



MID TERM EVALUATION

Integrated Livestock and Crop Conservation Programme (ILCCP)
Project/Award Number: 00048573/00042329



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Preface

This Mid Term Evaluation report sets out findings, lessons learnt and recommendations for the Integrated Livestock and Crop Conservation project (ILCCP). The report is developed in compliance with the terms of reference for the assignment. The conclusions and recommendations set out in the following pages are solely those of the evaluators and are not binding on the project management and sponsors.

The authors would like to thank all who assisted in the Mid Term Evaluation, particularly the PMU and UNDP Bhutan for providing technical and logistic support, and all the stakeholders who consented to be interviewed.

Abbreviations

ABC	Agro-biodiversity Conservation
ADAO	Assistant District Agriculture Officer
AEOs	Agriculture Extension Officers
AMS	Agriculture Marketing Services
AnGR	Animal Genetic Resource
AWP	Annual Work Plans
BUCAP	Biodiversity Use and Conservation in Asia Program
CNR	College of Natural Resources
DAMC	Department of Agricultural and Marketing Cooperatives
DoA	Department of Agriculture
DoF	Department of Forestry
DoFS	Department of Forest and Park Services
DoL	Department of Livestock
DPA	Department of Public Accounts
GEF	Global Environmental Facility
GNH	Gross National Happiness
IGRs	Indigenous Genetic Resources
ILCCP	Integrated Livestock and Crop Conservation Project
LEOs	Livestock Extension Officers
M&E	Monitoring and Evaluation
MDGs	Millennium Development Goals
MoAF	Ministry of Agriculture and Forest
MTE	Midterm Technical Evaluation
NBC	National Biodiversity Center
NEX	National Execution Procedures
OGTP	One Gewog Three Products
PD	Project Director
PGR	Plant Genetic Resource
PM	Project Manager
PMU	Project Management Unit
PPD	Planning and Policy Division
PSC	Project Steering Committee
RAP	Asia Regional Office
RCU	Regional Coordination Unit
RDCs	Research and Development Centers
RGoB	Royal Government of Bhutan
RMS	Risk Management System
RMS	Risk Management System
SMART	Specific, Measurable, Achievable, Relevant, Time Bound
TORs	Term of References
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Program

Glossary of Bhutanese words

Dzongkhag	Administrative unit – District
Gewog	Administrative unit – Block (comprising of several villages)
Nublang	Cattle breed originated in Ha District
Yuta	Local Horse breed

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Executive Summary

Background and objectives

The Integrated Livestock and Crop Conservation Project (ILCCP) has the overall objective of mainstreaming agro-biodiversity conservation into livestock and crop development policy and practices in Bhutan. The project is coordinated from the National Bio-diversity Center (NBC) in partnership with a number of agencies both within the Ministry of Agriculture and Forests (MoA) like the Departments of Agriculture, Forests and Marketing and Cooperatives and the Policy & Planning Division (PPD) at the central level and the District administrations, block administrations and beneficiary villagers.

The project's activities have been implemented in eight Dzongkhags located in four agro-ecological zones. It uses the "PAM" synonymous with the "Triple Gem" approach advocated by the MoAF in which for the ILCCP, value is added to traditional varieties and breeds by improving productivity, developing markets, and facilitating market accessibility. This is further facilitated by improved delivery of scientific information and technical support. Sustainability of the resulting benefits is assured through institutional and policy improvements and adaptive learning, dissemination and awareness.

Among the six livestock species targeted are yak, pigs, poultry, cattle (nublang), sheep, horse (Yuta). In crops - seven crop species namely buckwheat, millet, barley, maize, rice, legumes, and mustard are focused on by the project. These species were selected based on the degree of threat to their continuity and potential for commercialization to ensure sustained crop cultivation or animal husbandry by communities.

The purpose of this Mid Term Evaluation is to assess if the project concept and design, including implementation mechanism adopted, are appropriate in realizing its immediate objectives and expected outputs by implementing the activities identified. Guidelines developed by the GEF Evaluation Office were followed to conduct the MTE

Findings

At a strategic level, the MTE found that the project is highly relevant as it is well aligned with the main pillars of the Gross National Happiness (GNH), the RNR sector goals for the current Five Year Plan and the UNDAF 2008-2012.

For outcome 1 (documentation and characterization) of the project, the significant achievements of the ILCCP are contribution to ex situ conservation of Animal and Plant Genetic Resources through up gradation of conservation and recording facilities and training of seven NBC staff. The project also trained 27 extension workers (both agriculture and livestock), seven MoA officials, three researchers, and two NBC staff through ex country training and study tours on agro-biodiversity management. There has, however, been no progress in conservation of wild relatives of crop and animal species.

For outcome 2 (support to farmers in conserving agro-biodiversity), from a baseline situation of low awareness and capacity in agro-biodiversity among implementing staff, and a concerted capacity-building programme of staff (extension staff, researchers and senior staff from the MoAF) through short-term training and study tours in the region, the implementing staff at the field level have been able to facilitate a range of activities. The implementers have also been able to engender cross learning among communities in some locations on conservation of traditional species of crops and livestock.

For Outcome 3 (value of traditional varieties and breeds to farmers is increased through yield enhancement), the extension staff with assistance from researchers and other programmes such as the Organic Agriculture Programme have provided farm infrastructure (animal sheds), production inputs (improved seeds, silo bins, seed bulls, farm tools), training of approximately 200 farmers across the sites on improved technology leading to increased yields and subsequent in situ conservation for some plant and animal species. From a few sites, it has been ascertained that farmers have benefited. For example, a group of farmers within one year in Bumthang have sold buckwheat flour and products worth Nu. 120,000/-. However, due to production limitations, not all activities are achieving the objective of in situ conservation. Also, monitoring the extent of increase in yields has been far from successful owing to ambitious indicators formulated for monitoring of yields and a pending impact assessment.

For outcome 4 (access to new and larger markets) and 5 (capacity to access existing and emerging markets), there have been efforts by trained extension staff to guide value addition and to link some communities' products with markets with only fair levels of success. However, a solid marketing strategy for traditional varieties seems to be the way to go. A shortcoming noted is that the present target indicators of marketing of one product per site seems unachievable given potential demand for some products only. Further, the activity on certification of traditional varieties needs to be re-visited in the absence of a carefully thought out marketing strategy.

For outcome 6 (capacity of the MoAF to mainstream agro biodiversity conservation into the attainment of food security and self-sufficiency), progress is limited to inclusion of agro-biodiversity as one of the programmes in the 10th Five Year Plan and planning of a study tour for MoAF executives. Current opportunities are on-going work on developing the Bio-diversity Policy and contribution by the NBC to work on National Food Security and Nutrition Policy spearheaded by the PPD.

For Outcome 7 (increased sustainability of project impacts through monitoring, learning, adaptive feedback and evaluation, dissemination of lessons learned and awareness generation), the project used several means to disseminate awareness of the programme such as participation in an agro-biodiversity fair, presentation at the RNR conference, dissemination of materials published and distributed and TV programmes aired to create awareness as well as organizing a seminar at the CNR and hosting interns.

In terms of cross-cutting issues, the project is clearly pro-poor potential to benefit farmers through yield enhancement and sale of traditional varieties in the market. Organising farmers into groups for joint production and marketing improves governance at the lowest level inducing decision-making processes and thereby enhancing social cohesion and capital. Most of the beneficiaries are women that are involved in small livestock and minor crops and also most project management personnel are women thereby sufficiently addressing gender concerns.

In terms of project efficiency, the project has the minimum number of staff which often is stretched to limits especially when monitoring many project activities scattered across the country becomes a formidable task. Remoteness of project locations will further compound project outreach in marketing of products.

In terms of sustainability, the project has ensured sustainability of ex situ conservation through investments in equipment and human resources. The project has also significantly contributed to developing technical capacity of DoL, NLBP, DoA including RDCs and has raised awareness on importance of agro-biodiversity conservation at various levels. The project has targeted various products which are already in high demand. This will ensure the sustainability of in situ conservation, provided an effective marketing strategy is developed. Due to issues with market access, marketability, or approach to conservation, some targeted products are not suitable for in situ conservation. Some of the challenges to sustainability as a result of project activities carried out are inability of farmers to meet recurrent costs of maintenance of facilities (poultry, piggery and sheep sheds) and cost of formulated feed. Besides, investments made for a sole beneficiary (for example sheep) in the long run will not be sustainable.

An assessment of the project management and administration reveals generally good ownership of the project at all levels. Turnover of trained staff is a concern. There is good participation of all stakeholders with a stronger emphasis on participation of the DAMC and PPD in the second phase of the project to achieve project outcomes with their contribution. There are strong on-going linkages with other programmes within the MoAF at all levels. Closer collaboration with the DAMC and other Programmes of the MoAF such as National Post-harvest Management Program, Seed and Plant Development Program, Horticulture/Cash Crop Development Program, Rural Access Program, and Farm Mechanization Program will be to the advantage of the ILCCP. The UNDP CO is providing management support and also monitors the project. UNDP's role in providing technical review services for consultants' outputs could be strengthened.

Monitoring and evaluation, an indispensable component of the project can be improved for ILCCP especially in standardizing reporting formats (annual work plan and budgets, progress

reports, site visits). There is an urgent need to institute reporting of quantitative indicators on project outputs against each outcome to track progress more meaningfully. The Risk Management System of UNDP could be a useful tool if CO staff is trained on its use. Timely fund disbursements and delivery of funds by processing agencies in the government such as the Department of Public accounts to the implementing agencies would ensure time and season-bound activities such as crop development are carried out.

In relation to the project design, the number of outcomes, outputs and project sites and commodities chosen pose immense administrative and monitoring challenges. Several targets set in terms of indicators are too ambitious to be achievable while some indicators are not measurable. Clear linkages between outcomes to indicators and outputs also make monitoring difficult. It is noted that two of the outcomes related to marketing overlap. Enhancement of yields not incorporated in the design would have to be verified by an impact assessment study needed soon. A few outputs (certification system and formation of cooperatives) given the context, capacity of implementers and project beneficiaries and stage in the project are not useful to monitor anymore.

Key Recommendations

1. Review the log frame to formulate outputs and associated indicators;
2. Scale down/revise some indicators
3. Merge outcomes 4 and 5 which are overlapping;
4. Prioritise outcomes for emphasis in this phase depending on the level of achievements so far;
5. Prioritise commodities and sites based on level of success experienced so far;
6. Institute collaborative linkages and joint programming of activities with agencies in the MoAF guided by the outcomes that need to be achieved during the second half of the project.

7. Enhance capacity of the PMU through recruitment of at least two additional staff to assist with planning and M&E of the project.
8. Standardise planning and monitoring formats utilising the opportunity provided by the NMES/PlaMS

1. Introduction

In the recent past, agro-biodiversity has been assuming great significance. Globally as well as nationally, increasing attention is being drawn to the state of animal and crop genetic resources and the importance of their role in the quest for food security as well as sufficiency.

1.1. Background and Context

Bhutan is gifted with rich agro-biodiversity and many of its native plants and animal resources have been identified as having important medicinal and agricultural value. The very high levels of agro-biodiversity that characterize Bhutan's farming systems are a major and very effective element of a strategy to adapt to environmental change. However, the country is gradually experiencing a loss of indigenous agro-biodiversity, due to a range of factors posing serious threats to its indigenous agro-biodiversity.

Linked to these concerns, the Integrated Livestock and Crop Conservation project (ILCCP) was set up in order to "*promote the conservation and preservation of important agro-biodiversity*". Its principles are aligned with increasing production, accessibility and marketing of indigenous crop and livestock products to ensure that farming of traditional varieties of crops and breeds of animals still remains a viable option for most farmers. This project is anticipated to provide the opportunity both to contribute to household food security and increase family incomes which would ultimately lead to the continued existence and cultivation of selected agro-biodiversity and strengthen their existence *in situ*.

The ILCCP project works in four agro-ecological zones covering the 8 Dzongkhags of Chhukha, Samtse, Bumthang, Pema Gatsel, Tsirang, Haa, Trashigang & Zhemgang, and seeks to ensure that the diversity of varieties and breeds currently found in the target sites continue to contribute to a profitable and sustainable agricultural economy. The project adopts the "Triple Gem" concept of the MoAF (PAM), in which value is added to traditional varieties and breeds by improving productivity, developing markets, and facilitating market accessibility. This will be further facilitated by improved delivery of scientific information and technical support. Sustainability of the resulting benefits will be assured through institutional and policy improvements and adaptive learning, dissemination and awareness.

1.2. Purpose of Evaluation

The purpose of this Mid Term evaluation is to assess if the project concept and design, including implementation mechanism adopted, are appropriate in realizing its immediate objectives and expected outputs by implementing the activities identified. The findings and lessons learnt will be incorporated into the project to enable necessary adjustments in the work plan and the project document, and define future steps to sustain activities after July 2012.

Detailed TORs of the MTE are attached in Annex 1.

2. The ILCCP and Its Development Context

The goal of the ILCCP project is to ensure that the attainment of food security and self sufficiency in Bhutan is based on the maintenance of adequate levels of indigenous agro-biodiversity.

The overall objective of this project is to mainstream agro-biodiversity conservation into livestock and crop development policy and practices in Bhutan.

The project has major technical, policy, and practice components focused at ex situ and in situ conservation of agro-biodiversity, mainstreaming agro-biodiversity into the program and fiscal policies of RGoB, and awareness raising on the importance of agro-biodiversity.

2.1. Stakeholders and Targeted Beneficiaries

The project is implemented under UNDP National Execution (NEX) procedures and the lead executing agency for the project is the National Biodiversity Center (NBC), a non departmental agency of the Ministry of Agriculture and Forest (MoAF).

The project is implemented in association with relevant departments of the MoAF, including the Department of Agriculture (DoA), Department of Livestock (DoL), Department of Forestry (DoF), Department of Agricultural and Marketing Cooperatives (DAMC), and Planning and Policy Division (PPD).

Participating farmer groups in eighteen sites across eight Dzongkhags on one hand are project stakeholders by showing their interest in in situ conservation, and on the other hand project beneficiaries as they receive technical support and inputs from the project in production and marketing of selected plant and livestock Indigenous Genetic Resources (IGRs).

2.2. Salient Project Features

Project Duration and Implementation Time Frame: The project duration is July 2007 – June 2012 with a total budget of USD 1.6 Million. During 2007-2008, the project worked on preparatory activities, such as engaging relevant MoAF departments and conducting the baseline survey. Due to the large scale structural changes in the country's government in 2008, field implementation activities started in early 2009.

Project Outcomes and Outputs: The project comprises of seven outcomes and 31 outputs. The following provides a summary of the project outcomes. Detailed project outcomes and outputs are provided in Annex 2.

- Outcome 1: The **documentation and characterization of indigenous genetic resources** (including wild relatives) supports conservation and development policy, prioritization of conservation efforts and the identification of opportunities for income generation.
- Outcome 2: Agricultural and livestock **development agencies are able to support farmers in conserving agrobiodiversity** through provision of relevant and timely technical information.
- Outcome 3: The value of traditional varieties and breeds to farmers is increased through **yield enhancement**
- Outcome 4: Traditional varieties and breeds have **access to new and larger markets**.
- Outcome 5: Farmers have the **capacity to access existing and emerging markets**.
- Outcome 6: At a systemic level, the **capacity of the MoAF** is adequate to mainstream agro biodiversity conservation into the attainment of food security and self-sufficiency.
- Outcome 7: Increased sustainability of project impacts through monitoring, learning, adaptive feedback and evaluation, **dissemination of lessons learned and awareness generation**.

Targeted Commodities: The project targets six livestock and seven crop species. These include yak, pigs, poultry, cattle (nublang), sheep, horse (Yuta), Buckwheat, millet, barley, maize, rice, legumes, and mustard.

For in situ conservation, these products are targeted in 18 sites situated across eight districts. A geographical distribution of the in situ conservation sites is given in Annex 3.

The project's ex situ conservation facilities are available at the NBC's animal and plant gene banks. For AnGR, ex situ efforts are coordinated with the DoL and for PGR, efforts are coordinated with DoA.

3. Approach and Methodology of Mid Term Evaluation

3.1. Approach

The MTE assessed and reviewed: the extent to which the overall project design remains valid; the project's concept, strategy and approach within the context of effective capacity development and sustainability; the approach used in design and whether the selected intervention strategy addressed the root causes and principal threats in the project area; the effectiveness and the methodology of the overall project structure, how effectively the project addressed responsibilities especially towards capacity building and challenges; and plans and potential for replication.

The MTE also assessed the extent to which project management has been effective, efficient and responsive; and the clarity of roles and responsibilities of the various institutional arrangements for project implementation, and the level of coordination between relevant players (including the oversight role by UNDP as GEF Implementing Agency, project execution role of the PCU, and project implementing role of various MoAF agencies and departments including DoA, DoL, DAMC, and PPD).

3.2. Methodology

Guidelines developed by the GEF Evaluation Office were followed to conduct the MTE¹. Hence, an assessment was undertaken of project results and sustainability of project outcomes. Also, the Monitoring and Evaluation and financial systems of the project were reviewed. Recommendations provided are based on the findings from this review.

The MTE was undertaken through a combination of desk research of project and related documents, interviews with implementing agency representatives, and Focus Group Discussions with project beneficiaries in selected site visits using structured interviews. A total of 31 person days were spent by the MTE mission, comprising in-country travel, meeting participation, desk research, write-up, and presentation.

3.2.1. Desk study, literature review

A comprehensive review of background literature provided by the PMU and UNDP was undertaken. These included the ILCCP project document, Project Implementation Reports, Annual Reviews and Work Plans, and Field Visit Reports, Baseline study, etc. In addition, research published through the project such as the books on Animal and Plant Genetic Resources of Bhutan were reviewed.

¹ Guidelines for Implementing and Executing Agencies to Conduct Terminal Evaluations, 2007

A complete list of these documents is available in Annex 4.

3.2.2. Structured Questionnaire

Following the literature review, a structured questionnaire was devised to be used during meetings with key implementation stakeholders including UNDP, PMU, various departments of MoA, Dzongkhag Extension staff, and farmers participating in the project.

The questionnaire focused on project objectives, anticipated outcomes, and outputs. In addition, the questionnaire was designed to obtain ratings on the project's relevance, effectiveness, and efficiency.

3.2.3. Key Stakeholder Interviews

In depth interviews were conducted with key project stakeholders, including the PMU at NBC, UNDP, DoA, DoL, PPD, and DAMC. Also, meetings were held with Dzongkhag Agriculture and Livestock administration and extension staff.

A detailed schedule of interviews is given in Annex 5.

3.2.4. Site Visits

The MTR visited four project sites and interviewed participating farmers from five sites, covering a range of project commodities including rice, maize, buckwheat, barley, poultry, and legumes.

During site visits, Focus Group Discussions were held with a total of 67 farmers including 19 men and 48 women farmers.

A detailed schedule of site visits is presented in Annex 6.

3.2.5. De-briefing on Preliminary Findings of MTE

At the end of site visits, a de-briefing was conducted by the MTE team in Thimphu on 26 March 2010, where 16 representatives from various MoAF departments participated. The de-briefing was chaired by the Director General of Livestock.

A list of de-briefing participants is presented in Annex 7.

3.3. Challenges in Conducting the Evaluation

The project's monitoring system is predominantly qualitative and prevented quantitative analysis for evaluation of outcomes. Hence, the report is based mostly on qualitative facts. To fill this gap somewhat, the evaluators obtained quantitative data where possible during in-depth interviews and discussions with stakeholders and beneficiaries. Also, examples obtained through these interviews are cited in the report to demonstrate progress or setbacks.

In addition, four of the seven project outcomes had no baseline information available at the time of project design. A subsequent baseline survey conducted was found to be unsatisfactory by the MTE team for major shortcomings such as insignificant sample size and lack of aggregated data. Therefore, no substantial baseline information was available to be benchmarked when assessing project effectiveness.

3.4. Evaluation Team

The evaluation team comprised of an International Consultant, Ms. Umm e Zia who has worked across South Asia and South East Asia on projects of Environmental Sustainability and Smallholder Agricultural Marketing; and a National Consultant, Mr. Saroj K. Nepal who has extensive experience in the social, agricultural and rural development sectors in Bhutan.

3.5. Structure of the Evaluation

This MTE report presents findings and main lessons based on the key factors of Relevance, Effectiveness, Efficiency, and Sustainability. It also reviews the elements of Project Design, Project Achievements, Management, and Financial Planning.

Other issues related to the Risk Management System (RMS) in ATLAS, and cross-cutting issues of Poverty Reduction, Governance, and Gender are also reviewed.

Finally, recommendations are presented for improvement in overall project design, implementation, and M&E to enable necessary adjustments for successful completion of project in 2012 and to sustain activities thereafter.

4. Findings of MTE

The following summarises the major findings of the MTE. It assesses the relevance, efficiency, effectiveness and sustainability of operational activities and results achieved by the project to-date by examining how the components, processes and outcomes contribute to the achievement of project goals and objectives.

4.1. Relevance

The project is highly relevant as it is well aligned with the main pillars of the Gross National Happiness (GNH), the RNR sector goals, the United Nations Development Assistance Framework (UNDAF) 2008-2012 to RGoB, and GEF Biodiversity Focal Area.

The project is aligned with the following three pillars of GNH:

- i. Environmental Conservation;
- ii. Preservation and Promotion of Culture; and
- iii. Sustainable and Equitable Socio-economic Development.

The project is aligned with three of the four RNR sector goals:

- i. Enhanced Food Security;
- ii. Enhanced Sustainable Rural Livelihoods Through Income Generating Opportunities; and
- iii. Conserve and Promote Sustainable Utilization of Forest and Water Resources.

Also, the project is aligned with UNDAF Outcomes 1, 4, and 5 as below:

- i. UNDAF OUTCOME ONE: By 2012, opportunities for generation of income and employment increased in targeted poor areas. (MDGs 1, 8);
- ii. UNDAF OUTCOME FOUR: By 2012, institutional capacity and people's participation strengthened to ensure good governance. (MDGs 1, 3, 8) ;
- iii. UNDAF OUTCOME FIVE: By 2012, national capacity for environmental sustainability and disaster management strengthened. (MDG 7).

The project is also aligned with Objective 2 of the GEF Biodiversity Focal Area.

Finally, the project activities are highly relevant in the context of biodiversity conservation as many of Bhutan's globally significant indigenous plant and animal resources are at risk of decline due to various threats posed by adoption of exotic breeds, human wildlife conflict, etc.

Conclusion: The project is aligned with the main pillars of the Gross National Happiness (GNH), the RNR sector goals, the United Nations Development Assistance Framework (UNDAF) 2008-2012 to RGoB, and GEF Focal Area on biodiversity.

5. Results

5.1. Effectiveness

When reviewing the progress the MTE found that the project has effectively made achievements under Outcomes 1, 2, 3, 4, 5, and 7. These are detailed below:

a. Under **Outcome 1** the project has effectively upgraded the Animal Genetic Resource (AnGR) facilities. Previously, ILCCP's predecessor project, the Netherland's funded Agro-biodiversity Conservation (ABC) project, focused on upgrading the Plant Genetic Resource (PGR) facility in Bhutan².

AnGR: At the start of ILCCP, the AnGR facilities were basic. The ILCCP contributed to upgradation of the AnGR human and technical capacity through training of two staff members in handling of LN2 plant, and two Gene Bank staff on collection, processing, and cryo-preservation of AnGR. In addition, the project has provided equipment including LN2 plant, straw printer, and tank roller.

Moreover, the AnGR database has been upgraded using MS Access. Accessing information from this database is much more efficient since it allows required information to be queried as opposed to the earlier system where information was available only in sequential form. However, one shortcoming noted was that photographs and pictures cannot be uploaded in this new database. Moreover, the person trained in using the new system is on long-term study leave (2-3 years) and others in the unit are not able to effectively use the database.

Also, 3000 doses of semen have been collected from poultry, ram, and swine and processed for conservation in AnGR Genebank and characterization of Poultry and Siri has been completed in two sites (outputs 1.2 & 1.5).

PGR: To upgrade human resource capacity, based on need assessment by the PMU, training has been provided to one Genebank staff on GR documentation and one staff on morphological

² The Netherlands funded Agro-biodiversity Conservation project ended in June 2005 and focused on ex situ conservation. In order to continue activities of agro-biodiversity conservation, the RGoB requested GEF for funding ILCCP. The activities proposed for ILCCP were based on the learnings from ABC project.

characterization in the Philippines. In addition, one Genebank staff was trained in Taiwan on vegetable seed processing & conservation.

Based on the on-going efforts in the MoAF of aligning personnel skills with department-specific mandates, it is foreseen that the trained staff will continue to serve at the NBC and utilize the newly acquired skill. When assessing continued utilization of training, instead of staff transfers, higher risk of discontinuation is associated with staff taking long leaves for higher education.

Moreover, the PGR documentation system has been upgraded using visual basics and SQL. This makes the system more user friendly by allowing user queries NBC staff and allows analysis for data related to germplasm tracing, distribution, recollection, characterization etc.

In terms of ex situ conservation of crops, 80 rice samples of Bhutanese origin were repatriated from IRRI and have been regenerated. Also, various germplasm samples have been collected from Bumthang, Haa, Chukha, Punatsangchu, and Trashigang for processing in the Plant Gene Bank (outputs 1.2 & 1.5).

Wild Relatives: Due to staff shortages at the PMU and technical expertise in identification and characterization of wild relatives, the project has made little progress on development of spatial databases on wild relatives (output 1.3) and taking measures to ensure conservation of endangered priority wild relatives (output 1.6). In this regard, only a dialogue has been initiated with the Department of Forest and Park Services (DoFS).

Moreover, the target set in project log frame to conserve ‘all wild relative species’ is ambitious and considering the project’s resources, may not be achieved during the project’s life time.

Outcome 1 - Conclusion and Recommendations:

- a. The project has supported the upgradation of Animal Gene Bank facilities in the country through training of staff, provision of key equipment, and characterization of indigenous animal resources. This is a major aspect of sustainability for ex situ conservation.
- b. The project has not yet focused on *conservation of wild relatives of crop and animal species*.

Recommendation: The project design needs to be revised to set realistic goals e.g. ‘x number of wild relatives of crop and animal species’

b. Under **Outcome 2** the project has trained 27 extension workers in Nepal in agro-biodiversity conservation, including 11 Agriculture Extension Officers (AEOs) and 16 Livestock Extension Officers (LEOs). In addition, 7 MoA officials from various departments participated in a one

week study visit to Thailand. Similarly, three researchers and two NBC staff attended ex country training on agro-biodiversity management.

Since the formal in-country training received by the Extension Officers at the (College of Natural Resources) CNR does not focus on agro-biodiversity, the training imparted by the project was of special significance to these Officers. The MTE team field visits and discussions with AEOs, LEOs, and farmer groups confirmed the impact of these trainings as agro-biodiversity messages are now incorporated into the verbal extension messages of the Extension Officers.

Also, the administration staff interviewed at the central and district levels asserted that they provide greater support to the ILCCP activities after receiving training, as the trainings improved their understanding of the importance of Agro-biodiversity conservation and its application to a wide range of IGRs. (output 2.2) Also, the MTE team came across incidents where solutions were cross exchanged among extension officers amongst project sites (output 2.4). For example, following the example of AEO assistance for rice marketing in village Zomlingzo (Mendelgang) at Tsirang, the AEO in village Dara Gaon (Semjong) assisted the farmer group in marketing of legumes. Similarly, the ADAO in Bumthang is working on replicating the marketing practices of buckwheat products from Jalikhar village (under Choekor gewog) with barley farmers in Kizom village (Tang gewog).

Outcome 2 - Conclusion and Recommendations:

As indicated in the project baseline, the MoA agencies did not provide any support regarding agro-biodiversity conservation. After observing the stated examples in the field, the evaluators conclude that the project has made significant progress in effectively developing the capacity of agriculture and livestock agencies to support farmers in conserving agro-biodiversity mainly through trainings of 27 Extension Officers and six researchers from RDCs.

As these Extension Officers and Researchers will have direct links with farmers in target and non-target sites, they will continue to raise awareness on agro-biodiversity conservation even after the project's termination.

Recommendation: The project has already achieved its objectives for Outcome 2. Therefore, after considering budget availability for other priority areas, further activities under Outcome 2 may be discontinued, if necessary

c. Under **Outcome 3**, the project has provided improved inputs on traditional varieties and breeds to approximately 300 participating in all project sites (This is an approximate number as the MTE team could not obtain an exact figure from the project's monitoring system). About 200 farmers (the exact number was not available in the project monitoring system) in these sites have

also been trained in seed selection and improved crops and animal husbandry management practices³.

The MTE's visit to Tsirang and Bumthang confirmed the provision of improved inputs and farmer trainings. In village Zomlingzor (Mendalgang), Tsirang, the project provided seed of chotti rice, storage silos, and basic implements like harvesting sickles. In addition, training has been provided in seed selection and cultivation; bio-pesticide and bio-fertilizer preparation and application, and post-harvest sorting and packaging.

Similarly, in village Dara Gaon, 1-2 KG of locally available seed of three indigenous varieties (yellow, black, red striped) of legumes was distributed to each participating household and training was given in better production practices. In turn, each recipient household is expected to return a doubled quantity of seed for storage in the gene bank (output 3.2).

Due to taste preferences, these varieties of rice and legumes were cultivated before the project start. However, due to lower productivity as compared to exotic breeds, the area under these varieties has been declining. With the project's support, the farmers reported 25% yield improvements in rice and upto 50% yield improvements in legumes (output 3.1).

Under livestock products, poultry activities in Tsirang and Yaks in Bumthang were analyzed. Although, yak breeding bulls have been provided to the target community, it is early to report any impact.

For poultry, improved housing has been provided to individual households for raising indigenous chicken varieties. However, as most beneficiary farmers cannot afford formulated feed, the flock's productivity goes down, and eventually, the poultry is kept out of the shed to scavenge. This in turn leads to uncontrolled breeding with different indigenous breeds and exotic varieties present in the area.

An issue with effectiveness of this outcome is the high targets set in the project log frame, where the project sets out to increase the productivity of at least 'four' indigenous products by at least 15%. The project management believes that due to the time required for improving yields and project resources, yield enhancements for so many products may not be achievable during the project's duration.

³ Inputs include supply of silo bins, quality seeds, improved farm tools, quality breeding bulls of yak, siri, ram & boar; supply of materials for livestock shed construction. Farmer's trainings include training in seed selection, improved crop management practices, compost preparation to enhance soil fertility, preparation of bio-pesticides and bio-fertilizers and, animal husbandry and pasture improvement.

Outcome 3 - Conclusion and Recommendations: Based on interviews with selected farmer groups, the project's activities are resulting in increased yields through provision of improved inputs and management training. However, due to production limitations, not all activities are achieving the objective of in situ conservation.

Recommendation:

- i. A detailed impact survey is required to assess the impact on yield enhancement. The project has planned such a survey for 2010. One challenge foreseen by the MTE team for this survey is the availability of baseline information, since the Baseline Survey conducted by the project details livestock yields for each site, but it does not report yield quantities for). The target may be revised and instead of increasing the productivity of at least four varieties/breeds, the goal should be set at 'increase yield of at least one crop or livestock species in each project site by at least 15%'.***

d. Under **Outcomes 4 & 5**, the project has undertaken various activities to improve farmers' access to markets for traditional varieties.

Through training of 27 extension workers in Nepal, the capacity of Dzongkhag staff has been improved for support of agro-enterprise development (outcome 5.2). A successful example of this was seen in Bumthang where the farmer group, led by the ADAO and guidance from the PMU, is successfully engaged in processing and marketing activities of various Buckwheat products including flour, cakes, cookies, and buckwheat husk pillows. To date, a group of 15 farmers in Bumthang have sold two tonnes of buckwheat flour and products, making a profit of Nu 120,000 since initiating the activity in 2009. This model was based on an example studied by the ADAO during his study visit to Nepal.

A market assessment survey has been undertaken and a rudimentary market strategy for IGR is available in draft form. However, this strategy requires expert review which can be facilitated by the DAMC (output 4.2). Also, for various products, such as rice, legumes, yak, and buckwheat, farmer marketing groups have been formed by extension agents for sales in Thimphu and Bumthang markets (outputs 4.3, 5.1, 5.3, and 5.4).

For instance, a group of ten yak herders is now directly linked to a dairy cooperative for sale of cheese and butter, and chotti rice produced by the participating farmer group in Tsirang was packaged and sold in Thimphu during 2009.

The district work plans for 2010 detail processing and marketing activities for further products including barley, soya, dairy, and mustard.

However, no final marketing strategy has yet been developed for products of traditional varieties and breeds. The buckwheat and any other product in the project is being sold based on isolated efforts of the Extension Officers, Communities, etc. Hence, these successes or failures are also isolated. There needs to be a consolidated product-wise marketing strategy for each product with time-bound action plans. The strategy should be followed by all project sites with adjustments for site-specific constraints and opportunities. (output 4.1). The absence of a coherent product-wise strategy has led to ad hoc marketing approaches, often meeting with limited or no success. For instance, rice marketed by a group of farmers from Tsirang in Thimphu, despite fetching higher prices resulted in overall losses due to marketing and transportation costs. Similarly, legumes marketed in Thimphu were sold for lesser price per kilo than in the village, as the variety taken to the market was not in demand.

A foreseen challenge for project is the achievement of targets set for Outcomes 4 & 5, as they aim at 'at least one crop or livestock species in each target site' to be marketed. This target may not be achievable in each project site due to existing local demand, market accessibility, etc. Therefore, there is a need to revise this target to 'at least one crop or livestock species in at least 60% of the project sites'.

Similarly, although the project has not yet paid attention to the development of a certification system for products of traditional varieties and livestock breeds, it is foreseen by the MTE team that this activity will face considerable challenges as the development of such systems is only possible where a solid marketing mechanism exists. Whereas, the project has only now set out to initiate basic market-oriented enterprises. (output 4.4).

Also, the considerable overlap in Outcomes 4 & 5 leads to monitoring and reporting redundancy. In the interest of efficiency, it is recommended that Outcomes 4 & 5 are merged into a single outcome.

Outcomes 4 & 5 - Conclusion & Recommendations:

Many of the products targeted by the project are in high demand and through project support can lead to sustainable increased incomes for participating farmers. This in turn will lead to farmer interest in increased production as compared to exotic counterparts. In fact, with the project's help, farmers have already started marketing some commodities in limited quantities. This is an achievement as compared to the baseline levels, where 'no markets' existed or 'no experience in marketing' existed.

Through provision of technical support under Outcome 3 and initiation of some marketing activities under Outcomes 4&5, the project has set a backdrop for implementation of further marketing activities. However, without the development and implementation of a clear product-wise marketing strategy, these efforts are at risk of facing failure in the medium to long run.

Recommendations:

- i. There is a need to devise a coherent product-specific marketing strategy to be followed across the project;***
- ii. Outcomes 4 & 5 should be merged to form a single output; and***
- iii. The target of 'developing a certification system for traditional varieties and breeds' should be reconsidered due to the pre maturity of other activities in the project. Instead, the funds allotted to this activity should be spent on other activities within this outcome.***

e. The project has not made any significant progress on **Outcome 6**. Limited progress includes inclusion of ILCCP under Program 29 of Tenth five-year plan of MoAF and support to a study visit of Secretary of MoAF and ‘Scientific Review Committee’ (SRC) of MoAF to enhance understanding of policies related to GRs access and benefit sharing.

f. Currently, the PMU is in the process of initiating the development of a ‘National Biodiversity Policy’. However, to develop such a policy the services of several sector-specific experts may be required and raising such a team is expected to be beyond the project’s budget.

The PPD is also currently engaged in the process of formulating the ‘National Food Security and Nutrition Policy’. This is an opportunity for the ILCCP to partner with PPD and contribute to this new policy in order to mainstream agro-biodiversity conservation into the national priorities.

Outcome 6 - Conclusion and Recommendations: Only limited progress has been made on mainstreaming of agro-biodiversity into policy issues. This is a priority area which will ensure sustainability of project goal and activities.

Recommendations:

- i. The project must engage the PPD in order to mainstream agro-biodiversity in policy issues.***
- ii. The project design should set clear baseline and indicators for ‘mainstreaming agro-biodiversity’.***

g. Under **Outcome 7**, the project has held a district level fair on agro-biodiversity (output 7.2), and participated in the National RNR conference held in 2009 (output 7.4). A book on Animal Genetic Resources and Plant Genetic Resources, each has been published and disseminated to various departments of MoA, local schools, and the College of Natural Resources (CNR). In addition, a TV documentary on the importance of agro-biodiversity conservation was prepared and aired on National Television(output 7.6).

Also, four students were provided internships in the gene bank during 2009 and a seminar on biodiversity was convened at the CNR with participation of students and faculty (output 7.5).

Outcome 7 – Conclusion & Recommendations: The project has undertaken important national and local activities to raise awareness on importance of agro-biodiversity.

Recommendations:

A survey is required to assess increase in awareness levels. However, since no baseline data exists, it will be difficult to track the project's impact in this area.

h. Cross Cutting Issues - Considering that UNDP is concerned about poverty reduction, local governance, and promotion of gender equity, The MTE also reviewed these cross cutting issues and the findings are detailed below:

i. Poverty Reduction

The products targeted by the project are managed by poor households as these farmers are not resource rich to invest in high value inputs required for production of exotic varieties. Although, farmer participation in project activities was based on expression of interest, based on the field visits and discussions with farmer groups and Extension Officers, it was ascertained that almost 80% of the farmers were poor with average annual household income ranging from Nu 15,000 to 20,000⁴.

The project's focus on yield enhancement and marketing have the potential to make significant contributions to economic development of poor farming households where even modest economic returns from project interventions have high marginal significance. These factors make the project pro-poor and project activities result in poverty reduction of marginalized farming households and communities.

However, since most project activities in the field started in Q1 of 2009, it is difficult to assess increase in income as only one crop/agriculture cycle has been completed where most marketing activities were conducted on trial basis. Moreover, the project's monitoring system does not track increase in income. It is recommended that impact survey is undertaken at the end of project to determine income increases.

ii. Governance

The project works with farmer groups in a participatory manner where individuals and groups make decisions about participating in activities of in situ conservation and marketing of indigenous products.

This process facilitates the participation of local communities in agro-biodiversity conservation and decision making processes.

⁴ The national income poverty line is fixed at Nu. 1,096 per month (Nu. 13,152/- a year.)

iii. Promotion of Gender Equity

The project promotes gender equity at both administrative and implementation levels. All three project staff at the PMU, including the PD, PM, and Accountant are women. Also, in all field visits, the MTE mission determined that the targeted farmer groups comprise of up to 80% women members. The latter is based on the facts that the commodities selected by the project are of higher interest to women farmers and also men are often absent from the farmstead in search of labor thereby leaving women to participate.

Conclusion: The project has effectively addressed the cross-cutting issues of Governance and Gender Equity.

Recommendation: The project also has potential to contribute to Poverty Reduction. However, a survey of increase yields and incomes will confirm the impact on poverty reduction.

5.2. Efficiency

Findings related to the project's efficiency have been categorized in various areas, including Personnel, Financial Management, and activities.

5.2.1. Personnel

The Project Management Unit (PMU) is well staffed with a Project Director (PD), a Project Manager (PM), and an Accountant. However, all three staff members have additional responsibilities on other projects. e.g. The PM is also managing an already understaffed Plant Gene Bank.

Considering the complexity of ILCCP, with its focus on in situ and ex situ conservation, where 14 crop and livestock commodities are targeted across eighteen sites in eight districts, and coordination is required at central, district, and gewog levels with at least five departments of the MoAF, the PMU is understaffed. This problem becomes even more pronounced when considering the monitoring and reporting responsibilities at the PMU.

Conclusion: Reviewing personnel TORs, the effect of this under-staffing is specifically relevant for the PM, who is single handedly responsible for coordination, monitoring, and reporting activities.

Recommendation: It is recommended that two administrative assistants are placed in the PMU with direct reporting lines to the PM.

5.2.2. Financial Effectiveness

The project is being implemented at the grass roots level with the help of existing government set up, including the Dzongkhag administration and Extension Officers. The technical capacity of these individuals has been built through in country and ex country trainings. This is a more economically efficient approach compared to hiring project specific staff and placing them in the target sites.

Also, instead of solely relying on GEF funding, additional co-financing arrangements were made with different stakeholders, including the RGOB, Bilateral agencies and NGOs. Of this, \$750,000 was committed by RGOB, contributed in the form of personnel and facilities. US \$ 690,000 was committed by NORAD and DFNOR and was spent in the form of BUCAP linkages. Additionally, \$100,000 was committed by SDS Netherlands by supplying Animal Gene Bank Equipment. The commitment of \$60,000 to be contributed by the Private Sector has not yet materialized.

While reviewing the total project budget⁵ as presented in the original project document, it was ascertained that 25.35% of funds are allocated to Outcome 1 (ex situ conservation) and 26.80% funds are allocated to Outcome 2 (enhancing technical capacity of relevant agencies). The distribution of funds amongst these two outcomes is almost the same. However, since ex situ conservation requires procurement of sophisticated equipment and advanced staff training as compared to that under Outcome 2, it is obvious that Outcome 1 is under-funded.

Similarly, only 3.23% is allocated to Project Management. This is an alarmingly low proportion when compared with similar projects where 7-10% of budgets in projects of this complexity are allocated for administration support.

Conclusion: The project is being implemented in an economically efficient manner and GEF funding is leveraged by financial commitments from RGOB, Bilateral agencies, and NGOs.

The allocation for Project Management is minimal and lack of resources can adversely affect project implementation.

5.2.3. Project Activities

Project sites are located in both easily accessible to hard to access sites. Detail of distance to project sites is given in Annex 8. To reach, most project sites require one to four days walk, where at least 60% sites require one day's travel on foot⁶.

⁵ These calculations are based on GEF's contribution, as the MTE mission could not obtain actual amounts of co-financing for each outcome.

⁶ Considering Bhutan's terrain, it is understandable for target sites to be remote. However, when talking to other projects of DoA with focus on marketing, the MTE determined that most of those sites are comparably accessible by road.

Although, this reflects the project's philosophy of inclusive development, it poses challenges of monitoring efficiency. Also, in some of these sites, the project's principle of in situ conservation based on market access is facing hurdles due to distance to markets. E.g. Millets in Chukha (Metekha) and Samtse (Dumtoe).

It is foreseen that some of the other project commodities like poultry (eggs) will face similar marketing problems in the long run, especially if beneficiaries expand operations and/or once project support is withdrawn.

Conclusion: The remoteness of project sites result in monitoring hurdles and poses threats to market development.

Recommendation: The project management should hold a prioritization exercise with key stakeholders, including UNDP, DoA, DoL, and DAMC to select sites where successful activities can be continued.

5.3. Sustainability

Several management and program issues have an impact of the project's sustainability and will determine sustaining activities after July 2012. Details of such major sustainability aspects are given below:

- a. The project has supported the upgradation of Animal Gene Bank facilities in the country through training of staff, provision of key equipment, and characterization of indigenous animal resources. This is a major aspect of sustainability for ex situ conservation.
- b. The project has a conservation approach in a number of products with a strong linkage between in situ and ex situ conservation. For instance, for legumes, the project has provided seeds in small quantities and distributed to farmers on the condition that twice the amount of seed is returned to the project to maintain seed reserve at community level. Similarly, in situ conservation of Nublang is not only based on provision of high quality bulls but also a recording system⁷ in the field which feeds into the DoL's ex situ conservation efforts.
- c. The project has effectively trained 27 Government Extension Officers, and six researchers from RDCs in the importance of Agor-biodiversity conservation. As these extension officers have direct link with farmers in target and non target sites, they will continue to raise awareness on agro-biodiversity conservation even after project end.
- d. Many of the key stakeholders informed the MTE team that the project is unique and the first of its kind in the country in raising awareness on Agro-biodiversity conservation. These awareness raising activities have been targeted at all levels from central and district

⁷ A record is kept of body growth, milk, etc.

administration to extension workers and farmers through trainings, seminars, conferences, and publications. The knowledge disseminated by the project can lead to increased policy and public support to agro-biodiversity conservation in the future.

- e. Many of the products targeted by the project are in high demand and through support to basic processing facilities and marketing linkages can result in increased incomes to participating farmers. This in turn will lead to farmer interest in increased production as compared to exotic counterparts.

For example, local varieties of legumes, rice, mustard, buckwheat, barley, siri, and yak products are high in demand and contributing to household income. During the field visit, the MTE team learnt the project has already seen major success in buckwheat through basic processing and marketing.

Due to rising prices of local poultry products, farmers participating in in situ poultry conservation have also earned substantial profits through localized marketing. However, the productivity of poultry depends on provision of formulated feed which is unaffordable by majority of the targeted farming households. Similarly, the high cost poultry sheds supplied by the project, which cost Nu 15-20,000, are out of the financial reach of poor farmers in target areas where average annual household income is Nu 15-20,000. Therefore, the activity cannot be replicated by other interested farmers in the area.

Also, the current high poultry prices in the country are a result of bird flu outbreak in neighboring India, which is otherwise the supplier of cheaper products. These major factors are indicators that in situ conservation of poultry will be unsustainable.

The MTE team had similar concerns for in situ conservation activities of piggery where the inputs provided are high cost housing and sustained activities require improved feed that is unaffordable by the farmers in the long run.

- f. In the case of in situ activities on Jakar sheep or Yuta horse, which are highly threatened species, the project's activities are not sustainable as they do not follow the basic principle of increased economic returns as an incentive to promote in situ conservation. In the case of Jakar sheep, due to availability of cheaper imported wool leading to replacing natural fibers, the economic benefit of sheep herding is non-existent for farmers. The project is providing support to only one farmer and replication by other farmers is not foreseen.

Also, the project has provided very limited inputs such as fencing for improved pasture management of Yuta horse. In the presence of the 'National Horse Breeding Center' which has extensive activities related to Yuta conservation, this is only a piecemeal approach and only results in increased reporting and monitoring complexity for the project.

- g. The project has not yet finalized a Marketing Strategy. This results in implementation of ad hoc measures to develop marketing linkages which despite their momentary success may not be feasible in the medium to long run.

Conclusion: The project has ensured sustainability of ex situ conservation through investments in equipment and human resources.

The project has also significantly contributed to developing technical capacity of DoL including NLBP and DoA including RDCs and has raised awareness on importance of agro-biodiversity conservation at various levels.

The project has targeted various products which are already in high demand. This will ensure the sustainability of in situ conservation, provided an effective marketing strategy is developed.

Due to issues with market access, marketability, or approach to conservation, some targeted products are not suitable for in situ conservation.

Recommendation: The project must hold a prioritization exercise with key stakeholders to select commodities and sites where successful activities can be continued.

5.4. Project Ratings

The MTE team requested five key stakeholders (UNDP, NBC, DoL, DoA, and Dzongkha Administration (Tsirang) to rate project outcomes for relevance, effectiveness, efficiency, and sustainability using ranking criteria provided in GEF guidelines.

Overall, the project's outcomes were rated satisfactory for relevance, effectiveness, efficiency, and sustainability. The seven project outcomes received variable ratings ranked between Highly satisfactory and Moderately Satisfactory. The only exceptions are Outcome 3 where two of the five respondents gave a rating of Moderately Unsatisfactory and Outcome 5 where one respondent believed it to be unsatisfactory. The reasons for dissatisfaction were the inability to achieve targets. As pointed out by the MTE, these targets are ambitious and might not be achievable during the project lifetime.

Rating by the MTE team for relevance, effectiveness, efficiency, and sustainability was ranked from Satisfactory to Moderately Satisfactory for Outcomes 1 to 5 (please include rating by evaluators here rather than in the annex). In the case of Outcome 6, since no significant progress has been recorded, the ranking was Unsatisfactory. Also, due to the inadequacies of recording quantitative results in the project monitoring system, the rating was Moderately Unsatisfactory.

The result of rankings is available in Annex 9

The team has come across published examples of GEF/UNDP Mid-term evaluations where ratings were conducted by stakeholders. Also, the Policies and Guidelines shared with the consultants refer to 'agencies ratings'.

Please see the review team's ratings in Annex 9 now also.

6. Project Management and Administration

6.1. Country Ownership/Drivenness

The MTE mission determined that the RGoB takes complete ownership of the project. This is reflected in the financial commitment through provision of government funds to the project which equal to 81% of GEF contribution. Also, various key departments of the MoAF, including PPD, DoA, and DoL play an active role in project implementation at central and district levels. For instance, the DoA and DoL provide District and Extension staff for project implementation and key department representatives attend important project meetings.

NBC's role was rated highly satisfactory for taking ownership. As the lead executing agency, it takes complete ownership of the overall project results and makes resources available in instances when project progress is at stake. For instance even though DAMC (formerly AMS) which is a key stakeholder for Outcomes 4 and 5 has been in transition for the past year and thus has not been able to provide active support to the project, NBC in collaboration with DoA and DoL has made significant progress on these outcomes.

One exception to ownership is that during all field visits, the MTE mission came across incidents of frequent staff transfers in DoL/DoA district and extension staff. Although, the mission understands the fact that staff transfers are affected by numerous exogenous administrative factors, these transfers prove to have an adverse impact on project progress as they result in discontinuity/disruption of project activities at field level.

Conclusion: The RGoB and various associated departments of MoAF take complete ownership of the project. One exception is the frequent transfers of field staff at DoA and DoL which affect the project's continuity and progress.

Recommendation: Where possible, the DoA and DoL should reconsider staff transfers in project areas during the remaining project period.

6.2. Stakeholder Participation

As mentioned above, key project stakeholders are various MoAF departments including DoA, DoL, DAMC, PPD, and RDCs⁸.

⁸ Until recently, the RDCs, a unit of the DoA, were known as RNRRCs and came under the administration of CORRB. As these units have played a significant role in project implementation as RNRRCs, consideration separate than the DoA is given to them in this MTE report.

The DoA, DoL, and RDCs have been active project participants in the first half of the project through provision of extension staff, attending key project meetings and activities, and participating in project offered trainings.

Until recently, the DAMC (formerly known as the Agriculture Marketing Services) was only a division of the MoA and has now acquired the status of a Department. Due to its transitional phase in the first half of the project, the DAMC has only been marginally involved in project activities, such as giving feedback on TORs for the Market Assessment.

Also, the project has not yet actively engaged the PPD, the key implementing partner for Outcome 6.

Farmers, who are also key stakeholders in in situ conservation are actively engaged in undertaking the project activities through guidance provided by the Agriculture and Livestock Extension Officers. This includes attending trainings and participating in production, processing, and marketing activities. Farmer groups have been formed where required and by laws have been drawn in four target sites.

Conclusion: The DoA, DoL, and RDCs have been active participants.

Recommendation: The PMU needs to engage the PPD and the newly formed DAMC for successful project completion.

6.3. Project Linkages

The project is based on the Netherlands funded Agro-biodiversity Conservation project which ended in June 2005 and focused on ex situ conservation. In addition, ILCCP has linkages with the Biodiversity Use and Conservation in Asia Program (BUCAP) which is in its third phase and focuses on in situ conservation of rice, maize, etc.

The project has strong linkages with DoL on ex situ conservation, where the DoL is primarily engaged in ex situ conservation of large animals such as Nublang and NBC is engaged with conservation of small animals such as poultry.

At the field level, crop activities have linkages with the DoA's National Organic Program (NOP) in development of bio-fertilizer and bio-pesticide.

The project has linkages with the One Gewog Three Products (OGTP) Program, where ten of the eighteen project sites have at least one mutually targeted product. A complete listing of these products is provided in Annex 10.

Some of the key linkages missing for the project are those with highly relevant MoA projects such as the National Post-harvest Management Program, Seed and Plant Development Program,

Horticulture/Cash Crop Development Program, Rural Access Program, and Farm Mechanization Program. Some linkages with these projects will have synergic effects on the project activities.

Similarly, at present, the project does not have linkages with any DAMC project or program, a key stakeholder for Outcomes 4 & 5. This is because of the newly formed status of DAMC.

Conclusion: The project is linked to key initiatives like BUCAP and OGTP.

Recommendations: Further linkages are required with various relevant programs of DoA and DAMC.

6.4. Monitoring and Evaluation

The MTE team's findings on M&E were related to Reporting methods and formats, field monitoring visits, and the use of Risk Management System (RMS). These are detailed below:

6.4.1. Recording Progress

The project reporting and M&E is based on outcomes and indicators and do not give any consideration to outputs. This is because M&E reporting is directly linked to the Logframe which does not list outputs. Also, as indicators are only linked to outcomes and not outputs, many project activities, although undertaken efficiently, are not tracked and recorded properly. For example, although as part of the 2009 Annual Conference, the project raised awareness on agrobiodiversity conservation among administrators and field staff in all 20 Dzongkhags, the exact number of participants attending has not been recorded. Similarly, the exact number of farmers trained in each site is not available.

This also leads to a qualitative project monitoring system and provides limited quantitative information. In turn, substantiation of the project's progress by impact assessment teams and evaluators using quantitative analysis is prohibited.

6.4.2. Reporting Formats

The PMU recording and reporting formats at the implementation level are not consistent. For example, the District AWP's do not follow a consistent pattern. Similarly, field visit reports are not developed on a prescribed format. Although, the quality of these reports has consistently improved over the course of the project, the inconsistency in formats results in confusion when planning or reviewing activities, e.g. the MTE team had to work with a number of formats when reviewing the district Annual Work Plans for 2010.

6.4.3. Monitoring Visits

The expanse of field sites and factors of physical accessibility make field monitoring an extensive task. As the PMU is understaffed, monitoring visits to field sites are also infrequent. In fact, only one monitoring visit was made to 15 sites, whereas three sites have never been visited by the project management.

Also, these monitoring visits are conducted randomly and there is no set schedule for monitoring visits.

6.4.4. Risk Management System

The UNDP has developed a Risk Management System (RMS) which has been incorporated as a module in ATLAS. UNDP Bhutan is in charge of monitoring the project through the RMS and any risk is to be reported in the System, accompanied by a management response and a risk mitigation plan. The Regional Coordination Unit (RCU) is to get involved in the supervision and monitoring of the project when alerted by RMS.

The MTE reviewed RMS and held interviews with UNDP Bhutan staff to assess the system's utility. Although, the system has been used over the course of the project, the major drawback is that unlike other ATLAS modules, the RMS does not have a provision of deadlines for risk mitigation.

The CO staff is also not aware of the utility of the system to the regional office. Moreover, the staff has not yet received training in the system's use which could provide guidance on the nature and prioritization of risks and mitigation measures to be entered into the system.

Conclusions:

- i.* The project's monitoring system is linked to outputs and not outputs and indicators. The system is also qualitative and does not generate enough quantitative information to facilitate analysis of project impact or progress.
- ii.* ***The RMS can be used as an effective way of tracking risk. However, training of CO staff will be required in its utility and also risk mitigation deadlines need to be incorporated into the system.***

Recommendations:

- i.* The project's reporting system needs to be revised to include more quantitative parameters and alignment with outputs and indicators; and
- ii.* The CO needs to be trained in the use of RMS.

6.5. Management by UNDP CO

The UNDP CO is in constant touch with the project management and maintains an open communication channel. UNDP Bhutan staff also undertakes monitoring visits to project sites.

In addition, the PMU staff is annually trained in accounting and reporting procedures. However, due to other pressing engagements such as hosting international delegations and auditors, ILCCP staff has not been able to attend any training since 2009. This has affected project reporting since a new Project Manager was assigned in 2009 and has no prior experience of managing UNDP or GEF projects.

Moreover, the UNDP provides backstopping support to the PMU such as organizing the MTE. However, this support is not actively extended to project activities like reviewing outputs by local consultants. Since NBC is a research based organization and has little capacity in technical areas such as marketing, the PMU requires guidance when commissioning or finalizing outputs like the Baseline Survey or Market Assessment.

Conclusion: The UNDP CO provides active support to the project.

Areas related to outputs by local consultant at times require stronger support.

Recommendation: The CO must provide strong support to PMU in reviewing and approving outputs by local consultants.

7. Financial Planning

UNDP Bhutan is responsible for general project oversight, including financial monitoring and reporting, whereas the PMU in coordination with various departments of MoAF plays a key role in project execution. Following this structure, based on the activity planned received from the PMU, UNDP Bhutan releases project funds each quarter to the RGoB's Department of Public Accounts (DPA) for disbursement to the PMU. The PMU thereon releases funds to Dzongkhag administrations for project implementation activities.

The MTE found the following to be critical aspects of financial planning that can affect the project's progress and outcomes:

7.1. Fund Release

Over the course of the project, funds have been released on time with the exception of two occasions, Q3 of 2009 and Q1 of 2010. In 2009, Q3 (July-September), the PMU received funds on August 14, 2009⁹. Whereas, in Q1 2010 (Jan – Mar), funds were received until March 17, 2010. Due to the standard lag time involved in the funds reaching the field offices, funding for field activities was further delayed beyond the dates mentioned. The source for these holdups was not immediately clear at the time of the MTE.

Also, these holdups have not had any significant implications for ex situ project components, as they are mostly carried out at RGoB's facilities. However the progress of in situ measures, activities like provision of production, processing, and marketing inputs to farmer groups have suffered significant delays. Further, crop activities have had a higher risk compared to livestock, as the earlier are critically dependent on seasonality.

Therefore, these delays not only affect the project's momentum, they are also critical to the project's aspects which are dependent on crop calendars. For instance, the delay in Q1, 2010 is likely to affect participating rice farmers, as rice cultivation starts in late March/early April. They also affect the credibility and morale of field staff who are in direct contact with farmers.

7.2. Planning

Although, the PMU quarterly submits a systematically developed FACE form to UNDP Bhutan to request fund release, there is little information readily available at the PMU about to date expenditures and remaining funds under each outcome.

This lack of information can affect prioritization of key activities during the second half of the project.

⁹ Released by PMU to Dzongkhags on August 14, 09

8. Project Design

The MTE mission determined that the ILCCP design is relevant as it addresses many high priority products across four agro-ecological for in situ and ex situ conservation through collaboration amongst various related departments. In addition, the project approach addresses cross cutting priority issues such as awareness, poverty reduction, gender equity, local governance, and capacity development.

Despite these positive aspects, the project design has elements which need review to ensure successful and efficient implementation in the second half. Particular attention is required for the following aspects:

a. Project Context

The project has seven outcomes and 31 outputs to implement in situ and ex situ conservation measures in eighteen sites across fourteen commodities. Considering the total project budget, which is approximately US \$ 1.6 million¹⁰, and the Human Resources at the PMU, this is a broad mandate that poses administrative and monitoring challenges. Also, the number of commodities targeted by the project when compared to the total budget allocated shows that at the project end, instead of seeing significant impact on a few select commodities, the project's impact would be thinly distributed amongst a large number of commodities, thereby having implications for sustainability.

b. Logical Framework

For some outcomes, the project's Logical Framework sets targets that are highly ambitious and may not be achieved during the project's life. For instance:

- Under Outcome 1, it is stated that, '**all wild relative** species that are not already represented in the protected area system have been conserved in situ...'. To target all wild relatives across eighteen sites is a very ambitious goal, especially with limited technical and financial capacity available within the project or related departments such as the Department of Forest and Park Services (DoFS);
- Under Outcome 3, it is stated that '**...in each target site the productivity of at least four** traditional varieties or breeds has been increased by **at least 15%....**'. Increasing productivity of eighteen commodities over a period of five years is ambitious, especially when the project is working with resource constrained poor farmers. Also, an increase of 15% yields for all commodities may not be possible during the project life;
- Under Outcome 4, it is stated that '**at least one** crop or livestock species **in each target site** is being produced for a new diversity-based market created through the project'. Not

¹⁰ GEF project contribution is US \$897,485.

all sites in the project are market accessible. Also, existing local demand for indigenous products like rice is already high, whereas exploring new markets for these products will be costly and require volumes that cannot be produced by targeted sites; and finally,

- Under Outcome 5, it is stated that ‘in each targeted site, farmers cultivating traditional varieties or raising traditional breeds are supplying markets that were not accessible to them...’ This target would face challenges similar to Outcome 4 listed above.

In other cases, targets set in the logframe are qualitative and do not provide benchmarks to quantify achievement. For example, results for Outcome 1 state that ‘yield improvement for traditional varieties and breeds is based on information generated by NBC’s program of collection and characterization’; and results for Outcome 7 state that ‘...awareness of the importance of agro-biodiversity conservation...has increased significantly...’.

The logframe also does not link Outcomes and Indicators to outputs. This leads to problems in tracking and reporting output related project activities.

In addition, various individuals engaged with management of ILCCP implementation showed concerns that Outcomes 4 and 5 have a considerable overlap and in fact, project activities for these outputs have been the same. Listing these as separate outcomes leads to resource consuming redundant monitoring and reporting processes.

The logframe also stipulates surveys to measure progress of various significant project activities. However, such a survey has not been stipulated for yield enhancements under Outcome 3. It will be difficult to measure project impact on yield enhancements without undertaking a detailed impact assessment.

c. Outputs

Similar to targets in the logframe, some outcomes are ambitious or their achievement may not be necessary for the project’s success. These include:

- Output 4.4: Development and implementation of a certification system for products of traditional varieties and livestock breeds. The development of such systems requires extensive resources and a foundation of thriving marketing enterprises. Since the project has recently set out to develop establishment of such small scale innovative enterprises, it may not be possible during the course of the project to establish a certification system.
- Output 5.2: Farmers cooperatives formed to facilitate access to markets. The establishment of cooperatives is not necessary for collective marketing under the regulations of RGoB. Also, it may not be feasible to form farmers’ cooperatives in each target site due to the nature of the commodity, market, the relationship of farmers, and the stringent conditions that have to be met by farmers such as maintenance of accounts books, by-laws and auditing which given low literacy levels, they are incapable of.

d. Monitoring and Evaluation

The M&E section of the project document has set out elaborate planning and reporting guidelines with in-built mechanisms for course correction over the life of the project. This includes development of Annual Work Plans (AWP), formulation and meetings of Project Steering Committee (PSC), and conducting a Mid-term and Terminal Project Evaluation, etc.

However, there is no provision for an overall impact assessment of project activities. Due to the unique nature of this project, such an assessment will identify lessons learnt in the context of Bhutan and will feed into future agro-biodiversity conservation programming of UNDP and GEF and the policy and planning of the RGoB.

Conclusions: The project design is relevant, however, there is a danger that the large number of commodities targeted will lead to only marginal impact.

The project's logical framework does not incorporate outputs. Also, some targets set in the logframe are ambitious and may not be achieved during the project's life.

The high over lap in outcomes 4 and 5 results in inefficiencies in monitoring and reporting.

There is no provision in the M&E system for an overall impact assessment of project activities.

Recommendation:

- i. The number of commodities targeted should be re-visited and reprioritized;***
- ii. The project's log frame must be reviewed to link outputs to outcomes and for incorporation of detailed indicators. Also, project targets in log frame should be revised and Outcomes 4 & 5 should be merged into one Output.***
- iii. The project's Monitoring system should be revised to report quantitative information and an Overall Impact Assessment of Project activities should be included in the M&E Framework.***

9. Recommendations

Based on the findings and conclusions of the MTE, the mission puts forward the following recommendations to enhance the effectiveness and efficiency of ILCCP and ensure sustainability of project efforts.

a. Project Design

In order to improve the quality of project monitoring and reporting, the MTE mission recommends a review the project Log Frame to incorporate Outputs and associated SMART Indicators. A sample is provided in Annex 11.

Also, the targets should be set to reflect realistic goals. In this regard, it is suggested that:

- Under Outcome 1, instead of targeting, ‘**all wild relative species**’, a set number of wild relative species not represented in the protected area system are conserved in situ;
- Under Outcome 3, instead of increasing the productivity of **at least four** traditional varieties and breeds, the target is set to ‘increasing the productivity of **at least one** variety or species by at least 15%.’
- Under Outcome 4, instead of ‘**at least one** crop or livestock species **in each target site** is being produced for a new diversity-based market created through the project’, the goal is set to ‘at least one crop or livestock species in **at least 60% of project sites** is being produced...’
- Similarly, under Outcome 5, instead of each targeted site, the target may be set to: ‘**in at least 60% of project sites** farmers cultivating traditional varieties or raising traditional breeds are supplying markets that were not accessible to them...’

In addition, since Outcomes 4 & 5 are overlapping and giving separate consideration to each leads to inefficiency in monitoring and reporting, it is recommended that these outcomes are merged into one.

Moreover, ILCCP is a “mainstreaming biodiversity” project and the project’s contribution to mainstreaming agro-biodiversity into the agriculture sector will be considered a measure of success. Therefore, it is recommended that the revised log frame should clearly build in the project’s ‘mainstreaming’ component.

b. Prioritization of Outcomes

Based on availability of budget and achievement to-date under various outcomes, the PMU should prioritize activities during the second half of the project. In this context it is recommended that:

- Greater emphasis is required on Conservation of Wild Relatives in Outcome 1. Also, technical capacity at NBC should be upgraded through training in Molecular Characterization and Taxonomy;
- The project has already achieved its objectives for Outcome 2. Therefore, after considering budget availability for other priority areas, further activities under Outcome 2 should be discontinued, if necessary;
- To assess progress, an assessment of improvement in yields should be undertaken under Outcome 3. Also, provision of inputs like seeds and bulls should discontinue after Q4 2010 to leave enough time until the project's end in June 2010 for activities on yield improvements and marketing;
- The project should give high priority to achieving sustainable results in Outcomes 4 & 5 in collaboration with DAMC. In this regard, the PMU should hold a strategy workshop with the guidance of DAMC and participation of DoL, DoA, and RDCs to devise tangible product marketing strategies and time bound marketing Action Plans. Also, the project should collaborate with the DAMC to incorporate at least some targeted project products into the Overall Marketing Strategy of DAMC;
- Under Outcome 6, the project should actively engage the PPD to seek guidance in the development of a National Biodiversity Policy. In addition, the project should seek ways of contributing to the under development 'National Food Security and Nutrition' policy;
- Under Outcome 7, improved monitoring and reporting procedures should be followed by the PMU using standardized formats and ensuring that quantifiable results of activities are recorded. Also, success stories and lessons learnt such as buckwheat and rice marketing should be promoted through learning exchange between all project sites. This can be effectively done through setting up periodic knowledge exchange activities amongst the Extension Officers serving the target sites.

c. Prioritization of Products and Sites

Based on its experience in the first half, it is recommended that the project holds a prioritization exercise with key stakeholders including UNDP, DoA, DoL, and DAMC to select commodities and sites where successful activities can be continued.

The prioritization should give consideration to:

- Threat Level to an IGR;
- Contribution to Global Biodiversity
- Sustainability of Activities;
- Choice of In situ vs. Ex situ conservation;
- Market Availability and Accessibility;
- Economic Incentive for Farmers; and
- Linkages with OGTP

Based on the results of the MTR, it is advised that:

- In situ activities related to Poultry, Piggery, Millets, Sheep, and Horse should be discontinued;
- In situ activities related to Legumes, Buckwheat, Mustard, Maize, Soya, Rice, Yak, Barley, and Nublang should continue with a strong emphasis on processing and marketing; and
- Ex situ activities including collection and documentation of germ plasm of all commodities should continue.

d. Coordination with Relevant Departments

Following its relationship in the first half of the project, the PMU should continue to collaborate with DoA, DoL, and RDCs.

To mainstream agro-biodiversity conservation into DoA's activities, it is recommended that where possible, project linkages are developed with various relevant programs of the DoA, e.g. the Post Harvest Program, Farm Mechanization Program, Seed and Plant Development Program, etc. Guidance on these linkages should be sought from the DoA and subsequently, relevant project activities should be planned in coordination with the heads/managers of these programs. The MTE mission believes that linking ILCCP with existing RGoB programs will not only result in synergy, it will also provide a mechanism for continuation of activities after the project's end in June 2012.

Also, as success of in situ conservation depends upon sustainable market linkages, it is recommended that the project actively engages the DAMC as a major stakeholder to implement Outcomes 4 and 5. Two key measures to be undertaken in this regard include a) incorporation of project activities in the DAMC's first Annual Work Plan 2011 and b) inclusion of project prioritized products in DAMC's overall Marketing Strategy.

To mainstream agro-biodiversity conservation into national policy, there is an urgent need to develop close collaboration with PPD. Key activities recommended include a) seeking assistance from PPD on formulation of National Biodiversity Policy and b) seeking ways of contributing to the National Food Security and Nutrition Policy currently being drafted by the PPD. Both these activities will ensure project sustainability as they would provide a systematic mechanism of incorporating agro-biodiversity conservation into key policy documents of the RGoB.

Moreover, as it is recommended to give high priority to the development of National Biodiversity Policy, the PMU should collaborate with similar programs such as BUCAP on this activity. This would result in financial and programmatic synergies.

e. PMU Capacity

As all three PMU staff members have additional responsibilities, whereas managing the extensive activities of ILCCP is a full time engagement, it is recommended that additional PMU staff is hired.

Since the effect of this under-staffing is more prominent on the role of PM, the placement of two administrative assistants is recommended with direct reporting lines to the PM. These individuals should be responsible for the Crop and Livestock components, each, and should ideally have prior experience in field based projects implemented with collaboration of different government agencies.

The assistants should support the PM with coordination of project activities and undertaking field monitoring visits.

At least one such staff has already been identified at the NBC and the PD needs to re-assign this individual to ILCCP on priority basis. This re-assignment will have no budgetary implications for the project.

In addition, the PMU's technical capacity also needs to be strengthened to improve delivery of Outcomes 4, 5, and 6. For outcomes 4&5, increased collaboration is required with DAMC, where DAMC provides specialized guidance on activities such as the development of a marketing strategy (output 4.1), conducting market assessments (output 4.2), development of a certification system (output 4.4), and provision of processing and packing facilities (output 5.4), etc.

Finally, in collaboration with RAP, UNDP Bhutan must also provide guidance to the PMU on finalization of consultant outputs. For instance, review of the baseline study report or the Market Assessment study commissioned by the project. The project's sound planning depends on these products, however, the quality of these reports is unsatisfactory.

f. Monitoring and Evaluation

To ensure continuity of effort, the PMU must ensure the use of standardized reporting formats at all levels. In this regards, compliance with PLAMS/NMES should be considered, as adoption of this new system will streamline the project's reporting procedures with those of similar RGoB projects.

Also, to ensure systematic reporting of all project activities, it is recommended that monitoring and reporting is linked with outputs and indicators and not just outcomes. A revised logframe where indicators are linked to both outcomes and outputs, will make this linkage even more logical.

The project's monitoring system also needs a review to incorporate recording progress using quantitative parameters, e.g. number of farmers supported, amounts of income generated from an activity, etc. In the absence of quantitative information, the project progress and impact cannot be substantiated. Similarly, it is important to record information disaggregated by gender, e.g. the number of men and women farmers who are direct beneficiaries.

Similarly, the baseline study conducted in Year 1 of project must be reviewed for improvements and filling gaps, where necessary. This will facilitate benchmarking when measuring project progress.

Moreover, the frequency of field monitoring visits must be increased. For this purpose, it is recommended that an annual visit schedule is drawn as part of the Annual Work Plan and at least two visits per year to each site are planned.

g. Financial Planning

The project has already faced considerable delay in release of funds, resulting in serious implications for in situ crop related activities. To avoid these delays, it is recommended that a discussion takes place between UNDP and PMU where the exact cause of the delay is pointed out and corrective measures are identified, where possible. For instance, arranging for advanced request for release of funds related to field-based activities or bi-annual funding of these activities.

The UNDP should also record this issue in the RMS with specific deadlines for mitigation.

h. Staff Transfers

The transfer of field staff poses a major hindrance to success of project activities. Although, the MTE mission is mindful of the fact that a number of exogenous administrative issues affect staff transfers, it is advised that the DoA and DoL make an effort to minimize these assignments in targeted districts and Gewogs until June 2012. Where transfers are imminent, some notice may be given to the PMU to enable project management to plan an effective change.

Annexes

Annex 1

TERMS OF REFERENCE

Mid Term Evaluation
Integrated Livestock and Crop Conservation Programme (ILCCP)

Project/Award Number: 00048573/00042329

The consultants required the TORs in MS Word format The current document is a PDF image.

Annex 2

Project Outcomes and Outputs

Outcome 1: The documentation and characterization of indigenous genetic resources (including wild relatives) supports conservation and development policy, prioritization of conservation efforts and the identification of opportunities for income generation.

The identification of conservation priorities is based on information concerning location and extent of native varieties and breeds. Without such information, priorities cannot be developed and conservation efforts will be unfocussed and ineffective. Documentation and characterization is necessary in order to generate the information on which focused and effective conservation priorities can be based. Likewise, the identification of opportunities for income generation depends on knowledge concerning native varieties and breeds and their characteristics. Without this knowledge, opportunities for income generation will be random and certainly ineffective. Finally, policy concerning conservation and agricultural development needs to be based on information concerning the status of native varieties and breeds.

Output 1.1. Existing gaps in capacity, for example, in animal genetics, taxonomy and characterization techniques, are addressed through training of NBC staff (including through support for an MSc in animal genetics).

Output 1.2. Gaps in existing databases are addressed through collection and characterization of indigenous genetic resources.

Output 1.3. Spatial databases of indigenous genetic resources, and especially wild relatives, are created.

Output 1.4. Emergency measures required for conservation of most endangered varieties and breeds are identified and implemented.

Output 1.5. *Ex situ* collections of livestock genetic resources are established.

Output 1.6. Measures to ensure conservation of endangered priority wild relatives are identified and implemented.

The outputs contributing to Outcome 1 will be delivered by the NBC. Cooperation with the RNRRC's and Dzongkhag extension services will be required for outputs 1.2, 1.3, and 1.5. Cooperation with the DoF will be required for output 1.6.

Outcome 2: Agricultural and livestock development agencies are able to support farmers in conserving agrobiodiversity through provision of relevant and timely technical information.

- Output 2.1. RNRRC and Dzongkhag Extension staff trained in the importance of, and approaches to agrobiodiversity conservation
- Output 2.2. Agrobiodiversity conservation incorporated into research programmes of RNRRC's and activities of Dzongkhag Extension services.
- Output 2.3. Technical constraints are addressed through the work of MoA agencies
- Output 2.4. Problems encountered at specific sites and innovative solutions developed by the farmers are exchanged among project sites.

The outputs contributing to Outcome 2 will mainly be the responsibility of the RNRRC's and Dzongkhag extension services. Training of the staff of these agencies will be by NBC, supported by international agencies, as appropriate and in conformity with GEF requirements.

Outcome 3: Traditional varieties and breeds yield greater financial benefits to farmers.

- Output 3.1. Yield of traditional crop varieties and livestock breeds improved through breeding and cultural improvements
- Output 3.2 Farmers trained in participatory breeding.

The yield improvement output (3.1) will also depend on support from the RNRRC's of the CoRRB. The evolution of technical and research priorities of the RNRRC's (for example, an increasing focus on remote areas) are consistent with the goals of the project and will be supported through the project.

Outcome 4: Traditional varieties and breeds have access to new and larger markets.

- Output 4.1. Existing marketing capacity in the RGoB (for example, in the Agriculture Marketing Services of MoA, and in the MTI) is mobilized to develop a marketing strategy for products of traditional varieties and breeds.
- Output 4.2. Market potential is assessed for new and niche markets – especially in relation to the tourism sector.
- Output 4.3. Marketing and purchase agreements are secured with private sector partners and regional marketing agencies.

Output 4.4. Development and implementation of a certification system for products of traditional varieties and livestock breeds

The outputs contributing to Outcome 4, will depend on inter-agency cooperation, especially with the Agriculture Marketing Services (of the MoA) and the Ministry of trade and Industry. Existing initiatives in these agencies, for example, UNDP's Rural Enterprise Development Project, are addressing the existing capacity constraints of business development in remote areas. The project will work with and through these existing initiatives to ensure that markets for traditional varieties and breeds are supported. Output 4.4 will be delivered in collaboration with the Bhutan Food and Agriculture Regulatory Agency (BAFRA).

Outcome 5: Farmers have the capacity to access existing and emerging markets.

Output 5.1. Farmers' cooperatives formed to facilitate access to markets

Output 5.2. The capacity of Dzongkhag administrations to support agro-enterprise development is developed.

Output 5.3. Farmers are trained in special requirements of new and niche markets, identified on the basis of cost-benefit analyses.

Output 5.4. Processing and packaging facilities are developed.

The outputs contributing to Outcome 5 require coordination with, and support from Dzongkhag administrations for each target site. The Agriculture Marketing Services will also assist with capacity development.

Outcome 6: At a systemic level, the capacity of the MoA is adequate to mainstream agrobiodiversity conservation into the attainment of food security and self-sufficiency.

Output 6.1. Policy analysis of sectoral policies identifies gaps and inconsistencies

Output 6.2. Agriculture and livestock sector policies integrate agrobiodiversity conservation issues

Output 6.3. Fiscal policies (interest rates, taxation and subsidies) support agrobiodiversity conservation

Output 6.4. Institutional reform supports increased cooperation among RGoB agencies, government corporations, and the private sector.

Output 6.5. Coordination mechanism established to support NBC's mandate in coordinating biodiversity conservation

The outputs contributing to Outcome 6 require a high level of inter-agency coordination and cooperation. The Policy and Planning Division of the MoA are responsible for policy assessment and modification. Several existing initiatives addressing priorities in the 9th five-year plan are relevant to project outputs such as 6.2 and 6.3.

Outcome 7: Increased sustainability of project impacts through monitoring, learning, adaptive feedback and evaluation, dissemination of lessons learned and awareness generation.

Output 7.1 Effective project monitoring and evaluation system established and functioning including mechanisms to ensure regular adaptive feedback, learning and dissemination of lessons learned in accordance with M&E strategy and plan

Output 7.2 Lessons and experiences from existing efforts to promote agrobiodiversity conservation are shared with farmers in the project's target sites.

Output 7.3 Progressive farmers, in terms of agrobiodiversity conservation, are supported in efforts to disseminate agrobiodiversity conservation methods.

Output 7.4 Annual RNR conferences serve to exchange lessons learned in agrobiodiversity conservation.

Output 7.5 Curricula in schools and especially the Natural Resources Training Institute are strengthened in relation to agrobiodiversity conservation.

Output 7.6 Public awareness campaigns are supported, especially by the mass media (print and broadcast) and through extension services.

Most of the outputs contributing to Outcome 7 will be delivered with the assistance of the RNRRC's and Dzongkhag extension services (especially outputs 7.2, 7.3, and 7.4). The Information and Communications Services of the MoA will lead in delivering outputs 7.5 and 7.6. In the case of output 7.5, the Ministry of Education will have an important role. Output 7.1 will be delivered by the Project Team with guidance and inputs on best practices from the relevant sections of the Implementing Agency and the GEF, under the overall oversight of the National Project Director and the Project Steering Committee.

Annex 3

Geographical Distribution of the In Situ Conservation Sites

Dzongkhag	Final site specific commodities		
Haa	Gakiling 1. Buckwheat (Sweet & Bitter) 2. Nublang 3. Piggery 4. Poultry	Sombeykha 1. Nublang 2. Buckwheat (Sweet & Bitter) 3. Mustard 4. Piggery and poultry	BJI: Yak
Chukha	Getena 1. Pig 2. Maize	Metekha 1. Buckwheat (Sweet & Bitter) 2. Foxtail Millet	
Samtse	Ugyentse 1. Sheep 2. poultry	Dumtoe 1. Finger millet (kalo & Payli millet) 2. poultry and piggery and cattle	
Tsirang	Mendelgang 1. Poultry 2. Rice	Semjong 1. Legumes 2. Maize 3. Poultry	
Zhemgang	Bardo 1. Poultry 2. Piggery	Nangkhor (Rice) 1. Karma Tekpa, 2. Karpo 3. Korfokpa	
Bumthang	Tang 1. Barley 2. Horse 3. Sheep (at Dechenpelrithang farm)	Chhoekhor 1. Yak 2. Buckwheat (Sweet & Bitter)	
Trashigang	Uzrong 1. Pig, 2. Poultry (Yebja)	Shongphu 1. Barley 2. Soya Beans 3. Mustard 4. Siri	Merak 1. Yak 2. Yutha
Pemagatshel	Decheling 1. Finger Millet 2. Foxtail Millet 3. Pig, poultry – only monitoring. 4. Local siri cattle	Chemong 1. Pig, poultry- only monitoring. 2. Local cattle: Siri	

Annex 4

List of Documents Reviewed

- 1) UNDP Project Document
- 2) Inception Report on ILCCP Inception Workshop
- 3) Minutes of 2nd PSC Meeting of ILCCP Project
- 4) Government of Bhutan (Integrated Livestock and Crop Conservation Program)
- 5) Baseline Survey Of Indigenous Crop And Animal Genetic Resources
- 6) 2008 Annual Work Plan (Bhutan)
- 7) 18 Months Rolling Work Plan (Ministry of Agriculture)
- 8) Buckwheat Conservation Through Use Towards Food Security and Coping with Climate Change
- 9) 18 Months Rolling Work Plan (Jan 2009 - Jun 2010)
- 10) Monitoring Visits to ILCCP Sites
- 11) Visits to Sites Under Tisrang and Bumthang
- 12) Re-prioritisation of site specific commodities for field activities
- 13) ILCCP Quarterly Progress Report 2008
- 14) ILCCP Quarterly Progress Report 2009
- 15) Field Trip to Eastern Bhutan
- 16) UNDP EEG and GEF Annual Performance Report (APR)
- 17) Project Outcomes and Outputs
- 18) Minutes of 1st Project Board Meeting of ILCCP
- 19) Minutes of LPAC Meeting for ILCCP
- 20) Standard Request for Proposals
- 21) Combined Delivery Report with Encumbrance 2007
- 22) Combined Delivery Report with Encumbrance 2008
- 23) Combined Delivery Report with Encumbrance 2009
- 24) Indigenous Livestock Resources of Bhutan
- 25) Indigenous Crop Resources of Bhutan
- 26) GEF Guideline for Implementing and Executing Agencies to Conduct Terminal Evaluation
- 27) Report from Field Visits 7-14 March 2009
- 28) 10th Five Year Plan Document (2008 – 2013)
- 29) RNR Sector Tenth Plan (2008 – 2013) – Main Document
- 30) Work plan for 2010 (Detailed)

Annex 5

Detailed Schedule of Interviews

Dates	Program
14/03/2010	Arrival of International Consultant to Bhutan. Desk review and collection of documents to be done by local consultant prior to commencing the work.
15/03/2010	Meeting with senior officials of the Royal Government and UNDP. NBC (10.00am) PPD (2.00pm-3.00pm.) DoA (4.00pm-5.00pm)
16/03/2010	DOL (10am-11am) DoMC (11.30am-12.30pm) NLBP (2.30-3.30pm)
17/03/2010	Travel from Thimphu to Damphu Halt at Damphu
18/03/2010 19/03/2010	Visit sites under Tsirang Dzongkhag
20/03/2010	Damphu to Bumthang Halt at Chamkhar
21/03/2010 22/03/2010	Visit sites under Bumthang Dzo
23/03/2010	Travel from Bumthang to Thimphu
24/03/2010	Work on the presentation of the preliminary findings of the evaluation.
25/03/2010	Work on the presentation of the preliminary findings of the evaluation. Discussion of the preliminary findings of the evaluation with NBC
26/03/2010	There will be 3 rd Project Board Meeting at 2.00 pm-4.00pm. Following 3 rd PB meeting there will be a debriefing on the preliminary findings of the MTR by International and local consultant at 4 pm-5.00pm.
27/03/2010	Departure of International Consultant
05/04/2010	Submission of the draft report
06-18/04/10	Incorporation of comments/feedback into the report by the consultants.
19/04/2010	Submission of the final report to NBC/UNDP CO.

Annex 6

Detailed Schedule of Site Visits

Dates	Program
14/03/2010	Arrival of International Consultant to Bhutan. Desk review and collection of documents to be done by local consultant prior to commencing the work.
15/03/2010	Meeting with senior officials of the Royal Government and UNDP. NBC (10.00am) PPD (2.00pm-3.00pm.) DoA (4.00pm-5.00pm)
16/03/2010	DOL (10am-11am) DoMC (11.30am-12.30pm) NLBP (2.30-3.30pm)
17/03/2010	Travel from Thimphu to Damphu Halt at Damphu
18/03/2010 19/03/2010	Visit sites under Tsirang Dzongkhag
20/03/2010	Damphu to Bumthang Halt at Chamkhar
21/03/2010 22/03/2010	Visit sites under Bumthang Dzo
23/03/2010	Travel from Bumthang to Thimphu
24/03/2010	Work on the presentation of the preliminary findings of the evaluation.
25/03/2010	Work on the presentation of the preliminary findings of the evaluation. Discussion of the preliminary findings of the evaluation with NBC
26/03/2010	There will be 3 rd Project Board Meeting at 2.00 pm-4.00pm. Following 3 rd PB meeting there will be a debriefing on the preliminary findings of the MTR by International and local consultant at 4 pm-5.00pm.
27/03/2010	Departure of International Consultant
05/04/2010	Submission of the draft report
06-18/04/10	Incorporation of comments/feedback into the report by the consultants.
19/04/2010	Submission of the final report to NBC/UNDP CO.

Annex 7

List of De-Briefing Participants

1. Director General, Department of Livestock (DoL), MoAF: Chairman
2. Director, Council of RNR Research of Bhutan (CORRB), MoAF
3. Director, Department of Agriculture & Marketing (DAMC), MoAF
4. Chief, Policy and Planning Division (PPD), MoAF
5. Dr. Tashi Y. Dorji, Program Director (Project Director), National Biodiversity Centre, MoAF
6. Mr. G.B. Chhetri, Specialist/ Joint Director, DoA, MoAF
7. Dr. Lham Tshering. Specialist, National Livestock Breeding Program (NLBP) , DoL, MoAF
8. Mr. Tashi Dorji, UNDP
9. Mr. Jamyang Dorji, Bhutan Agriculture and Food Regulatory Authority (BAFRA), MoAF
10. Mr. Ugyen Tenzin, Forestry Officer, Department of Forest Services & Parks (DoFSP), MoAF
11. Mr. Sonam Tamang, Dy. Chief Biodiversity Officer, National Biodiversity Centre, MoAF
12. Mr. Singay Dorji, Sr. Biodiversity Officer, National Biodiversity Centre, MoAF
13. Mr. Chuki Dorji, IT Officer, National Biodiversity Centre, MoAF
14. Asta Tamang, Dy. Chief Biodiversity Officer (Project Manager), National Biodiversity Centre, MoAF

Consultants:

1. Ms. Umm e Zia, International Consultant
2. Mr. Saroj Nepal, National consultant

Annex 8

Detail of Distance to Project Sites

Dzongkhag	Site	Commodities	Distance from Thimphu
HAA	GAKILING	Buckwheat Nublang Piggery Poultry	1 day drive & 3 days walk
	SOMBEKHA	Nublang Buckwheat Mustard Piggery and poultry	1 day drive & 3 days walk
	BJI:	Yak	1 day drive
CHUKHA	GETENA	Pig Maize	1 day drive & 3 days walk
	METEKHA	Buckwheat (Sweet & Bitter) Foxtail Millet	1 day drive & 3 days walk
SAMTSE	UGYENTSE	Sheep Poultry	2 days drive from Thimphu
	DUMTOE	Finger millet (kalo & Payli millet) Poultry and Piggery and cattle	2 days drive & 2 days walk
TSIRANG	MENDELGANG	Poultry Rice	1 day drive in winter 1 day drive & 1 hr walk in rainy season
	SEMJONG	Legumes Maize Poultry	1 day drive in winter 1 day drive & 2 hrs walk in rainy season
ZEMGANG	BARDO	Poultry Piggery	2 days drive & 3 days walk
	NANGKHOR	Karma Tekpa, Karpo Korfokpa(Rice)	2 days drive & 1 day walk
BUMTHANG	TANG:	Barley Horse Sheep (NSBC)	
	CHHOEKHOR	Yak Buckwheat (Sweet & Bitter)	1 day drive & 2 days walk
TRASHIGANG	UZRONG:	Pig, Poultry (Yebja)	2.5 days drive

	SHONGPHU	Barley Soya Beans Mustard Siri	2.5 days drive & 2 hrs walk
	MERAK	Yak Yutha	1 Yak site: 2.5 days drive, 2 days walk Yutha site: 2.5 days drive, 4 days walk
PEMAGATSHEL	DECHELING	Foxtail/Finger Millet Pig, poultry. Local siri cattle	2.5 days drive & 1 day walk
	CHEMONG	Pig, poultry- only monitoring. Local cattle: Siri	Yutha site: 2.5 days drive, 4 days walk

Annex 9

Project Ratings

Ranking of Project Relevance, Effectiveness, Efficiency, and Sustainability						
Outcome	Dzong	UNDP	DOA	DOL	NBC	MTE Team
1	Satisfactory	Satisfactory	Highly Satisfactory	Highly Satisfactory	Satisfactory	Satisfactory
2	Satisfactory	Satisfactory	Satisfactory	Moderately Satisfactory	Satisfactory	Satisfactory
3	Moderately Unsatisfactory	Moderately Satisfactory	Satisfactory	Satisfactory	Moderately Unsatisfactory	Moderately Satisfactory
4	Moderately Satisfactory	Moderately Satisfactory	Satisfactory	Moderately Satisfactory	Moderately Satisfactory	Moderately Satisfactory
5	Satisfactory	Moderately Unsatisfactory	Satisfactory	Moderately Satisfactory	Satisfactory	Moderately Satisfactory
6	Satisfactory	Satisfactory	Highly Satisfactory	Satisfactory	Satisfactory	Unsatisfactory
7	Satisfactory	Moderately Satisfactory	Satisfactory	Satisfactory	Satisfactory	Moderately Unsatisfactory

Annex 10

List of Common OGTP Products

Sl.no	Gewog	ILCCP	OGTP
1	Gakiling	Siri	Butter & cheese
2	Sangbay	Siri	Butter & cheese
3	Semjong	Legumes	Vegetables
4	Semjong	Local poultry	Eggs
5	Mendelgang	Local poultry	Eggs
6	Chimmung	Local poultry	Eggs
7	Merak	Yak	Fermented Zoethey
8	Getena	Local pigs	Piglets
9	Choekhor	Buckwheat products	Buckwheat
10	Tang	Barley products	Barley

Annex 11

Sample Logical Framework

Sample Logical Framework				
Outcome	Target	Outputs	Indicators	
			Baseline	Final
Outcome 3: Traditional varieties and breeds yield greater financial benefit to farmers	Target: By the end of the project, in each target site, the productivity of at least one variety or breed has been increased by at least 15% through breeding, selection, and/or improved cultivation/husbandary, compared with yields in year 0.	Output 3.1 Yield of Traditional crop varieties and livestock breeds improved through breeding and cultural improvements	Survey in Year 1 will establish current yields	Indicator 1. Number of varieties and breeds for which yield enhancement is targeted; Indicator 2. Quantity of improved inputs (seeds, bulls, etc.) provided to farmer groups; Indicator 3. Techniques used for yield improvements; Indicator 4: Percentage of yield improvement in targeted quantities.
		Output 3.2 Farmers trained in participatory breeding	No farmers are trained in participatory breeding	Indicator 1. Number of farmers/farmer groups trained in participatory breeding; Indicator 2. Nature of techniques used for participatory breeding; Indicator 3. Number of commodities targeted for participatory breeding