introduction. In connection with this evaluation consultancy, it was not possible to assess the relevance, impact and sustainability of efforts in the other South Asian countries. Based on information gathered from LI-BIRD, a brief overview is provided here, as to the most important lessons to learn from the somewhat limited results of the programme in the other South Asian countries. This is based solely on information from LI-BIRD. Further studies in the three countries would be required to fill out this picture.

### 4.4.1 Partners and expectations

LI-BIRD selected partners that were already fairly well established with their own approaches to CBM. There was, however, a mismatch between them having their own approaches, and the idea behind the project, which was to export the CBM-Nepal model to the other organizations. There proved to be limited interest in that within the organizations selected. This might be an important reason why there was not more progress in India, Bangladesh and Sri Lanka.

Since exporting the model was the objective, then

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other partners should probably have been selected, making sure that they were really interested in adopting this model and adapting it to the specific conditions in their working areas. There were good reasons to seek to export the model to other countries in the region, as it was already successful in Nepal at the time and there were good reasons to believe that such a model could achieve success also in other countries, improving seed and food security and livelihoods among farming communities.

If collaboration with other NGOs experienced in agrobiodiversity management was the intention, then certain overall objectives could have been established which would apply to all, allowing the differing approaches to flourish, in turn facilitating exchanges about the results and conditions for success. This could have enabled learning across borders and would probably have motivated the partners that had been selected to engage themselves more in the programme.

#### 4.4.2 Experience, capacity and financial resources

When engaging in this regional approach, LI-BIRD did not have sufficient experience from work in the other countries. Thus, they could not envisage the many challenges that occurred. Lack of experience was a limiting factor. It also proved challenging to obtain resources for regional coordination. This was a conundrum for LI-BIRD, as it lacked the capacity and human resources for sufficient coordination. The financial resources available were inadequate for doing this job properly.

Even though LI-BIRD took the initiative to develop this programme, the organization did not envisage the comprehensive tasks which awaited, and which drew attention away from Nepal. The regional approach with LI-BIRD in the drivers' seat reduced the capacity of LI-BIRD to produce results in Nepal. When the organization dropped the approach and consolidated its work, limiting it to Nepal, it achieved much more, in terms of number of beneficiaries. It was too ambitious for LI-BIRD to take on the role as regional coordinator at the stage it was in developing the CBM approach.

#### 4.4.3 Prospects for a regional approach

It would probably have been better if the regional programme had been facilitated from DF in Norway, leaving LI-BIRD with the capacity it needed to develop the CBM model in Nepal and to sharing

their experiences with other countries as well as learning from other countries. Coordinating partners and facilitating exchange among them is one of the central DF advantages, and the organization could further develop these advantages e.g. with a view to coordination in South Asia. Such a programme would have implementing partners in the different countries, and DF would coordinate them to facilitate sharing of experiences, joint learning and collaboration where relevant. Such a facilitation could have as a medium-term target to enable the partner organizations to coordinate their activities among themselves, but that should not be the starting point.

As the information for this part of the evaluation is limited, we will not include the other South Asian countries involved in the CBM-SA programme in the analysis of relevance, impact and sustainability or the conclusions and recommendations below. For further assessments of these aspects in those countries, field studies will be required.

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## 5. Relevance of the CBM programme in Nepal

The Community-based Biodiversity Management Programme in Nepal has been highly relevant to the needs of the target groups as well as to the national policies, strategies and plans (to which it has also contributed) and to Nepal's commitments to international agreements and goals, including the International Treaty on Plant Genetic Resources for Food and Agriculture, the Convention on Biological Diversity and the UN Sustainable Development Goals. These points are further elaborated here, followed by a discussion of the specific relevance of the programme to agrobiodiversity conservation and farmers' seed systems, and an assessment of the continued validity of the programme objectives.

### 5.1 Relevance to target groups

The target groups of the programme are small-scale farmers, in particular women and members of disadvantaged groups. The programme clearly responded to their needs.

#### 5.1.1 Relevance to small-scale farmers

For small-scale farmers, the most important challenges, as confirmed through our interviews, are seed security, food/nutrition security and improved livelihoods.

*Seed security:* The programme has reintroduced a substantial number of crop varieties that were lost to the communities but wanted by the farmers, and has conserved seed of crop varieties endangered by genetic erosion. It has made the seed of these varieties available to the target groups – members of the associations as well as non-members in the municipality and to some extent in neighbouring municipalities. It has also ensured access to affordable high-quality seed of open-pollinated improved high-yielding varieties according to demand among target groups. The programme has ensured seed security for the target groups in the two project sites visited. From the discussion above, there is good reason to assume that the same is the case in the five other sites deemed to have successfully participated in the programme. The associations established by the programme at these sites are continuing the good

work and are expanding seed production.

At two LI-BIRD sites, the programme was phased out before the originally agreed term. One factor behind the lack of progress that led to the phasing out (see also above) was that there was not such a perceived need for conservation activities in these sites, according to the target groups. They did not feel that local agrobiodiversity was threatened, and they had their own local systems for seed saving, with which they were satisfied. They felt seed-secure.

Seed security is of particular importance with regard to earthquakes, and the contribution of the agrobiodiversity programme after the magnitude earthquake in 2015, as explained above, shows how CSBs can contribute substantially to seed security in such disastrous situations.

*Food/nutrition security:* Seed security is an important component of food/nutrition security. The programme has (re-) introduced crop varieties that contribute to food security, to better nutrition in particular. Previously there was heavy dependency on seed from large-scale companies, often hybrid seed requiring expensive inputs like chemical fertilizers and pesticides. Now, the associations produce well recognized high-quality seed of local and improved open-pollinated varieties themselves, for sale to members and non-members alike. The dependency on hybrid varieties has been removed, and the need to borrow from money lenders at high interest rates is also reduced to almost zero. By introducing organic methods that boost vegetable production and improve rice and maize production (leaving the choice of methods to the farmers, who often apply a mix of methods, including limited quantities of chemical fertilizers for improved varieties), the availability of nutritious food has been significantly increased. Interviewees also emphasized their appreciation of having food for home consumption that has not been exposed to chemical pesticides and for not having to deal with such pesticides during production. By making seed available at affordable prices, reducing the need for

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external input and introducing income-generating activities (see below), the general economic situation among the households targeted by the Community-Based Agrobiodiversity Programme has improved, and this in turn has significantly improved local food security. In some programme sites, improved livestock rearing has brought greater self-sufficiency in meat, which also contributes to food security and livelihoods. In this context, making local varieties of rice available once again has improved the fodder situation, as the straw from local varieties is preferred fodder for livestock. There is general recognition that the organic methods applied are beneficial for the soil: structure, texture, soil biodiversity and water-storing capacity. Interviewees emphasized how they appreciated agricultural methods that help to maintain the soil for the future, as well as maintaining crop varieties, in order to safeguard food security for coming generations.

The Community-Based Agrobiodiversity Programme has thus ensured food/nutrition security for the target groups in the two project sites visited, as described here. Based on the discussion above, we have good reason to assume that the same is the case in the five other sites that successfully participated in the programme. The associations established by the programme at these sites continue the good work.

*Improved livelihoods:* In addition to the improved livelihoods made possible through the measures described under seed- and food/nutrition security above, the Community Biodiversity Funds (CBM funds) in each project site are important tools for improving the livelihoods of the target groups. Through these funds, all members who can present a viable project are eligible to receive micro-credits to establish an income-generating activity (within the limits of the fund). The organization of the fund safeguards monitoring of such projects, which often prove successful, contributing to substantial improvements of the livelihoods. Figures presented to the project team indicate that most, if not all, members who wanted have benefitted from this possibility over the years, many of them several times.

#### 5.1.2 Relevance to women

The most important needs, as confirmed by female interviewees, to which the programme has contributed are (1) income which women can

have at their own disposal, (2) the possibility to get out of the home and take part in a group (group affiliation), (3) capacity building through trainings and demonstration visits and (4) the resultant self-esteem and empowerment. We found that women in the two highlighted project sites enjoyed these advantages, and there is good reason to assume that the same is the case in the five other project sites that successfully participated in the programme.

Another aspect that was also discussed was the challenge of combining the domestic workload with meetings and activities outside the home. The women interviewed confirmed that this was a challenge, but added that they could solve it by doing more work before and after the meetings/activities; in some cases, other members of the households would help out. Importantly, the husbands and families needed to see ‘something in it for them’, to accept women’s participation in meetings and activities outside the home. Thus, it was important that the meetings/trainings/activities contributed to increased income or better nutrition. The women we interviewed said that their participation in the association was of outmost importance to them: it had improved their lives profoundly, and thus the increased work burden was something they were willing to accept.

#### 5.1.3 Relevance to disadvantaged people

Disadvantaged people, such as Dalits and indigenous peoples, face complex challenges. Access to land and inclusion in society are among the most important needs, in addition to the needs addressed above. The Community-based Agrobiodiversity Programme has contributed by inviting disadvantaged people into the associations and earmarking micro-credits for such groups, sometimes on better conditions. In at least one case, a disadvantaged woman was able to acquire land for her family and start a small business as a result of this policy. The evaluation team did not have the capacity to investigate further cases or get an overview of the frequency of such practices. Nevertheless, the general rules of the associations are clear with regard to special conditions offered to disadvantaged groups, to enable their inclusion and their participation in the benefits generated through the association.

The associations include members from various socio-economic strata, also better-off small-scale farmers. This gives rise to the question of

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whether interventions should be more specifically focused towards the most socio-economically poor groups. However, having mixed groups serve to promote social integration. Moreover, members with capacities to run such associations are often found in the somewhat higher strata of society. It is essential to have strong associations, to ensure that disadvantaged people benefit. The evaluator therefore supports the model that has been chosen.

One issue to be considered is the fact that the established associations do not, in practice, accept new members. The reason is that the members already involved have contributed greatly to increasing the funds by saving their private money in these funds, and any newcomers would have to balance the money invested by the members during those years. Most people cannot afford that – so they cannot become members. The only way that the approach can spread is by establishing new groups. Those wishing to join established associations must accept that they cannot, but they can continue to benefit from the seeds they can buy, and knowledge shared by the members. Whether and how this situation could be solved differently is a matter for discussion. The CBM fund has been a central success factor for the programme, and changing the terms and conditions could also change the prospects of success. Making any such changes should be approached with caution; in any case, the associations that have already been established are sovereign in these matters.

## 5.2 Relevance to public policies, strategies and plans in Nepal

The Community-based Biodiversity Management Programme has been clearly relevant to government policies, to which it has contributed, particularly since 2014:

- The revised National Agrobiodiversity Policy 2014 (first adopted in 2007) promotes the CBM approach and includes several CBM practices. For instance, according to Article no 5.1.1.10, 'in order to promote the CBM approach, practices such as community biodiversity register, biodiversity fair, community seed bank, field gene bank and community biodiversity management fund will be implemented and disseminated'. Similarly, Article 5.1.2.7 provides for collaboration between community seed banks and the National Genebank, to strengthen the linkages between *in situ* and *ex situ* conservation of crop genetic resources.
- Agrobiodiversity management has been mainstreamed in government institutions at the national level:
  - In order to coordinate and monitor implementation of the National Agrobiodiversity Policy, an Agrobiodiversity Policy Implementation Coordination and Monitoring Committee has been established directly under the Ministry of Agriculture and Livestock Development and is chaired by the Secretary to the Ministry. Here LI-BIRD has one seat, for the Executive Director, and represents the NGOs in the committee. LI-BIRD contributed decisively to the inclusion of two farmers on the committee, one male and one female.
  - The Department of Agriculture, under the Ministry of Agriculture and Livestock Development, oversees the Crop Development Centre. This centre has been renamed and restructured to accommodate agrobiodiversity management and is now called the Crop Development and Agrobiodiversity Centre.
  - In 2010, the National Agricultural Genetic Resource Centre (NAGRC), the National Gene Bank, was established under the National Agricultural Research Council (NARC), the agricultural research entity of Nepal, directly under the Ministry of Agriculture and Livestock Development. The establishment of the National Gene Bank was fully funded by the Government of Nepal. As of today, it has 11.000 accessions of 130 crop species in medium- (10–15 years) and long-term storage (interview with Deepa Singh Shrestha, Senior Scientist in Horticulture, and Krishna Hari Ghimire, Senior Scientist in Plant Breeding, NAGRC, 5 October 2018). There are also a DNA-bank of major accessions, a tissue bank for vegetative propagating material, and field gene banks for relevant crops at many NARC sites in Nepal. The NAGRC collaborates directly with five CSBs; 20 CSBs (including those of CBM-Nepal) have deposited seeds in the gene bank on a voluntary basis. The five CSBs multiply seeds for the gene bank, which in turn provides seeds, technical and some financial support to the CSBs.
  - The Agrobiodiversity and Environment Division in the Ministry of Agriculture and Livestock

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Development oversees these institutional arrangements and developments.

- Among the aims of the National Seed Vision 2013–2025 are promoting the use of promising local genetic resources in community seed banks and community-based seed production, and developing linkages between community seed banks and the National Genebank, for the exchange of materials and information.
- The Directorate of Engineering under Department of Agriculture (DOA) has developed Community Seed Bank Implementation Guidelines (2015) for establishing earthquake-proof community seed bank stores in 24 earthquake-hit districts in Nepal, with plans for upscaling this work in other districts in the future.
- In 2016, the Ministry of Population and Environment (MoPE) included community seed banks in its Climate Smart Village (CSV) programme being implemented in 150 villages in Nepal.
- A bill on Plant Variety Protection and Farmers' Rights, inspired by a similar bill in India from 2001, is currently in the process of adoption. LI-BIRD has supported this bill.
- CBM practices were mainstreamed into the plans and policies of the previous District Agricultural Development Offices (DADOs).

According to Ms Bidya Pandey, Senior Agriculture Development Officer, Chief of the Agrobiodiversity and Environment Section of the Ministry of Agriculture and Livestock Development, commitment is high in the government. The establishment and support of the National Gene Bank out of the country's own resources serve as expressions of that – in addition to the agrobiodiversity policy, which is clear on the issue (interview, 5 October 2018).

Through the CBM-Nepal programme, LI-BIRD has not only influenced the political decision-making processes towards the points listed above (as further explained below), but has also shown in practice what the government policies seek to achieve.

Under the current political and legal environment, the policy framework in Nepal is conducive for scaling up CBM. When the CBM-Nepal programme started back in 2007, the situation was different. The importance of agrobiodiversity was not acknowledged to the same extent, and it was

difficult to direct attention to the issue, according to the Executive Director of LI-BIRD at that time, Dr Pratap Shrestha (interview in Pokhara, 8 October 2018). There has been a profound shift in policies. As confirmed by several sources, LI-BIRD has been a central actor in influencing that shift, often in collaboration with South Asia Watch on Trade, Economics and Environment (SAWTEE).

Even though the DADOs were dissolved through the nationwide administrative reform of 2015, the people who were involved in CBM activities from the DADOs – an estimated 50–100 public officials – are now variously connected with the new administrative system. Our investigations indicate that there are probably many individuals who are committed to the CBM approach and are motivated to contribute to fulfilling the new policies through their current positions. Also, the many events organized by LI-BIRD have attracted officials, and an estimated 50 persons on average have been exposed to CBM during programme implementation. In case of a scaling-up of the CBM-approach, new contacts will have to be made at various levels of governance, and new officials will have to be introduced to the topic. But the policies have clearly proven conducive, and the approach is well known within the system. *The soil is fertile*, to use a pertinent metaphor.

### 5.3 Relevance to international agreements and goals

The Community-based Biodiversity Management Programme is highly relevant to international agreements, plans and goals, including the International Treaty on Plant Genetic Resources for Food and Agriculture, the Global Plan of Action on Plant Genetic Resources for Food and Agriculture, the Convention on Biological Diversity (CBD) and the UN Sustainable Development Goals (SDGs).

#### 5.3.1 Relevance to the International Treaty on Plant Genetic Resources for Food and Agriculture

The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) is aimed at the conservation and sustainable use of crop genetic resources, and the equitable sharing of benefits arising out of their use. CBM-Nepal is particularly relevant to ITPGRFA Articles 5, 6 and 9. According to Article 5, the contracting parties (countries that have ratified the Treaty) shall promote or support, as appropriate, the efforts of farmers and local

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communities to manage and conserve on-farm their plant genetic resources for food and agriculture. According to Article 6, the contracting parties shall develop and maintain appropriate policy and legal measures that promote the sustainable use of plant genetic resources for food and agriculture; this may include such measures as promoting plant-breeding efforts which, with farmer participation, can strengthen the capacity to develop varieties particularly adapted to local social, economic and ecological conditions, also in marginal areas; broadening the genetic base of crops and increasing the range of genetic diversity available to farmers; promoting the expanded use of local and locally adapted crops, varieties and underutilized species; and supporting the wider use of diversity of varieties and species in on-farm management, conservation and sustainable use of crops. Article 9 addresses farmers' rights related to crop genetic resources and sets out optional measures concerning *inter alia* benefit-sharing, of which the CBM-Nepal project is a good example (see also Andersen and Winge, 2013). CBM-SA also provides good examples of how farmers' rights related to traditional knowledge and participation in decision-making can be supported, making clear the importance of farmers' rights to save, use, exchange and sell farm-saved seed for the conservation and sustainable use of crop genetic resources.

Mention should also be made of Article 8 of the Treaty, according to which the 'Contracting Parties agree to promote the provision of technical assistance to Contracting Parties, especially those that are developing countries or countries with economies in transition, either bilaterally or through the appropriate international organizations, with the objective of facilitating the implementation of this Treaty.'

### **5.3.2 Relevance to the Global Plan of Action on Plant Genetic Resources for Food and Agriculture**

The Global Plan of Action on Plant Genetic Resources for Food and Agriculture (GPA) aims to promote efforts at conservation and sustainable use of PGRFA, to link conservation with use, for greater use of plant germplasm, to strengthen crop improvement and seed systems to foster economic development, to create capacities, strengthen national programmes and widen partnerships for PGRFA management, and to strengthen implementation of the above-mentioned International Treaty on

Plant Genetic Resources for Food and Agriculture. The many relevant provisions of the GPA, which are voluntary, can be seen as a kind of guidelines. The successful sites of the CBM-Nepal project provide excellent examples of how these provisions can be implemented in practice, underscoring the relevance of the CBM-Nepal approach.

### **5.3.3 Relevance to the Convention on Biological Diversity**

The Convention on Biological Diversity (CBD) is aimed at the conservation and sustainable use of biological diversity (including agrobiodiversity), and the equitable sharing of the benefits arising out of their use. The ITPGRFA was negotiated as a consequence of the CBD (see Andersen 2008, for the history), and is more specific with regard to agrobiodiversity. We do not explore the CBD in further detail here.

### **5.3.4 Relevance to the UN Sustainable Development Goals**

The UN Sustainable Development Goals (SDGs) are important international goals for the direction of national and international policies. The CBM-Nepal is relevant to several SDGs, in particular the goals of 'no poverty' (SDG 1), 'zero hunger' (SDG 2) and 'sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss' (SDG 15). The CBM-Nepal programme provides good examples of how these goals can be approached from the community level.

## **5.4 Relevance with regard to agrobiodiversity conservation and farmers' seed systems**

An important question for this evaluation is whether the Community-Based Agrobiodiversity programme addressed the actual needs/ gaps of the target groups in terms of agrobiodiversity conservation and farmers' seed systems. The short answer is 'yes', as indicated under 'seed security' above. Further potentials are relevant in view of which practices of agrobiodiversity management have been shown to work well and what lessons can be drawn with a view to scaling out/expanding.

### **5.4.1 Exploring/developing the diversity available**

The evaluation team noted that the associations were well aware of the importance of conserving local varieties of crops and made great efforts in this regard. However, relatively little was done to

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explore the diversity already available and to select varieties and lines for improvement with a view to target-group preferences. However, we noted some outstanding examples of such practices, as with the Kalonuniya rice, where LI-BIRD, in collaboration with local farmers, had done much to improve a local variety which is now providing great benefits to people in the area. Even more work in this direction could be relevant. Local varieties have many advantages in terms of taste, nutrition and fodder quality (straw), but often lower yields, although some farmers hold that, under certain growing conditions, the difference is not great. Local varieties have generally better capability to adapt to environmental challenges, such as the effects of climate change. Interviewees noted that seasons and weather are no longer so predictable. There are stronger winds in the lowlands; in the mid-hills, hailstorms are more frequent and new pests and diseases are arriving. Interviewees said they would like to explore and improve more local varieties with a view to resilience to the effects of climate change, and to increase yields. There is much to learn from the systematic approach of EOSA in Ethiopia as regards exploration and improvement of local varieties. If LI-BIRD and/or the DF wish to scale out/expand CBM-activities, then exchange of experiences in this regard would be useful for LI-BIRD – and EOSA could benefit from learning about the financial sustainability of CSBs in Nepal.

#### 5.4.2 More diversity

The evaluation team noted that, after the implementation of the community biodiversity register in the initial years, there was some effort, but not much, to enhance the diversity on hand. Several species of importance to the Nepali kitchen are not available in the community seed banks we visited, and there is little emphasis on fruits. Although the diversity maintained is impressive, there is scope for enhancement. On the other hand, what is there in the community seed banks largely reflects the needs expressed by members of the association at the time of implementing the register. Whether there is a general need to expand the diversity is not certain, but some interviewees expressed such a wish. When the varieties to be conserved in the community seed bank are expanded, also the workload increases. It might be advisable to go about expanding the diversity in a cautious way. The evaluation team did not have enough time to explore this question in depth. Should LI-BIRD and/or DF scale out/expand

CBM activities, then an assessment of this issue is recommended. In this context, also the question of promoting more seed exchange, possibly through seed fairs, could be taken up.

#### 5.4.3 Value addition

Some local varieties have established themselves on the market at better prices than improved varieties and generated considerable demand, thereby enabling incomes comparable to, or higher than, earnings from improved varieties. These are impressive achievements that benefit the target groups, and are the result of considerable work. There is probably a potential for developing more such 'success' stories: what is required is not only exploration and possible improvement, but also access to markets. A value-chain approach could be useful to enable farmers to benefit more from growing diversity. There has been limited capacity to develop this approach further within LI-BIRD; if there should be new efforts to focus on CSBs, then this could be one aspect to strengthen.

#### 5.4.4 New methods and tools

Interviewees highlighted the need to keep updated on new developments with regard to methods, in particular organic methods, and tools and machinery to reduce workload. While LI-BIRD was there, it was easy to keep updated, and some tools, machinery and improved livestock sheds were introduced. After LI-BIRD left, it was far more difficult to keep updated and participate in new developments. Some sort of backup and training would be useful for the associations even if they continue to have full responsibility for their core functions and financial sustainability.

#### 5.4.5 Relevance to young people

A general trend in Nepal, as in so many other countries, is the migration of young people to urban areas or abroad. Agriculture is generally of scant interest to the younger generation – it is rather something to fall back on if all other plans go wrong. Today's custodians of agrobiodiversity are ageing, and little is done to mobilize young people and children. This is also reflected in association membership, where young people tend to be in the minority. It is essential to contribute to making agriculture attractive, especially making agrobiodiversity interesting for the younger generation. Possible measures mentioned include trainings and better tools as well as the prospects

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of improved livelihoods based on agrobiodiversity, as noted above. Measures specifically targeted at younger generations would be useful.

### **5.5 Present and future validity of the programme objectives in Nepal**

One question to be examined by this evaluation was to what extent the objectives and results of the programme are still valid. Increasing 'biodiversity-based' livelihood security of local communities, as stated in the overall programme objective, remains highly relevant, and the impressive results and sustainability of the programme (see below) show that the holistic agrobiodiversity approach applied has great potentials for sustainably improving the livelihoods of local communities in Nepal, thereby maintaining crop genetic diversity and soil fertility for future generations.

Also valid and highly relevant for future engagement are the outcomes defined for the programme: greater on-farm/in-situ conservation of genetic diversity; increased agrobiodiversity-based incomes; empowered farmer groups with regard to the management of agro-biodiversity; and greater contribution and influence on policies aimed at the sustainable use and conservation of genetic resources.

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## 6. Impact of the CBM programme in Nepal

The impact of the programme has indeed been impressive. Not only have more than thousand crop varieties been conserved and used in sustainable ways, but the livelihoods of the farmers involved have improved substantially. The programme has enabled them to reduce their costs of agricultural production, while boosting yields and diversifying production for home consumption, and generating substantial income to meet household consumption needs and send their children to good schools. That these impacts have been sustained and even increasing at seven project sites two years after the project was phased out is an irrefutable indication of success.

### 6.1 Impact on on-farm management of agrobiodiversity

Through the agrobiodiversity programme, more than one thousand varieties of crops have been rescued from genetic erosion, and at least seven communities have continued to conserve and maintain these varieties in line with the systems and methods they have learned. Two years after the programme was phased out, awareness of the importance of this work is still high. This work, combined with the production of high-quality seed of improved open-pollinated varieties and selected local varieties, has greatly improved the seed security of the members and an increasing number of non-members.

In 2018, the associations covered by the programme produced altogether approximately 150 tonnes of rice seed. This will result in 12,000 tonnes of rice next season. Seed production is increasing rapidly due to the innovative and fast-expanding seed funds established under the programme.

The holistic approach to on-farm management of agrobiodiversity implies improved production methods, including organic methods for plant production. Also these methods are still being practised two years after the phasing out of the programme; according to interviewees, these methods contribute to improving soil matter, soil

structure and texture, soil health and the capacity of the soil to store water, which are all important impacts.

### 6.2 Improved livelihoods, including food and nutrition security and income

Livelihoods within the target groups have improved greatly with regard to food and nutrition security as well as income. Thanks to the greater choice of crops, better production methods and reduced production costs, members have more food available.

Many members are now basically self-sufficient in vegetables. The diversification of agricultural production has led to a significantly more balanced, nutritious diet, in particular through the greatly increased production and consumption of vegetables. The interviewees noted that they appreciate having food that is largely free of pesticides. They also emphasize that many vegetables taste better when produced by organic methods than with the use chemical fertilizers and pesticides. In some communities, meat production has improved, meeting local demand and improving nutrition.

The evaluation team has collected many accounts from members who have been granted micro-credits from their respective CBM funds, on condition that they contribute to conservation work. These credits were used as incremental costs for starting small businesses. The businesses have generally been very successful and generated accumulating income, thereby greatly improving the economic situation of the households. Many individual accounts of significant increases in income as a result of such micro-credits from CBM funds were told to the evaluation team and have been documented. For seed producers, additional income from seed sales boosts this effect. The surplus earnings have been used to send children to better schools and for longer times, to access public health services and buy medicines, and to meet other household consumption needs.

As the CBM funds are rapidly expanding, due to

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the 12% interest rate, more and more members are benefitting; some avail themselves of this possibility several times. This is a great success of the programme. Interviewees also emphasize the importance of reduced dependency on imported seed and input such as chemical fertilizers and pesticides, which often required expensive credits from local money-lenders. Most members are now free of such dependencies: costs are reduced, and they can borrow money from the CBM fund at low interest rates.

### 6.3 Empowerment of local communities

The programme has greatly empowered local communities through the associations set up for promoting conservation and sustainable use of agricultural biodiversity. Communities have learned how to conserve and sustainably use and manage crop genetic diversity, which in turn has boosted their self-esteem. Through their seed production, they have been able to sell seed of high-quality seed to members as well as non-members, gaining recognition also from non-members.

Several interviewees noted that they had been somewhat sceptical to the initiative at first – but, now that they see the impressive results, they fully appreciate the efforts. Some sites have many visitors who wish to learn about their approach – from the national government, province governments, local government, other authorities, research, delegations from several other countries, and students. Also this boosts local self-esteem.

### 6.4 Distribution of benefits between women and men

Whereas women and men have equal access to the CBM fund, women seem over-represented among those receiving micro-credits. Women also benefit from vegetable production with organic methods, as home-gardening is often the woman's responsibility. Men normally engage in seed production, and benefit from these activities. Women are well represented in the groups, but not always to the same extent in the executive committees. Nevertheless, the women interviewed for this study say their views are appreciated and that they feel listened to, also where men are in majority. Women emphasized that the programme has greatly empowered them, although some women were somewhat more outspoken than others. One woman said: 'Before,

we were only individuals, but now we have a group, sharing our ideas and our problems.'

Participation in the associations has also increased the workload for women. However, the interviewees stressed that the benefits of participating in their associations by far outweighed the disadvantage of somewhat heavier workloads.

### 6.5 Dissemination of quality seeds beyond target communities

The high-quality seed produced by the communities enjoys considerable recognition, also in neighbouring communities. This can be ascribed to training as well as procedures to ensure quality. Members can buy the seed at slightly reduced prices, but the prices are also affordable for non-members. Demand is huge in some areas, and seed production is increasing rapidly. Many persons enjoy the benefits of this seed production – members and non-members alike.

Also, knowledge of various approaches and techniques, such as organic methods, spreads through communication and visits between and among members and non-members. Good practices are adopted by non-members, and spread. There is evidence that members help their neighbours, showing them how to use the new methods.

### 6.6 Unintended/unexpected impacts

The evaluation team could not identify any negative impacts as regards the target groups or affected groups, despite repeated questions, also asking non-members and observers. On the other hand, we found some positive impacts that can be said to be unintended or unexpected.

For example, the improved cattle sheds introduced to enable collection of urine for use as fertilizer and biopesticide also contributed to better hygiene in and around the farm courtyards. This, together with improved nutrition, and the reduced use of chemical pesticides, resulted in improved health conditions particularly for children, as several interviewees reported. Children did not fall ill so often, and that was seen as a significant change by our interviewees.

Another effect is that some local hotels have discovered a competitive advantage in crop diversity. In Tanahun, two hotels competed in serving organically produced vegetables and crops

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from seeds obtained from the community seed bank and using organic methods as intended in the programme. The hotel owners claimed that people come from far away to experience this food.

A further impact which could not be foreseen is how income generated through the project has created new opportunities. For example, the evaluation team met a young woman who had become the English teacher in the nearby school: her parents' savings of the earnings from increased yields and income-generating projects had substantially contributed to enabling her to train as teacher. There are probably many more stories of unexpected positive impacts.

It is relevant to mention another impact: over the years, LI-BIRD has engaged in participatory plant breeding and participatory varietal selection. This has been an important tool for exploring and developing the diversity available in community seed banks, for the benefit of members as well as non-members. However, such processes are time-consuming. Also, as the resultant varieties are normally registered with LI-BIRD, that means that LI-BIRD has responsibility for maintaining these varieties. The greater number of varieties for which LI-BIRD has responsibility entail greater obligations for maintaining breeder and foundation seed, for which LI-BIRD does not receive funding. This is a critical challenge. Much more participatory plant breeding and varietal selection is needed to explore the varieties available in the CSBs, possibly also through population breeding. However, solutions need to be found how to deal with the long-term commitment involved in terms of division of labour as well as financial support. The National Agricultural Research Council (NARC), with its research sites throughout Nepal, could be a possible partner in this context. But also NARC is weak and is currently undergoing transformation. It would need support as well. Supporting NARC towards this end could have the additional advantage of reaching out with the CBM approach. Also lessons may be learned from Ethiopia and EOSA, which engages in participatory exploration and development of the diversity in the community seed banks as a continuous activity.

## 6.7 Impact on relevant local, national or international policies

Is there any evidence that the agrobiodiversity

programme has had impacts on local, national or international policies on farmers' seed systems? As shown under 'relevance' above, and as explained and confirmed by several interviewees, the programme has contributed significantly to shaping the policies and political structures in Nepal with regard to the management of agrobiodiversity.

The methodology of the CBM approach has not only been acknowledged, but directly adapted in national strategies. Collaboration with SAWTEE was central here. This important and targeted impact of the programme has prepared the political and institutional foundation that can be found in Nepal today, conducive for scaling up CSBs. Much work effort has been invested, and now there is a system conducive to CBM management in the country. Therefore, a crucial question to the DF is whether the organization will simply leave it at that, or acknowledge the response of the government actors in Nepal to the targeted interventions they have supported – and set about further developing the successful approach developed together with LI-BIRD as a follow-up to the government response.

At the international level, the programme is a beacon, together with the other CBM programmes supported by the DF during the same period. LI-BIRD representatives are often invited to present the CBM approach and results in international gatherings related to the ITPGRFA, including on the sustainable use on crop genetic resources and Farmers' Rights as well as in research contexts. DF has facilitated and supported LI-BIRDs participation in such meetings, and this is clearly one of DF's added values to LI-BIRD (and other partners). At the Global Consultation on Farmers' Rights in Bali in 2016 (which this evaluator co-chaired), the presentation made by LI-BIRD made a significant contribution to the understanding of what Farmers' Rights are about and how they can be implemented. LI-BIRD is represented in the first-ever Ad-Hoc Technical Expert Group on Farmers' Rights under the ITGPFRA, and made a pioneering presentation, clarifying the practical aspects of Farmers' Rights, at its first meeting in 2018. LI-BIRD has been invited to two meetings of the EU Horizon 2020 project DIVERSIFOOD, and co-organized a side event with DIVERSIFOOD in Kigali, Rwanda, at the Seventh Session of the Governing Body of the ITPGRFA. There are many further examples. Whether and how these contributions impact on international negotiations is difficult to know, but

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there can be no doubt that LI-BIRD is a central actor at the international level, helping to shape the processes and their results.

## **6.8 Impact on methodologies, plans or strategies of relevant institutions**

Is there any evidence that the programme has had an impact on the methodologies, plans or strategies of local or national government institutions, research institutions, or other national/international institutions and organisations?

In addition to the contributions to the national policies and political structures explained above, where also the CBM methodology has been partly adopted, LI-BIRD has contributed to the development of an introduction course in CBM at the academic level, as a member of the Curriculum Development Committee. The course was developed at the Institute of Agriculture and Animal Science, later renamed to the Agriculture and Forestry University (Southern Nepal). The course is still running, and each year some students choose to write their MSc dissertation within this topic-area.

Moreover, there is an expanding CSB-movement in Nepal. Action Aid and SAHAS Nepal are actively engaged in the work to expand the number of CSBs. Both have requested technical backup from LI-BIRD; and the programme leader, Pitambar Shrestha, has provided several courses and technical backup. There has also been a request from an organization in North India, the North East Slow Food and Agrobiodiversity Society (NEFAS); and LI-BIRD, with Pitambar Shrestha, has also helped out there.

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## 7. Sustainability of the CBM programme in Nepal

To what extent can the achievements and impacts of the programme be regarded as sustainable? What are the opportunities or constraints for strengthening the sustainability of DF agrobiodiversity interventions?

### 7.1 Sustainability of achievements/impacts

The vibrant activities of the seven organizations established by LI-BIRD/DF two years after the end of programme show that these interventions are sustainable. Not only have the activities been continued: the levels of activity are increasing, and the capital generated is growing steadily. This is clearly a great success. Observers interviewed maintained that many projects, including CSBs, are started in Nepal, but tend to fall apart when project support ends. That has not been the case with the seven CSBs organized by LI-BIRD/DF, which are doing very well. This is acknowledged by stakeholders in Nepal, and the CBM approach is recognized as highly successful.

This does not mean that everything is perfect. There are weaknesses, as noted in the case studies above, that do not disturb the broader picture of sustainability as of now, but which could over time make further progress difficult, threatening longer-term sustainability. These weaknesses concern technical issues related to conservation of the material kept under CSB auspices, including backup of information, and institutional issues related to the rapidly increasing activity levels of the CSBs. The former could result in reduced efforts or lower quality of conservation and/or loss of important information, but can easily be solved if the CSBs receive technical backup on these specific points. The latter could in the worst case 'burst' CBM associations, as management capacity is already highly strained – but this problem can easily be solved if they receive institutional backup on managing their funds to deal with such issues. Access to trainings and updated information is among the gaps after LI-BIRD left. Here the need is clear, to sustain the progress of the CSBs. Trainings in exploring and developing local varieties, in agricultural methods and in income-generating activities are of great interest, as is information about

agricultural tools and methods. None of the CSBs need core funding from LI-BIRD/DF, they are self-sustaining. What they need is further technical and institutional backup in connection with the few issues they cannot solve, and access to training and relevant information. With a little effort, this could generate sustained progress, with wide-ranging results.

Here we should recall that there were three associations which had been supported by LI-BIRD but which made little progress, and could not sustain their activities. Important lessons can be derived from these experiences, as further elaborated in the next section of the report.

Finally, the DADO initiatives in the ten districts did not function as expected and were phased out, as explained above. Also this experience has generated lessons. The DADO approach was generally not sustainable, due to lack of capacity and financial resources, as dealt with in the next section.

It should also be noted that the DF has been an accommodating partner, ready to listen and to be flexible. These are valuable aspects, highly appreciated by LI-BIRD, and are among the reasons for the achievements made. This flexibility enabled LI-BIRD to adapt to the challenges encountered along the way and be more innovative in its approach.

### 7.2 Strengthening the sustainability of DF's agrobiodiversity interventions in Nepal

Here we examine opportunities for strengthening the sustainability of the seven associations that have been successful thus far. Next, we derive lessons learned from all interventions through the programme in Nepal, concerning the conditions for achieving sustainability in future interventions.

#### 7.2.1 Opportunities for strengthening the sustainability of successful CSBs/associations

As noted, the sustainability of the seven associations started by LI-BIRD/DF would greatly benefit from further technical and institutional backup, and

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continued access to training and information. One way of following up on this would be to establish a network for community seed banks, as part of a long-term commitment to developing community seed banks in the context of community biodiversity management in Nepal. This could serve the associations with required backup, training and information. With small funds much could be achieved: importantly, it would enable these already established, self-going associations to continue to thrive.

An initiative towards this end has been taken, as discussed at the Second National Workshop on CSBs in Nepal, 3–5 May 2018 (where the DF unfortunately could not participate). This initiative seems to cover the whole country. Such an initiative is indeed interesting and timely, but three issues in particular should be taken into account when considering how to respond for LI-BIRD/DF:

- **Coverage:** It is still too early to know whether such a national network will cover technical backup and trainings, or to what extent, how, and from whom. Thus, it is too early to conclude whether, or to what extent, it will be relevant to the needs identified in this report.
- **Time:** Getting a national initiative up and going may take time: several parties are involved and must agree on modalities; moreover, official registration may be required. All this may take too long for the CSBs supported by LI-BIRD/DF, as they need backup quite urgently, for institutional issues in particular.
- **Efficiency:** There might be a trade-off between legitimacy and efficiency. All-encompassing coverage may ensure a high level of legitimacy, but may also make efficient response to the needs of the beneficiaries in the CSBs more difficult, depending on decision-making structures and institutional distance to the beneficiaries.

Thus, one recommendation to LI-BIRD/DF is, as a matter of highest priority, to set up an informal network under LI-BIRD, perhaps as part of a longer-term commitment of the two partners to developing CSBs/CBM in Nepal, to accommodate the urgent needs of CSBs that need backup, so as to ensure their long-term sustainability. The network could also serve other CSBs initiated by LI-BIRD.

In addition, LI-BIRD/DF should follow closely the development of a new nationwide network on CSBs,

and consider supporting this – provided that LI-BIRD has a central role in that network and that it would accommodate the long-term needs of current and future CSBs established by LI-BIRD/DF.

### 7.2.2 Conditions for success for future interventions in Nepal as regards sustainability

Many lessons can be drawn from experiences so far with regard to potential future commitments in community biodiversity management and community seed banks. If LI-BIRD/DF wishes to restart its activities in this area, the following should be taken into consideration:

When starting up new initiatives:

- CSBs should be started in areas where there is genetic erosion and where farmers want to retain diversity they have lost. Setting up CSBs in areas where there is no locally perceived genetic erosion and where established sociocultural systems of seed banking are still functioning is unlikely to succeed.
- Sociocultural factors are important for the success of CSBs. Where there is little tradition of a collective spirit, it will be more difficult to establish well-functioning CSBs.
- Staff with sufficient capacity and sufficient technical backup from headquarters are necessary to the success of CSBs. If there is no available staff with sufficient capacity or if travel distances from the headquarters are great, starting a CSB is not recommended.

*Some conditions for sustained success of community biodiversity management:*

- **Benefits for the members** are essential. Such benefits include access to a diversity of seed, to related knowledge and knowhow, as well as to high-quality seed of improved open-pollinated varieties; there are also benefits from empowerment and collectivity and other CSB activities. However, the greatest benefit has been shown to be the CBM fund, a highly successful innovation of LI-BIRD/DF. For a CBM fund to function, it must have a certain size; the association must also prove that it knows how to handle funds. Maintaining the right pace and size in developing a CBM fund is crucial. Once the fund is functional and thriving, the association will be self-propelled in this regard, provided the other factors are in place.
- **The seed fund**, another successful innovation

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of LI-BIRD/DF, is crucial to enable the purchase of seed from farmer members (and associates) at agreed terms, and thus to offer the seeds to members and non-members who wish to buy. The seed fund makes possible the orderly organization of seed sales of improved open-pollinated and some local varieties, and that is of great importance to members and local communities.

- **Solid organizational structures**, with democratic elections, auditing and other elements as established by LI-BIRD/DF, are a precondition for sustainability
- **Collaboration with local authorities** provides good support and may also generate public funds. Also advantageous is linking up with the formal system and collaborating with the National Gene Banks.

### 7.2.3 Conditions for scaling-up community biodiversity management sustainably

Upscaling CBM to the district, province or national level requires the existence of a suitable institutional structure. Although LI-BIRD has the essential technical knowhow, it lacks the necessary institutional structure. The Agricultural Extension Service of Nepal is the most relevant institutional structure for accommodating an upscaling of CBM. Previously organised through the DADOs, since the 2015 administrative reform it is organized through the local municipalities.

If CBM is upscaled through the public agricultural extension services, there is possibility of reaching out to all parts of the country where these services are active and where CBM is relevant. However, it is essential to proceed step by step, perhaps starting with a few selected districts, developing the model, and then expanding from them. One possibility would be to start out with the seven districts where there are well-functioning associations at ward level, as the demand for scaling-up is already there.

Scaling-up would mean establishing new associations in other wards of the same municipality or in other municipalities, to be expanded successively, inspired by the existing CBM association in each district. This time the agricultural extension service would have a central role, in close collaboration with LI-BIRD. Together with the municipalities, LI-BIRD would have pilot projects, to be taken over by the municipalities when they are in a position to do so. Such an approach would involve building the long-term capacity of the

agricultural extension service for further scaling-up activities as part of its core activities. However, there are important conditions for sustained success:

- **Commitment:** Commitment is required at institutional as well as individual levels. At the institutional level, commitment is expressed through policies, strategies and plans, all of which are currently conducive to CBM in Nepal. At the individual level, there are many extension service officers who have previously been exposed to CBM and who are committed, but more work is probably needed to introduce CBM in the new system of agricultural extension service after the administrative reform of 2015.
- **Capacity:** Nepal's agricultural extension services struggle with limited capacity, where a few individuals are expected to handle comprehensive tasks at the local level, with limited support and backup. Further adding to this workload without compensation may be difficult. Ways and means must be found to increase staff capacity for the time required to establish and follow up the CBM intervention in the most work-intensive years. Also, longer-term solutions need to be found to develop the capacity for CBM within the agricultural extensions service system.
- **Knowhow:** Sufficient knowledge and knowhow among the agricultural extension service staff are required, as CBM involves a considerably more complex approach than the activities of the average agricultural extension service. Trainings and demonstration visits are important tools in this regard, but technical and institutional backup is crucial. LI-BIRD will be central in all these regards, and close collaboration is a prerequisite. Such collaboration may also imply a division of labour between LI-BIRD and the agricultural extension service: for instance, LI-BIRD might be in charge of aspects related to empowerment and institutional sustainability, which may be difficult for agricultural extension service officers to handle. LI-BIRD might also come in to conduct other tasks upon demand, depending on the management model.
- **Guidelines:** Clear guidelines for developing CBM would be needed, based on the successes and experiences made. Whereas previous works can be taken as points of departure (see e.g. Sthapit et al, 2012 and Shrestha et al, 2012), more research is required to translate important lessons into guidelines.

- **Financial resources:** Sufficient funding in the initial years is a prerequisite for sustained success. In particular, it is important to make the CBM fund operative at a sufficient size as soon as possible, provided that the association has shown it can handle that. Public sources should be expected to co-finance such a programme, e.g. by covering a small share in the beginning, to be expanded over the years. The assumption is that municipalities will invest, if they see good results. Also government support could be relevant. Agriculture is the highest political priority of the current government; with its agricultural policy, which is clearly supportive of CBM, there should be possibilities for generating government support.
- **Laying the ground for expanding to new districts:** The approach outlined here indicates that the agricultural extension service could use the established CSB as a ‘beacon’ and source of inspiration as well as for guidance. To expand to further districts, new ‘beacons’ would need to be established there, for the agricultural extension service to follow up by scaling up within those districts. The most efficient approach would be for LI-BIRD to follow the success recipe from previous sites (as well as the lessons learned from less-successful sites), in establishing new CBM interventions in new districts, establishing contact with the agricultural extension services and gradually involving them.
- **Research, documentation and monitoring:** A central foundation for the sustained success of the CBM approach as described in this report is solid research and development. Many years of research and development, including with pilot projects closely followed up by research, provided the foundation for the approach that was applied by LI-BIRD/DF for the CBM-Nepal model. The DF-funded programme did not include follow-up research (however, support to participatory plant breeding was included) and only very limited documentation. As LI-BIRD is a research-based NGO and believes that development interventions should be guided by research to ensure sustained success, collaboration was sought with other partners to accommodate this need. Bioversity International, with Bhuwon Sthapit (sadly, he passed away in August 2017), Ronnie Vernooy and Devendra Gauchan (previously with the National Agricultural Research Council) have been central

partners in this picture. There has been limited support to this (some donor organizations have contributed); documentation includes flyers, reports, some peer-reviewed articles and posters communicating the CBM-approach in its various facets and its relevance to climate change and other development and environment challenges. The documents reflect that little resources were available for ground research on developments in the CSBs. Research-based documentation of the conditions for success is still lacking, and much remains to be done in documenting the successes thus far. Also, certain questions have arisen from programme implementation – for example, how to sustain conservation of agrobiodiversity with direct economic returns to farmers in the long run: i.e. how to capitalize to a greater extent on the conserved diversity (see recommendation 6 below). Here research and development would be useful.

Programme-related documents cover the proceedings of two national workshops on CBM, where DF provided some support but did not participate. DF has been more or less invisible in these processes, featuring only to a very limited extent in the resultant publications. To strengthen the research, development and documentation component of a future programme, DF should become a more active partner, not only by providing financial resources, but also facilitating input from other countries where DF is active, to reflect the options available for CBM management, and other research/documentation of relevance. This is where DF has a great comparative advantage and genuine possibilities to contribute significantly, not only as a donor but as a professional partner as well. Such a role would necessitate a shift in DF’s current perception of its role, drawing instead on the more professional partner role it had in the early days of the CBM-SA programme. Such a shift would be highly appreciated by LI-BIRD (interview with Dr Balaram Thapa, Executive Director of LI-BIRD, 10 October 2018).

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## 8. Conclusions and recommendations

Community-based Biodiversity Management as practised by LI-BIRD/DF in the CBM programme in Nepal is a well-designed and powerful tool for ensuring seed and food security and improving the livelihoods and living conditions of small-scale farmers in Nepal, while ensuring that crop diversity and soil resources will be available for future generations.

### 8.1 Conclusions

The following conclusions sum up the highlights from this evaluation:

**A. Relevance:** The CBM-Nepal programme has successfully responded to the most central needs of the target groups, including those of women and members of disadvantaged groups, in the seven districts that were followed up by LI-BIRD until the end of the programme period. Seed and food security and livelihoods have improved greatly within the target groups. The programme has repatriated and secured access to crops that are adaptive to climate change and introduced agricultural methods that are more resilient to climate change. Members enjoy the collective spirit, self-esteem and empowerment they experience through their associations. The CBM programme is also highly relevant to Nepal's current policies, strategies and plans (to which it has also contributed, see below), as well as to the country's commitments to international agreements and goals, such as the International Treaty on Plant Genetic Resources for Food and Agriculture, the Convention on Biological Diversity and to the Sustainable Development Goals. The programme objectives – to increase 'biodiversity-based' livelihood security of local communities through on-farm/in-situ conservation of genetic diversity, achieve increased agrobiodiversity-based incomes, empowering farmer groups with regard to the management of agro-biodiversity, and greater influence of relevant policies – are just as relevant today as when the programme started.

**B. Impact:** The impacts of the CBM-programme are impressive. Not only have more than thousand

crop varieties been conserved and made available to the farmers, but the livelihoods of the farmers involved have improved substantially in seven localities. Through the programme they have been able to reduce their costs of agricultural production substantially, while achieving greater yields and diversifying production for home consumption and generating substantial income to meet household consumption needs and to ensure good schooling for their children. That these impacts have been sustained and are even increasing two years after the phasing out of the project is a clear sign of success. Members gave impressive accounts of how, as a result of the programme, their life situations have been transformed and continue to improve steadily. Also non-members enjoy access to high-quality seed from the CBM associations. In some districts the demand for high-quality seed from the CBM associations exceeds production, and greater production capacity is needed. Non-members also enjoy the knowhow that members share with them, on plants and agricultural methods that boost yield and quality at low or no cost, and on less work intensive, income-augmenting livestock rearing.

**C. Sustainability:** The vibrant activities of the seven organizations established by LI-BIRD/DF two years after the end of programme show that these interventions are sustainable. Moreover, activity levels are increasing, and the capital generated is growing steadily. This is clearly a great success. However, sustained progress here will depend on technical and institutional backup with regard to several pressing issues, as well as continued access to training and relevant information. With little effort, even greater impacts can be expected in the future.

**D. Central conditions for future success of the CBM approach:** LI-BIRD/DF did not succeed everywhere. This report has noted important lessons for future engagement, from the experiences with three sites that did not succeed,

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as well as a first approach to engaging the agricultural extension service – in addition to the lessons learned from the success stories. These lessons concern matters such as agroecological, sociocultural and logistical aspects to be considered in connection with establishing CBM associations, as well as how the advantages of the agricultural extension services can be best utilized while also building their capacity to take responsibility for CBM-interventions. The accumulated experience offers a solid foundation for the next steps.

**E. DF follow-up:** The CBM-Nepal project has been a great success in terms of finding the path for CBM, involving various solutions for different sites in order to respond to the needs of target groups there, and carefully preparing the policy environment at all governance levels for the introduction of CBM. DF has contributed greatly to this success, as a professional partner of LI-BIRD with a long-term commitment and showing the flexibility required to adapt to the lessons that were acquired along the way, thereby maximising the use of resources and capacity. As a result, the soil is now fertile for scaling-up best practices in Nepal. There has been considerable pressure on LI-BIRD to deliver, since it has devoted so much engagement in putting all this in place. LI-BIRD is recognized as an organization that can show the way, and that is what is expected of them. Nevertheless, CBM was not targeted in the new LI-BIRD/DF programme on livelihood and resilience enhancement that started in 2017, except for a few CSB activities. LI-BIRD asks how DF can leave so much valuable experience on its own side, as well as on the side of the partner. This is also a question of sustainability. Capacity has been built up over many years; the ground has been prepared. Why should all this be abandoned now? Why not capitalize on these solid results and comparative advantages? DF has argued the need to focus on livelihoods, climate adaptation and emergencies. However, it would not have been difficult to ‘package’ CBM with regard to this, in light of the joint experiences with the CBM-Nepal programme, as this report has shown. It should be noted, though, that DF and LI-BIRD have jointly strengthened LI-BIRDs participation in international policy processes to share their experiences.

*A message to the DF from LI-BIRD* is that the good results that LI-BIRD and DF have produced together could become a great story. Now others may take over and capitalize on these, leaving the DF with little of the credit it deserves. LI-BIRD sincerely hopes that DF will reconsider the approach and come back, to continue where they left off.

## 8.2 Recommendations

This evaluation report has presented many ideas and options for resolving challenges and questions along the way. These may be regarded as recommendations. Many are of particular value for LI-BIRD. Here we will focus on the most important recommendations for DF, in collaboration with LI-BIRD.

### 1. It's harvest time! Documentation, research and dissemination is needed

The CBM approach is known in some circles, but its major successes are far less known. Systematic research is required to document the successes in greater detail, and in particular to identify systematically the conditions for success. This evaluation, based mainly on qualitative research, constitutes a beginning. Much more needs to be done, also in quantitative terms, to flesh out the details, and to communicate this to relevant institutions in Nepal and internationally, to highlight the opportunities offered by this approach. Such research-based documentation could also provide an important basis for new efforts to boost CBM in Nepal. Research and documentation should be an integral element of such endeavours, not least to ensure the best possible development of a high-quality programme. DF should thus ensure a strong research, documentation and dissemination component in future projects. DF should also participate more actively in workshops and as joint publisher/editor of publications resulting from agrobiodiversity programmes it supports, to share its experiences from other countries, its accumulated knowledge on the topic over time, to present itself as a professional partner in the field, and not least to earn the credit it deserves.

### 2. Take CBM to a new level in Nepal – based on the foundation years

CBM is a new approach, and it takes time to develop and adapt it to specific needs in Nepal. This has been done and important innovation has

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taken place in this period, the *foundation years*. Now the time is ripe to scale up the CBM approach. This report has presented one approach, based on the experiences documented here. This approach has four components: (1) research and development as an integral part; (2) mobilizing the agricultural extension services for upscaling CBM in the districts where the seven successful CBM-associations are located and may function as resource sites, in close collaboration with LI-BIRD; (3) piloting CBM (LI-BIRD) in new districts selected on the basis of good research; and (4) establishing an informal network for the CBM associations established by LI-BIRD to ensure timely technical and institutional backup, training and information of these CBM associations, central for sustained progress. Additionally, the initiative to establish a nationwide network taken at the Second National Workshop on CSBs in 2018 should be awaited and possibly supported.

### **3. DF needed as a strong professional partner**

When DF and LI-BIRD engaged in the CBM-SA project, DF was a rather strong professional partner with which LI-BIRD could discuss professional questions and share experiences. Lately DF has developed more in the direction of traditional donors. LI-BIRD wants to have a real partner in DF, not merely a donor. DF has a comparative advantage here, as it collaborates with partners in different parts of the world and thus has at its disposal a valuable store of comprehensive and important experience from its work in many countries. A precondition is that DF staff have sufficient commitment to, and knowledge about the topic to process and communicate such information and engage in discussions. DF would need to build capacity towards this aim. Engaging in this knowledge, sharing it and facilitating discussion among partners would be of great use for LI-BIRD. Importantly, LI-BIRD wishes to see DF as a partner interested in building the partnership, not only expecting deliveries. This is also about sustainability. By partnering with LI-BIRD, both DF and LI-BIRD could have good potentials for mutual strengthening.

### **4. DF needs to focus – less is often more**

DF has increased the number of its partners in Nepal and has expanded in terms of the issue-areas it engages in, thereby spreading its efforts

more thinly than before. This could result in dilution of efforts. The lesson from LI-BIRD, as shown in this report, was to reduce the number of sites in order to increase effectivity as well as efficiency. DF may wish to consider following along the same lines, focusing its efforts on fewer partners and on topics where it has comparative advantages and follow-up capacity. In LI-BIRD's view, limitations in terms of financial resources is not the core problem for DF; it has just been spreading out too much, with too little effort on engaging as real partners in collaboration over the last few years. Indeed, less is often more.

### **5. Real, long-time commitment is required**

DF engaged for eight years in the CBM-SA project – a long-term commitment in the donor world, where projects typically last two to four years. Those eight years enabled substantial achievements to be made, particularly during the past two years. Engaging in upscaling CBM in Nepal will require a longer time-horizon and commitment, as this will involve complex processes including the development of crop varieties adapted to the effects of climate change, and moving from district to district. However, DF/LI-BIRD have potentials for great accomplishments if they can build on the successes achieved. Together they have created 'fertile soils' at all levels in Nepal. Long-term commitment is more important than donating considerable sums of money for a short period.

### **6. Learning across borders**

LI-BIRD has developed an approach that may serve as inspiration for organizations in other parts of the world working with community-based agrobiodiversity management. In particular, DF-partners in other countries could benefit considerably by learning about how LI-BIRD responds to the needs of the target groups as well as the institutional and financial sustainability that the approach demonstrates. Moreover, LI-BIRD may also learn from long-standing organizations in other countries, such as Ethio-Organic Seed Action (EOSA) in Ethiopia. Here LI-BIRD could learn new methods to capitalize on the diversity that is conserved, by systematically exploring and developing it through specific methods of participatory varietal selection – establishing a continuum, from conservation to sustainable use. Developing similar methods in

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Nepal would not only respond to the needs of target groups (as expressed in interviews): it would also clearly demonstrate the economic value of conserved varieties in times of climate change. Also exchanges on the development of value-chain approaches to the marketing of diversity-based produce would be mutually advantageous, to further develop the potentials for economic returns to the farmers involved, as seen in several cases in Nepal. DF could enhance and strengthen the impact and sustainability of its agrobiodiversity programmes by facilitating learning between and among its partners, across borders.

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# Attachments

## A. List of documents and literature

### Programme documents

Applications from LI-BIRD to DF:

- Final Proposal CBM Nepal (2008)
- CBM-SA Regional Programme Proposal 2010–2013 (2009)
- CBM-SA Project Application: Long-term Strategic Document 2014–2016 (2014)
- CBM-SA Application 2015–2016 (2015)
- CBM-SA Application 2016 (2016)

Reports from LI-BIRD to DF:

- CBM – Nepal Half-Yearly Report 2009
- CBM – Nepal Annual Report 2010
- CBM – Nepal Annual Progress Report 2011
- CBM – Nepal Annual Progress Report 2012
- CBM – SA Annual Progress Report 2009
- CBM – SA Annual Report 2010
- CBM – SA Annual Report 2011
- CBM – SA Annual Report 2012
- CBM – SA Annual Progress Report 2013
- CBM – SA Annual Progress Report 2014
- CBM – SA Multi-year Report 2012 – 2015 (2015)
- CBM – SA Final Programme Completion Report 2012 – 2016 (2017)

Evaluation Report:

- Carine Pionetti (2012): Community-based Biodiversity Management South-Asia Programme (CBM-SA) Evaluation Report (final). For the Development Fund

Other programme-related documents:

- Subedi, A., S.K. Maharjan, S. Silwal, R. Devkota, D. Upadhyaya, S. Pandey and B. Bhandari (2009): Community-based Biodiversity Management in Nepal: Site Selection Report. Pokhara, Nepal: Local Initiatives for Biodiversity, Research and Development (LI-BIRD).
- LI-BIRD (undated, after 2009): Community-based Biodiversity Management (CBM), Nepal – Findings of the baseline survey on socioeconomic and agricultural biodiversity.

- Various publications from LI-BIRD, *inter alia* annual reports and strategy

### Selected policy documents

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*Some of the publications above have been funded or co-funded by the Development Fund through the programme. Many of them are based on experiences from implementation the programme. Not reflected here are flyers and handbooks published by LI-BIRD and DF in Nepali under the programme.*

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## B. List of interviews and interviewees in Nepal

**1 October 2018:**

**Meeting at LI-BIRD's Programme Coordination Office in Kathmandu**

1. Balaram Thapa, Executive Director, LI-BIRD (M)
2. Pitambar Shrestha, Team Leader, LI-BIRD (M)
3. Purushottam P. Khatiwada, Team Leader, LI-BIRD (M)
4. Kanta Singh, Translator, Consultant (F)

**2 October 2018:**

**Meeting with the board of Kanchan Biodiversity Conservation and Development committee (BCDC), Shivagunj, Jhapa**

1. Dilli Paudel, Chairperson, Kanchan Biodiversity Conservation and Development Committee (M)
2. Narmaya Karki, Vice-chair, Kanchan Biodiversity Conservation and Development Committee (F)
3. Benu Prasad Adhikari, Secretary, Kanchan Biodiversity Conservation and Development Committee (M)
4. Rama Kandel, Vice-secretary, Kanchan Biodiversity Conservation and Development Committee (F)
5. Ramesh Dhakal, Treasurer, Kanchan Biodiversity Conservation and Development Committee (M)
6. Januka Devi Magar, Social mobilizer, Kanchan Biodiversity Conservation and Development Committee (F)
7. Dilli Ram Kafle, Board member, Kanchan Biodiversity Conservation and Development Committee (M)
8. Meena Chapagain, Board member, Kanchan Biodiversity Conservation and Development Committee (F)
9. Nisu Laksam, Board member, Kanchan Biodiversity Conservation and Development Committee (F)
10. Devendra Paudel, Board member, Kanchan Biodiversity Conservation and Development Committee (M)
11. Shree Prasad Rajbanshi, Board member, Kanchan Biodiversity Conservation and Development Committee (M)
12. Ganga Prasad Shrestha, Board member, Kanchan Biodiversity Conservation and Development Committee (M)
13. Leknath Sapkota, Board member, Kanchan

Biodiversity Conservation and Development Committee (M)

**2 October 2018:**

**Farm visit in Shivagunj, Jhapa**

1. Narmaya Karki (with family), Farmer and Vice Chair, Kanchan Biodiversity Conservation and Development Committee (F)

**2 October 2018: Meeting with Anamlbiu seed company, Jhapa branch**

1. Mahendra Chaudhary, Seed Production Officer, Anamlbiu Seed Company Pvt. Ltd. (M)

**3 October 2018:**

**Visiting the Rice Diversity Block, Shivagunj**

1. Dilli Paudel, Chair, Kanchan Biodiversity Conservation and Development Committee (M)
2. Devendra Paudel, Board Member, Kanchan Biodiversity Conservation and Development Committee (M)
3. Shree Prasad Rajbanshi, Board Member, Kanchan Biodiversity Conservation and Development Committee (M)
4. Januka Devi Magar, Social Mobiliser, Kanchan Biodiversity Conservation and Development Committee (F)
5. Ramesh Dhakal, Treasurer, Kanchan Biodiversity Conservation and Development Committee (M)
6. Tara Dahal, Non-member (M)

**3 October 2018:**

**Farm visit in Shivagunj, Jhapa**

1. Shree Prasad Rajbanshi, Farmer and Board Member, Kanchan Biodiversity Conservation and Development Committee (M)

**3 October 2018:**

**Farm visit in Shivagunj, Jhapa**

1. Parmananda Acharya, Farmer and Member, Kanchan Biodiversity Conservation and Development Committee (M)

**3 October 2018:**

**Farm visit in Shivagunj, Jhapa**

1. Devendra Paudel (and family), Farmer and Board Member, Kanchan Biodiversity Conservation and Development Committee (M)

**3 October 2018:**

**Meeting with members of Kanchan Biodiversity Conservation and Development Committee,**

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## Shivagunj

1. Dilli Paudel, Chair, Kanchan Biodiversity Conservation and Development Committee (with biodiversity groups) (M)
2. Narmaya Karki, Vice-chair, Kanchan Biodiversity Conservation and Development Committee (F)
3. Benu Prasad Adhikari, Secretary, Kanchan Biodiversity Conservation and Development Committee (M)
4. Rama Kandel, Vice-secretary, Kanchan Biodiversity Conservation and Development Committee (F)
5. Ramesh Dhakal, Treasurer, Kanchan Biodiversity Conservation and Development Committee (M)
6. Dilli Ram Kafle, Board member, Kanchan Biodiversity Conservation and Development Committee (M)
7. Meena Chapagain, Board member, Kanchan Biodiversity Conservation and Development Committee (F)
8. Nisu Laksam, Board member, Kanchan Biodiversity Conservation and Development Committee (F)
9. Devendra Paudel, Board member, Kanchan Biodiversity Conservation and Development Committee (M)
10. Rama Kandel, Board member, Kanchan Biodiversity Conservation and Development Committee (F)
11. Shree Prasad Rajbanshi, Board member, Kanchan Biodiversity Conservation and Development Committee (M)
12. Ganga Prasad Shrestha, Board member, Kanchan Biodiversity Conservation and Development Committee (M)
13. Sharmila BK, Member, Jorpokhari Biodiversity Group (F)
14. Pramananda Acharya, Member, Kankai Biodiversity Group (M)
15. Bhola Prasad Bhandari, Member, Milijuli Biodiversity Group (M)
16. Maiya Tudu, Member, Saraswoti Biodiversity Group (F)
17. Uma Paudel, Member, Saraswoti Biodiversity Group (F)
18. Narbada Kafle, Member, Saraswoti Biodiversity Group (F)
19. Ram Kumar Tajpuriya, Member, Saraswoti Biodiversity Group (M)
20. Jhalendra Bhattarai, Member, Manakamana Biodiversity Group (M)
21. Ranga Prasad Rijal, Member, Manakamana

- Biodiversity Group (M)
22. Ratna Prasad Dhakal, Member, Kankai Biodiversity Group (M)
23. Pandab Thakur, Member, Saraswoti Biodiversity Group (M)
24. Sita Ram Rajbanshi, Member, Manakamana Biodiversity Group (M)
25. Sukhlal Rajbanshi, Member, Saraswoti Biodiversity Group (M)
26. Durga Basnet, Member, Manakamana Biodiversity Group (F)
27. Shushila Basnet, Member, Manakamana Biodiversity Group (F)
28. Indira Katwal, Non-member (F)
29. Radha Maji, Non-member (F)
30. Amal Prasad Chaudhary, Non-member (M)

## 3 October 2018:

### Meeting with female members of Kanchan Biodiversity Conservation and Development Committee, Shivagunj

1. Narmaya Karki, Vice-chair, Kanchan Biodiversity Conservation and Development Committee (with biodiversity groups) (F)
2. Rama Kandel, Vice-secretary, Kanchan Biodiversity Conservation and Development Committee (F)
3. Meena Chapagain, Board member, Kanchan Biodiversity Conservation and Development Committee (F)
4. Nisu Laksam, Board member, Kanchan Biodiversity Conservation and Development Committee (F)
5. Sharmila BK, Member, Jorpokhari Biodiversity Group (F)
6. Maiya Tudu, Member, Saraswoti Biodiversity Group (F)
7. Uma Paudel, Member, Saraswoti Biodiversity Group (F)
8. Narbada Kafle, Member, Saraswoti Biodiversity Group (F)
9. Shushila Basnet, Member, Manakamana Biodiversity Group (F)
10. Indira Katuwal, Non-member (F)
11. Radha Maji, Non-member (F)

## 3 October 2018:

### Meeting with non-members, Shivagunj, Jhapa

1. Ambika Prasad Adhikari, Farmer (M)
2. Kumar Mainali, Farmer (M)
3. Amal Prasad Chaudhary, Farmer (M)
4. Dhana Maya Gimiri, Farmer (F)

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### 3 October 2018:

#### Debriefing with members of the committee, Shivagunj, Jhapa

1. Dilli Paudel, Chair, Kanchan Biodiversity Conservation and Development Committee (M)
2. Benu Prasad Adhikari, Secretary, Kanchan Biodiversity Conservation and Development Committee (M)
3. Ramesh Dhakal, Treasurer, Kanchan Biodiversity Conservation and Development Committee (M)
4. Januka Devi Magar, Social Mobiliser, Kanchan Biodiversity Conservation and Development Committee (F)
5. Dilli Ram Kafle, Board Member, Kanchan Biodiversity Conservation and Development Committee (M)
6. Sitaram Rajbanshi, Board Member, Kanchan Biodiversity Conservation and Development Committee (M)
7. Shree Prasad Rajbanshi, Board Member, Kanchan Biodiversity Conservation and Development Committee (M)

### 3 October 2018:

#### Visiting the community seed bank (CSB) of the Committee and its office

1. Januka Devi Magar, Social Mobiliser and Manager of the CSB, Kanchan Biodiversity Conservation and Development Committee (F)

### 3 October 2018:

#### Farm visit in Shivagunj

*With: Saraswati and Bhola Bhandari with family members*

1. Saraswati Bhandari, Farmer and Member, Kanchan Biodiversity Conservation and Development Committee (F)
2. Bhola Bhandari (and family), Farmer and Member, Kanchan Biodiversity Conservation and Development Committee (M)

### 4 October 2018:

#### Visiting Anamolbiu Private Limited, at the research site and the branch office in Surunga, Jhapa

1. Mahendra Chaudhary, Seed Production Officer, Anamolbiu Private Limited (seed company) (M)

### 4 October 2018:

#### Meeting with Shivasatakshi Municipality and Ward Councils, Shivagunj, Jhapa

1. Chandra Kumar Sherma, Mayor, Shivasatakshi Municipality (M)

2. Bhojkumari Nepal, Vice Mayor, Shivasatakshi Municipality (F)
3. Nabin Ejam, Chair, Shivasatakshi, Ward Number -7 (M)
4. Dhana Raj, Secretary, Shivasatakshi, Ward Number -7 (M)
5. Rima Paudel, Ward Member, Shivasatakshi, Ward Number -7 (F)
6. Tek Bahadur Pande, Office Secretary, Shivasatakshi, Ward Number -7 (M)
7. Bir Bahadur Maji, Ward Member, Shivasatakshi, Ward Number -7 (M)
8. Manoj Karki, Chair, Shivasatakshi, Ward Number-6 (M)
9. Anil Acharya, Ward Member, Shivasatakshi, Ward Number-6 (M)
10. Bishnu Paudel, Ward Member, Shivasatakshi, Ward Number-6 (M)
11. Baljeet Rai, Ward Member, Shivasatakshi, Ward Number-2 (M)
12. Dili Ram Kafle, Ward Member, Shivasatakshi, Ward Number-6 (M)
13. Kamal Karki, Ward Member, Shivasatakshi, Ward Number-1 (M)
14. Shree Prasad Rajbanshi, Ward Member, Shivasatakshi, Ward Number-7 (M)
15. Devendra Paudel, Ward Member, Shivasatakshi, Ward Number-7 (M)
16. Chandra Prasad, Ward Member, Shivasatakshi, Ward Number-7 (M)
17. Narmaya Karki, Vice Chair, Kanchan Biodiversity Conservation and Development Committee (F)
18. Meena Chapagain, Board Member, Kanchan Biodiversity Conservation and Development Committee (F)

### 4 October 2018:

#### Meeting with the first president of the Committee at Shivagunj

1. Ratna Prasad Dhakal, Founding Chair, now Member, Kanchan Biodiversity Conservation and Development Committee (M)

### 4 October 2018:

#### Meeting with previous DADO and extension officers engaged in the previous CBM-Nepal Programme, Bhadrapur, Jhapa

1. Narendra Khatiwada, Chief Account Officer, District Forest Office (M)
2. Prakash Kumar Dangi, Senior agriculture Officer, DADO (Ex) (M)
3. Rajendra Prasad Kharel, Plant Protection

- Officer, Rubber Zone (M)
4. Laxmi Prasad Guragain, Adm. Assistant, Rubber Zone (M)
  5. Prakash Mani Kafle, Ex-Planning Officer, DADO (Ex) (M)
  6. Arjun Niraula, JTA, DADO (Ex) (M)

#### 5 October 2018:

##### Visiting the Ministry of Agriculture and Livestock Development, Kathmandu

1. Bidya Pandey, Senior Agriculture Development Officer, Chief of the Section and responsible for Gender and Social Inclusion, Ministry of Agriculture and Livestock Development, Agrobiodiversity and Environment Section (F)

#### 5 October 2018:

##### Visiting the National Agricultural Genetic Resources Centre, Kathmandu

1. Deepa Singh Shrestha, Senior Scientist (Horticulture), National Agricultural Genetic Resources Centre (F)
2. Krishna Hari Ghimire, Senior Scientist (Plant Breeding), National Agricultural Genetic Resources Centre (M)

#### 5 October 2018:

##### Visiting Bioversity International, Nepal Office

1. Devendra Gauchan, National Project Manager, Bioversity International, Nepal Office (M)

#### 6 October 2018:

##### Meeting with the Board of Biodiversity Conservation Committee, Purkot, Bhanu Municipality, Tanahun District

1. Rajan Thapaliya, Secretary, Biodiversity Conservation Committee (M)
2. Bikal Raj Adhikari, Chairperson, Biodiversity Conservation Committee (M)
3. Chamnarayan Shrestha, Advisor, Biodiversity Conservation Committee (M)
4. Sitaram Bajgain, Board Member, Biodiversity Conservation Committee (M)
5. Rishiram Paudel, Staff, Biodiversity Conservation Committee (M)
6. Sujan Bahadur Acharya, Board Member, Biodiversity Conservation Committee (M)
7. Laxmi Kumal, Staff, Biodiversity Conservation Committee (F)
8. Ram Bahadur Ghimire, Board Member, Biodiversity Conservation Committee (M)
9. Laxmi G.C., Staff, Reproductive Health Office (F)

10. Krishna Bahadur Bhujel, Office helper, Ward Office (M)
11. Rajendra Dev Panday, Administrative Officer, Bhanu Municipality (M)
12. Durga Raut, District Member, Nepal Communist Party (M)

#### 6 October 2018:

##### Excursion to the biodiversity block and the earthquake proof seed storage building

1. Rajan Thapaliya, Secretary, Biodiversity Conservation Committee (M)

#### 6 October 2018:

##### Meeting with Ex Purkot Village Development Committee Secretary at Purkot

1. Chamnarayan Shrestha, Ex Secretary, Purkot Village Development Committee (M)

#### 7 October 2018:

##### Farm visit in Purkot

1. Rajan Thapaliya, Farmer and Secretary, Biodiversity Conservation Committee (M)
2. Maiya Thapaliya, Farmer (F)
3. Shanta Thapaliya, Farmer (F)

#### 7 October 2018:

##### Farm visit in Purkot (non-members)

1. Dhak Bahadur Kumal, Farmer (M)
2. Mangali Kumal, Farmer (F)

#### 7 October 2018:

##### Farm visit in Purkot

1. Madhumaya Kumal, Farmer and Member, Biodiversity Conservation Committee (F)

#### 7 October 2018:

##### Meeting with students who are interns in the Committee (non-members) at Purkot

1. Rabin Rai, Student/Intern Junior Technical Assistant, Biodiversity Conservation Committee (M)
2. Shankar Bhujel, Student/Intern Junior Technical Assistant, Biodiversity Conservation Committee (M)
3. Kedar Paudel, Student/Intern Junior Technical Assistant, Biodiversity Conservation Committee (M)

#### 7 October 2018:

##### Meeting with members of Purkot Community Biodiversity Conservation Committee, in Purkot, Tanahun

1. Hem Lal Khatri, Member Secretary, Biodiversity Conservation Committee (M)

2. Boj Raj Paudel, Coordinator, Seed Production, Biodiversity Conservation Committee (M)
3. Chamnarayan Shrestha, Advisor, Biodiversity Conservation Committee (M)
4. Sitaram Bajgain, Member, Biodiversity Conservation Committee (M)
5. Kamala BK, Member, Biodiversity Conservation Committee (F)
6. Bek Bahadur Thapa, Member, Biodiversity Conservation Committee (M)
7. Samjana Bagale, Member, Biodiversity Conservation Committee (F)
8. Khadananda Dhakal, Member, Biodiversity Conservation Committee (M)
9. Shankar Pariyar, Member, Biodiversity Conservation Committee (M)
10. Laxmi Shrestha, Member, Biodiversity Conservation Committee (F)
11. Ganga BK, Member, Biodiversity Conservation Committee (F)
12. Nirmaya Shrestha, Member, Biodiversity Conservation Committee (F)
13. Krishna Bhujel, Member, Biodiversity Conservation Committee (M)
14. Sukumaya Kumal, Member, Biodiversity Conservation Committee (F)
15. Sita Kumal, Member, Biodiversity Conservation Committee (F)
16. Mangali Kumal, Member, Biodiversity Conservation Committee (F)
17. Ujeli Nepali, Member, Biodiversity Conservation Committee (F)
18. Rubimaya Kumal, Member, Biodiversity Conservation Committee (F)
19. Khila Sharma Bagale, Member and Chair, Biodiversity Conservation Committee, Pragati Seed Production Group (M)
20. Tika Ram Dhakal, Member and Chair, Biodiversity Conservation Committee, Haryali Agriculture Cooperative (M)
21. Rishiram Paudel, Staff, Biodiversity Conservation Committee, Haryali Agriculture Cooperative (M)
22. Laxmi Kumal, Staff, Biodiversity Conservation Committee, Haryali Agriculture Cooperative (F)
23. Rabin Rai, Intern (non-member), Biodiversity Conservation Committee, Haryali Agriculture Cooperative (M)
24. Shankar Bhujel, Intern (non-member), Biodiversity Conservation Committee, Haryali Agriculture Cooperative (M)
25. Kedar Paudale, Intern (non-member),

Biodiversity Conservation Committee, Haryali Agriculture Cooperative (M)

26. Anita Tulachan, Nurse, Reproductive Health office (F)
27. Nid Khanal, Staff, Agriculture Office (M)
28. Bhim Prasad Dhital, Non-member (M)
29. Sharwan Shrestha, Non-member (M)
30. Laxmi G.C., Non-member (F)
31. Shiva Bohara, Non-member (M)

#### 7 October 2018:

#### Meeting with female members of Purkot Community Biodiversity Committee, Purkot

1. Kamala BK, Member, Biodiversity Conservation Committee (F)
2. Samjana Bagale, Member, Biodiversity Conservation Committee (F)
3. Laxmi Shrestha, Member, Biodiversity Conservation Committee (F)
4. Ganga BK, Member, Biodiversity Conservation Committee (F)
5. Nirmaya Shrestha, Member, Biodiversity Conservation Committee (F)
6. Sukumaya Kumal, Member, Biodiversity Conservation Committee (F)
7. Sita Kumal, Member, Biodiversity Conservation Committee (F)
8. Mangali Kumal, Member, Biodiversity Conservation Committee (F)
9. Ujeli Nepali, Member, Biodiversity Conservation Committee (F)
10. Rubimaya Kumal, Member, Biodiversity Conservation Committee (F)
11. Laxmi Kumal, Member, Biodiversity Conservation Committee (F)
12. Anita Tulachan, Nurse, Reproductive Health Office (F)
13. Laxmi G.C., Non-member, Reproductive Health Office (F)

#### 7 October 2018:

#### Meeting with non-members, Purkot, Tanahun

1. Shiva Bohara, Farmer (M)
2. Uma Shrestha, Hotel entrepreneur, (Hotel in Purkot) (F)
3. Laxmi G.C., Staff, Reproductive Health Office (F)

#### 7 October 2018:

#### Sightseeing in the CSB with registry and at the rice diversity block, Purkot, Tanahun

1. Rajan Thapaliya (with other members of the board), Secretary, Biodiversity Conservation

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Committee (M)

**8 October 2018:**

**Excursion to the seed production site (producing for the BCDC)**

1. Khila Sharma Bagale (with members of the board), President, Pragati Seed Production Group (M)

**8 October 2018:**

**Meeting with relevant ward councils from Bhanu Municipality, Purkot, Tanahun**

1. Nilan Sanjiba Shrestha, Ward Chair, Bhanu Municipality, Ward 9 (M)
2. Sitaram Bajgain, Member, Biodiversity Conservation Committee (M)
3. Bharat Lal Dhakal, Ward Chair, Bhanu Municipality, Ward 8 (M)
4. Rewati Devi Shrestha, Ward Member, Bhanu Municipality (F)
5. Hari Prasad Wagle, Ward Member, Bhanu Municipality (M)
6. Rajan Thapaliya, Secretary, Biodiversity Conservation Committee (M)
7. Chamnarayan Shrestha, Advisor, Biodiversity Conservation Committee (M)
8. Khim Bahadur Pariyar, Member, Biodiversity Conservation Committee (M)
9. Bikal Raj Adikari, Member, Biodiversity Conservation Committee (M)
10. Rishiram Paudel, Member, Biodiversity Conservation Committee (M)
11. Chandra Bahadur Nepali, Member, Biodiversity Conservation Committee (M)
12. Ganesh Man Shrestha, Member, Biodiversity Conservation Committee (M)
13. Rudra Nidhi Bhandari, Council Member, Bhanu Municipality, Ward 9 (M)
14. Tanka Bahadur Kumal, Council Member, Bhanu Municipality, Ward 8 (M)
15. Tara Devi Chhetri, Council Member, Bhanu Municipality, Ward 9 (F)

**8 October 2018:**

**Meeting with previously involved LI-BIRD staff, Pokhara, LI-BIRD headquarter**

1. Pratap Shrestha, Former Executive Director until 2010, LI-BIRD (now Regional Representative and Scientific Advisor of USC Canada) (M)
2. Bharat Bhandari, Programme Operations Director, LI-BIRD (involved in the programme

2009 – 2011) (M)

3. Ram Bahadur Rana, Head of Programmes, LI-BIRD (was engaged in the research conducted through the In-Situ Project, that led to the CBM-project) (M)

**9 October 2018:**

**Meeting at Agricultural Development Section of Pokhara Municipality, Pokhara**

1. Manahar Kadariya, Chief Agriculture Development Officer, Agricultural Development Section, Pokhara Municipality (M)

**10 October 2018:**

**Debriefing with LI-BIRD, LI-BIRD's office in Kathmandu**

1. Balaram Thapa, Executive Director, LI-BIRD, Kathmandu Office (M)
2. Bikash Paudel, Program Development Director, LI-BIRD, Kathmandu Office (M)
3. Pitambar Shrestha, Team Leader, LI-BIRD, Kathmandu Office (M)
4. Purushottam Khatiwada, Team Leader, LI-BIRD, Kathmandu Office (M)
5. Roshan Pudasaini, Senior Program Officer, LI-BIRD, Kathmandu Office (M)

**10 October 2018:**

**Debriefing with LI-BIRD, LI-BIRD's office in Kathmandu**

1. Pitambar Shrestha, Team Leader, LI-BIRD (M)











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