**“*In situ* Conservation of Kazakhstan’s Mountain Agro-biodiversity”**

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**Mid Term Evaluation**

*Final Report – April 2009*

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Contents

[1.0 Executive Summary 4](#_Toc229813166)

[2.0 Introduction 8](#_Toc229813167)

[**2.1 Project background** 8](#_Toc229813168)

[**2.2 Purpose of the evaluation** 8](#_Toc229813169)

[**2.3 Key issues addressed** 9](#_Toc229813170)

[**2.4 The outputs of the evaluation and how they will be used** 9](#_Toc229813171)

[**2.5 Methodology of the evaluation** 9](#_Toc229813172)

[3.0 The Project and its Development Context 11](#_Toc229813173)

[**3.2 Project start and its duration** 13](#_Toc229813174)

[**3.3 Summary of the implementation status** 13](#_Toc229813175)

[**3.4 Project budget** 13](#_Toc229813176)

[**3.5 Problems that the project seeks to address** 13](#_Toc229813177)

[**3.6 Immediate and development objectives of the project** 15](#_Toc229813178)

[**3.7 Main stakeholders** 15](#_Toc229813179)

[**3.8 Results expected** 16](#_Toc229813180)

[4.0 Findings and Conclusions 16](#_Toc229813181)

[**4.1 Project Formulation** 16](#_Toc229813182)

[4.1.1 Implementation approach 18](#_Toc229813183)

[4.1.2 Country ownership 23](#_Toc229813184)

[4.1.3 Stakeholder participation 23](#_Toc229813185)

[4.1.4 Replication approach 24](#_Toc229813186)

[4.1.5 Cost-effectiveness 24](#_Toc229813187)

[4.1.6 Linkages between project and other interventions within the sector 25](#_Toc229813188)

[4.1.7 Management arrangements 25](#_Toc229813189)

[**4.2 Implementation** 26](#_Toc229813190)

[4.2.1 Supervision of the project implementation 26](#_Toc229813191)

[4.2.2 Project execution 26](#_Toc229813192)

[4.2.3 Project implementation 26](#_Toc229813193)

[4.2.4 Planning, Monitoring and evaluation 27](#_Toc229813194)

[4.2.5 Risk management 27](#_Toc229813195)

[4.2.5 Risks and assumptions 27](#_Toc229813196)

[**4.4 Results** 29](#_Toc229813197)

[4.5 Outcome 1 – *Ecosystem-based conservation and management of wild crop relatives at two project sites*. 29](#_Toc229813198)

[4.6 Outcome 2 *– Strengthened institutional, technical, and financial framework for ABD conservation* 29](#_Toc229813199)

[4.7 Outcome 3 – *An effective legislative framework for the conservation and rational use of agro-biodiversity resources* 30](#_Toc229813200)

[4.8 Outcome 4 – *Alternative livelihoods benefiting local communities in project sites, reducing natural resource use pressure on mountain agro-biodiversity* 30](#_Toc229813201)

[4.9 Outcome 5 – *Awareness and support increased at all levels regarding the values and need to conserve Kazakhstan’s mountain agro-biodiversity* 30](#_Toc229813202)

[4.4.1 Attainment of objectives 31](#_Toc229813203)

[4.4.2 Prospects of sustainability 32](#_Toc229813204)

[**4.5 Recommendations** 33](#_Toc229813205)

[5.1 Overall Recommendations 33](#_Toc229813206)

[5.2 Recommendations Outcome 1: *Ecosystem-based conservation and management of wild crop relatives at two project sites*. 35](#_Toc229813207)

[5.3 Recommendations Outcome 2: *Strengthened institutional, technical, and financial framework for ABD conservation* 36](#_Toc229813208)

[5.4 Recommendations Outcome 3: *An effective legislative framework for the conservation and rational use of agro-biodiversity resources* 36](#_Toc229813209)

[5.5 Recommendations Outcome 4: *Alternative livelihoods benefiting local communities in project sites, reducing natural resource use pressure on mountain agro-biodiversity* 36](#_Toc229813210)

[5.6 Recommendations Outcome 5: *Awareness and support increased at all levels regarding the values and need to conserve Kazakhstan’s mountain agro-biodiversity* 37](#_Toc229813211)

[**4.6 Lessons Learned** 38](#_Toc229813212)

[**Annexes** 39](#_Toc229813213)

[Annex 1 MTE Terms of Reference 39](#_Toc229813214)

[Annex 2 Evaluation Program 39](#_Toc229813215)

[Annex 3 List of people interviewed/met 41](#_Toc229813216)

[Annex 4 List of documents reviewed 42](#_Toc229813217)

[Annex 5 Adaptive Management Framework 43](#_Toc229813218)

[Annex 6 Agrobiodiversity Project strategy outline 49](#_Toc229813219)

[Annex 7 Revised LFM 54](#_Toc229813220)

[Annex 8 Terms of Reference for Plant Genetic Conservation Technical Assistance 59](#_Toc229813221)

[Annex 9 Project Ratings Table 62](#_Toc229813222)

# 1.0 Executive Summary

The *project strategy* as described in the Project Document and to a large extent in the LFM was summarised as an *in situ* genetic reserves approach to conserving crop wild relatives (agrobiodiversity) within the protected areas system by strengthening protection measures, improving the management capacity of protected areas agencies, rehabilitating degraded wild fruit forests and establishing *ex situ* conservation measures (the living collection). This is supported by strengthening the legal and policy framework and increasing awareness of the importance and benefits of conserving agrobiodiversity; summarised thus:

* *In situ conservation management of agrobiodiversity at the ecosystem level within protected area and ex situ measures to support ;*
* *Strengthening the enabling environment by building management and financial capacity;*
* *Strengthening the policy and legal framework;*
* *Offsetting local community opportunity costs by providing alternative livelihoods, and;*
* *Increasing institutional and public awareness of agrobiodiversity and conservation.*

The Forestry and Hunting Committee of the Ministry of Agriculture of the Republic of Kazakhstan acts in the capacity of the Project’s National Executive Agency on behalf of the Government of Kazakhstan. Said agency has established a coordination committee designated for the supervision of the project activities. The PIU, based in Almaty, consists of a small administrative staff and four full time technical experts. The National Project Coordinator is responsible for the overall guidance and coordination of the project, ensuring the governmental support in achieving the project objectives, monitoring and evaluation of the Project on behalf of the Government of Kazakhstan).

The National Project Manager is responsible for the day-to-day management of project staff and national and international consultants, for overall project strategy and coordination with other institutions and stakeholders, and for acting as the link between the PIU and the NCC.

The project was approved in December 2005 for 6-year period with an end in December 2011. The first Annual Work Plan was submitted in May 2006 following the Inception Phase and Inception Report. The Project is currently implementing AWP 3. At January 2009, the second half of AWP 3, the GEF budget execution is US$ 1.695.174, 65 (61.2%)[[1]](#footnote-2). At June 2008[[2]](#footnote-3) the cash co-financing budget execution was US$ 5,820,000 (48.8%) and in-kind co-financing committed was US$ 3,220,000 (27.0%). The total project budget set out in the Project Document is US$22,569,877 disaggregated into US$3,022,967 GEF funds (including the PDF A and B) and US$19,546,910 co-financing (including in-kind fund).

**Context and purpose of the evaluation**

The midterm evaluation is intended to provide a comprehensive overall assessment of the project and provide an opportunity to critically assess administrative and technical strategies issues and constrains associated with large international and multi-partner initiatives. The evaluation will also provide recommendations for strategies, approaches and/or activities to improve the potential of the Project to achieve expected outcomes and meet the objective within the Project timeframe. Findings of this evaluation will be incorporated as recommendations for enhanced implementation of the current project phase in the future years.

**Main conclusions**

The project is progressing well and has had a number of successes. The project has generated some valuable experience and is internalizing these lessons within the project’s strategy. It is clear to the MTE team that the PIU in particular has been, and continues to be, very open to learning from its experience which has given the MTE a high degree of confidence that the project can achieve its objective and contribute significantly to the regional understanding and experience in the conservation of agrobiodiversity, as with so many projects, it is the human capacity and intellect combined with a willingness to challenge assumptions and conventional ideas that makes for a strong project.

However, the MTE has concerns about the overall project’s sustainable impact given that the genetic reserves are dependent upon the effective management of the protected areas and these remain financially vulnerable particularly in light of the current economic downturn.

There were a number of weaknesses in the project’s design, in particular the absence of any sustainable use approach and an over-reliance on the alternative livelihoods and confusion over a clear definition of agrobiodiversity as it relates to its conservation management. This can be expressed as:

Conservation of agricultural biodiversity requires two distinct approaches. These can be characterized as “*genetic reserve conservation*” and “*on farm conservation*”. The two activities can be described thus:

“*Genetic Reserve Conservation*: the location, management and monitoring of genetic diversity in natural wild populations within defined areas designated for active, long term conservation.”

“*On-farm Conservation*: the sustainable management of genetic diversity of locally developed crop varieties (land races), with associated wild and weedy species or forms, by farmers within traditional agricultural, horticultural or agro-silvicultural systems.[[3]](#footnote-4)”

However it is noted that the project title and the context of the project document only orient the project implementation unit to in situ conservation of the genetic resources.

Furthermore, the project may be too reliant on a technological approach to rehabilitating the degraded wild fruit forests and it is important that the project develops a spread of approaches – including some *in situ* experimental management regimes - in order to reduce the risks and as part of an adaptive management approach. The MTE is confident that the PIU has the internal strengths and intellectual capacity to achieve this within the remaining period of the project. However, many of the Global Environmental Benefits (GEBs) will not be felt until after the end of the current GEF funding cycle and it is important that the project builds a robust monitoring programme to track these benefits in the future and link them clearly to the projects intervention.

Based upon the findings of the MTE the project has, overall, been **satisfactorily** implemented with some of the sub-projects being highly satisfactory.

* Conceptualisation and Design (as outlined in the project document) – Marginally Satisfactory
* Implementation Approach – Satisfactory
* Stakeholder Participation – Satisfactory
* Project Planning, Monitoring and Evaluation – Satisfactory
* Results - Satisfactory

**General Recommendations**

The project is achieving sufficiently and should continue to implement the activities that are ongoing. However, given the inflationary pressures and effects of the exchange rate on the project’s budget the project should think carefully about where it will target its remaining resources in terms of financing sub-projects (activities).

Project design

1. The project makes a number of adjustments to the LFM to update the projects results framework in light of experience gained and changing conditions. These do not amount to significant changes (i.e. the outcomes and objective remain the same).
2. The PIU should “pause” consider the revised LFM and the original project objective and produce a revised strategy document (not more than 5-6 pages) that summarizes how the various project outcomes will achieve the project’s objective and embed an adaptive management culture in the project’s approach

Implementation

1. The project strengthens its adaptive management “framework” as a means to cope with complexities of the system and future uncertainties and to update the project’s strategy in light of lessons learned.
2. The PIU engages a substantive short-term consultant to assist with developing various aspects of the genetic reserves and plant genetic conservation *per se.*

Project outputs, outcomes and impacts

1. The key project partners meet and discuss the possible implications of including a third area within the project’s activities. Tarbagatai is an area to the northeast of the Dzhungar and Ile-Alatau National Park.
2. The project and its partners keep in mind that the objective reflects agrobiodiversity *per se*, As a result of genetic ingression from commercial orchards, wild apples are probably the most vulnerable and this threat is most extensive and urgent. However, it is important to remember that there are a number of other important wild relatives within the genetic reserves.
3. The PIU develops an “exit strategy” in the next year to demonstrate how the achievements will be embedded institutionally in order to sustain the impact on agrobiodiversity conservation.

Project management and administration

1. The FHC, UNDP and the PIU consider carefully whether they need a project representative to be based in Astana.

Project execution

1. The Agrobio Project and the UNEP Regional Project make an agreement of cooperation and meet to discuss ways in which the projects can complement each other particularly in relation to on-farm conservation and genetic reserves and the opportunity to promote sustainable use and Land Races of crop wild relatives in farming systems surrounding the protected areas.

Specific recommendations by project output are given at the end of the main report.

**Lessons learned**

The MTE cautiously considers that there are three connected lessons worthy of note from the project’s experience thus far.

The first lesson relates to a systemic approach to conservation. In order to manage a system it is critical to develop an understanding of that system and what is “driving” it and this can often create a contradiction between *project* and *process*. In effect the processes that have created the current system (e.g. the wild fruit forests) are part of a much greater time scale than any project cycle (normally 3 – 6 years) and therefore when a project intervenes in these processes – it does so with incomplete understanding of the system – this is a truth that has to be acknowledged and is why GEF projects use an adaptive management approach. Therefore it becomes critical to continue to build on our understanding of the ecology of the wild fruit forests and to try a spread of different management interventions, selecting those that work best and discarding those that do not live up to our expectations[[4]](#footnote-5).

The second lesson flows from the description of agrobiodiversity set out in the MTE. That is the “*genetic reserve conservation*” and “*on farm conservation*” paradigm and the issue of land races. For the purposes of agrobiodiversity conservation this highlights the importance of treating protected areas in the context of surrounding land use. People have been an integral component of these ecosystems for millennia. It would be extraordinary to assume that the people who lived in these areas in the past had not selected fruiting trees and transported them to their farms and kitchen gardens.

These land races represent not only an important component of agrobiodiversity but they are also important symbols of national cultural heritage worthy of conservation for their heritage values as well as offering conservation and development opportunities for their utilitarian values without threatening the genetic resource reserves.

The third lesson relate to alternative livelihoods and their inclusion in the project strategy. The alternative livelihoods approach has considerable support amongst conservationists because – as its name suggests – it offers “non-consumptive” alternatives to rural livelihoods which may be impacting upon biodiversity or a particular resource that are significant for conservation. However, it is important to critically analyze the approach and make clear the inevitable assumptions upon which it is based.

Therefore the lesson – and it is unfair to single this project out amongst many other conservation projects – should be that more careful analysis should be made before reaching for the “alternative livelihoods approach” and putting it in the project log frame matrix. While such an approach can be successful, and certainly has its place in modern conservation, equal weight should be given to sustainable use as a mechanism for conservation management.

# 2.0 Introduction

## **2.1 Project background**

##### Kazakhstan’s diverse landscape, with a variety of soils, climate and bio-geographical diversity, has made the country a globally important locale of agro-biodiversity (ABD), and especially mountain agro-biodiversity (MABD). The mountains of southern Kazakhstan are characterized by highly diverse climatic belts, which support a wide range of species and forms of mountain agro-biodiversity. As a result, they are the most important centre of this diversity, and harbour the genetic base for numerous traditional fruit crops, including all cultivated varieties of apples and apricots. At least 148 different plant species related to 24 agricultural varieties are concentrated in these mountains, constituting more than 75% of Kazakhstan’s total agro-biodiversity.

##### Effective in situ conservation is a critical component to the long-term conservation of ABD resources in Kazakhstan. Many diverse genotypes can be conserved at a much lower cost than is possible in ex situ conservation programs. In addition, maintaining wild germplasm in situ allows for continued natural genetic recombination and the ongoing evolution of resistances and adaptations to climatic conditions, pests, diseases, and other environmental factors.

##### Kazakhstan is the world’s centre of wild apple biodiversity, fitting for a nation whose largest city, Almaty, signifies “grandfather of the apples”. It is believed by scientists that the cultivated apple (Malus domestica) arose in the Tien Shan mountains of Kazakhstan and China from the wild apple (Malus sieversii), which has many of the characteristics (size, colour, sweetness) valued and utilised by growers. Environmental conditions in the region are so favourable that whole valleys are forested with apple trees, while varied microclimates and ecological niches allow for intense diversification of wild forms. In addition, one theory postulates that natural selection and distribution of the largest and sweetest fruits by bears and wild ungulates was a key factor for producing desirable apple varieties (highlighting the importance of integrated ecosystem functioning and conservation).

## **2.2 Purpose of the evaluation**

The evaluation is intended to provide a comprehensive overall assessment of the project and provide an opportunity to critically assess administrative and technical strategies issues and constrains associated with large international and multi-partner initiatives. The evaluation will also provide recommendations for strategies, approaches and/or activities to improve the potential of the Project to achieve expected outcomes and meet the objective within the Project timeframe. Findings of this evaluation will be incorporated as recommendations for enhanced implementation of the current project phase in the future years.

## **2.3 Key issues addressed**

Specifically the MTE will:

* Evaluate the overall project activities in relation to the objectives and expected outcomes as stated in the project document and the other related documents
* Evaluate the project effectiveness and cost-efficiency
* Critically analyze the arrangements of project management and implementation
* Evaluate the progress attained so far in relation to the project outcomes
* Investigate the strategies and plans intended for the timely achievement of the overall project goal
* List and document the first lessons learned in respect of the project design, its implementation and management
* Assess the sustainability of project interventions;
* Assess the relevance in relation to the national priorities
* Provide the recommendations for the future project activities and, where necessary, for the project implementation and management arrangements.

In particular, this evaluation will assess progress in establishing the information baseline, reducing threats, and identifying any difficulties in project implementation and their causes, and recommend corrective course of action. Effective action to rectify any issues hindering implementation will be a requirement prior to determining whether implementation should proceed.

## **2.4 The outputs of the evaluation and how they will be used**

Mid-term evaluations are intended to identify potential project design problems, assess progress towards the achievement of objectives, identify and document lessons learned (including lessons that might improve design and implementation of other UNDP/GEF projects), and to make recommendations regarding specific actions that might be taken to improve the project. It is expected to serve as a mean of validating or filling the gaps in the initial assessment of relevance, effectiveness and efficiency obtained from monitoring. The mid-term evaluation provides the opportunity to assess early signs of project success or failure and prompt necessary adjustments.

The core product of the Mid-Term Evaluation will be Mid-Term Evaluation Report. The report will document the strengths and weaknesses in the project’s design, strategy and implementation. Based upon the findings of the MTE it will play a critical role in the future implementation of the project by providing advice on:

1. How to strengthen the adaptive management and monitoring function of the project;
2. How to ensure accountability for the achievement of the GEF *Objective*;
3. How to enhance organizational and development learning, and;
4. How to enable informed decision-making.

## **2.5 Methodology of the evaluation**

The MTE provides evidence-based information that is credible, reliable and useful. It must be clearly understood by project partners and applicable to the remaining period. The MTE was carried out in line with GEF principles on:

* Independence
* Impartiality
* Transparency
* Disclosure
* Ethical
* Partnership
* Competencies and Capacities
* Credibility
* Utility

The MTE was carried out by two External Evaluators, independent from both the policy-making process and the delivery and management of assistance. The ToR for the evaluation is provided in Annex 1.

The MTE consisted of 6 days desktop study of available project documentation, 22 days in country consisting of field trips, interviews, and meetings etc., 3 days validation and 14 days for analysis and report writing and to incorporate corrections, comments and suggestions giving a total 45 person days.

The following analysis constitutes the MTE’s understanding of the project. It is based upon the history of the project cycle as it is represented in the project documentation, field visits and interviews with the various stakeholders.

On this basis the MTE has reviewed the project’s performance over the first half of its lifetime. It has considered what has been the impact of the project and how has it contributed to the GEF *Objectives*. Therefore the MTE has:

* Assessed the effectiveness of the individual *activities* (monitoring performance);
* Assessed the effectiveness of the various activities in achieving the *Outcome* (monitoring the impact), and;
* Assessed the effectiveness of the various *Outcomes* on achieving the *Objective* (monitoring the change).

The analysis of this has allowed the MTE to comment on the:

* Implementation – did the project do what it planned to do (i.e. is the plan still untested because the implementation was poor);
* Effectiveness – did the plan meet the predicted objectives (i.e. has the plan been tested and found to have flaws), and;
* Validation of the model’s parameters and relationships (i.e. which assumptions, variables and interactions were correct).

Based upon this the MTE can make justified[[5]](#footnote-6) statements about the projects progress towards anticipated results and the *GEF Objective*.

# 3.0 The Project and its Development Context

**3.1** **Development of the “*In situ* Conservation of Kazakhstan’s Mountain Agro-biodiversity” Project**

When evaluating any project it is important that the findings and conclusions are placed in the context within which the project is, or was, taking place. This is critical in any adaptive management approach and as GEF places very high values on such approaches; understanding the historical context, assumptions and the resulting decisions is an integral part of this learning process. Under an adaptive management approach mistakes are only made when we repeat something twice based upon tested and demonstrably false assumptions or we deliberately select, or willfully ignore, the balance evidence.

Modern conservation in Kazakhstan has its roots in, and has grown from, the previous system of *zapovedniks* (IUCN Category I) or strict nature reserves and *zakazniks* in which the principle management tool was a strict protection regime. The system of state control and strict protection may have protected biodiversity resources to a greater or lesser extent under this system. However, the political, social and economic framework within which it was framed was not, in itself, *sustainable*. In the early 1990s with the introduction of political, social and free-market reforms, particularly with respect to agriculture and property, new pressures have come to bear upon the environment and biodiversity. Pressures arising from individual or local needs rather than the demands of a centralized administration and the process of decentralization have created a need to address the issues at an appropriate level and in an equitable manner. It is therefore important to recognize the changing roles of protected areas and protected areas managers in this context and the increasingly complex needs of the management institutions and the demands this places upon the management institutions.

This historical context of the *Agrobio Project* has not only shaped the project but has also created the environment within which it is operating today. However, to fully understand the *Agrobio Project* and to appreciate its role in driving agro-biodiversity conservation in Kazakhstan we need to “pick up the threads” of the more recent developments of the project itself.

The first moves towards developing the project appear to have come from the Ministry of Ecology in cooperation with the Institute of Botany around 1996/97 which resulted in UNDP CO Kazakhstan submitting a request to the GEF in 1997 for a project to address the issues of agrobiodiversity conservation at a period when the *National Strategy and Action Plan on the Conservation and Balanced Use of Biological Diversity,* and National Environmental Action Plan were being developed and focusing attention on various issues surrounding the CBD.

GEF responded positively in 1998 and a PDF A agreement was signed on 7th October 1998 costing US$22,000 which resulted in the approval of a PDF B approved in July 2000 and costing US$230,976. A national team was put in place and a short term international technical consultant engaged. This produced a Project Document in March 2001. It is important to note that this phase included “the changes in the original strategy” as approved in PDF A such as transition from OP 4 “Mountain Ecosystems” to OP 13 “Agrobiodiversity”. In this version however the national experts and the Ministry of Natural Resources and Environmental Protection of Kazakhstan responsible for GEF projects have found a number of omissions and inaccuracies. As a result, the international expert jointly with the national project team have prepared and presented in September 2001 the second version of the project brief. Upon review, GEF required significant modifications of such document to strengthen the strategy, simplify the language, reduce the size and better analyze the threats. Therefore the second version was also returned. A second international technical consultant was engaged to develop a consensus between GEF, UNDP and the GoK resulting in the development and submission of a third draft in March 2002.

The project brief was adopted in 2002 and GEF funding was allocated to the UNDP Country Office, after this the project document was passed to the next stage of being brought in conformity with the UNDP formats.[[6]](#footnote-7)

After a further 36 months the Project Document was finally signed on the 22 December 2005[[7]](#footnote-8). However, the project was starting up just as UNDP financial procedures were closing for this period. The project activity started at the beginning of February 2006. As per UNDP procedures the project started in January, by the end of March all staff members were recruited and operational work on “Project Agrobio” started in March 2006. The *Agrobio Project* was launched in March 2006 and the second GEF international technical consultant was invited back to assist with the Inception Report which was produced in June 2006. During the Inception Phase the project log frame matrix (LFM) was updated to comply with GEF guidance on indicators but no significant changes were made to the LFM objective and outcomes.

As stated earlier the project funds were received in May 2006 and the project began its work in earnest. However, it was beset by a number of logistical difficulties as the Project Management Unit was based in Astana, a considerable distance from the project sites with a Field Unit based in Almaty. The first Project Implementation Review (PIR) took place in July 2007 and a second PIR was performed in July 2008 leading up to the Mid Term Review (MTR) in January 2009.

Importantly between these reporting stages the project organized an international conference in order to “specify the approaches applied to address the issues of Mountain Agrobiodiversity (MABD)”. The importance of this bold step was to broaden the definition of agrobiodiversity by moving the project from a relatively narrow “plant breeders” approach to biodiversity to a much broader ecological approach that included issues of environmental change, stochastic risk, and the ecological and evolutionary process that frame biodiversity within the inexact science of conservation and a robust interpretation of the “precautionary principle” as it relates to the conservation of biodiversity important to future agricultural development.

The last important chain of events that was taking place concurrently was the startup of implementation of a UNEP-GEF regional agrobiodiversity project *“In Situ/On-farm Conservation of Agro-biodiversity (Horticultural Crops and Wild Fruit Species) in Central Asia”*. The “UNEP project is focused on genetic diversity, academic and research studies, farmer-based interventions, and the conservation of agricultural and agro-ecological ecosystems (forest farms)”[[8]](#footnote-9). The implications of this will be examined later in the report and it is noted here that the two projects, one national one regional (but with significant interventions within the locality of the *Agrobio Project*) were being developed concurrently.

The above only serves to highlight a small part of the complexity inherent in any project development and implementation - against which a project must be judged. Adding to this complexity we can include the considerable reforms in the policy and legal framework that were taking place, the institutional changes (the parent ministry changed from the Ministry of Agriculture to the Ministry of Ecology, and back again during this period), the significant national socio-political and economic changes taking place and the rapidly evolving understanding of the science and management of agrobiodiversity conservation. Indeed, within this “sea” of change, perhaps the only continuity was provided by the current PIU.

## **3.2 Project start and its duration**

The project was approved in December 2005 for 6-year period with an end December 2011.

## **3.3 Summary of the implementation status**

The first Annual Work Plan was submitted in May 2006 following the Inception Phase and during the preparation of Inception Report. The Project is currently implementing AWP 3. At January 2009, the second half of AWP 3, the GEF budget execution is US$ 1,695,174,65 (61.2%)[[9]](#footnote-10). At June 2008[[10]](#footnote-11) the cash co-financing budget execution was US$ 5,820,000 (48.8%) and in-kind co-financing committed was US$ 3,220,000 (27.0%).

## **3.4 Project budget**

**Summary of Project Cost and Financing:**

|  |  |  |
| --- | --- | --- |
| GEF | | |
| Project | US$ | 2,770,000 |
| PDF A | US$ | 22,000 |
| PDF B | US$ | 230,967 |
| **Subtotal** | **US$** | **3,022,967** |
| **Co financing** | | |
| Government of Kazakhstan (MoA) | US$ | 17,022,710 |
| Almaty Oblast Akimat | US$ | 300,000 |
| Baldyrgan | US$ | 960,000 |
| Jibek Joly | US$ | 800,000 |
| Agroinprof-service | US$ | 108,000 |
| Kazakhstan Community Loan Fund[[11]](#footnote-12) | US$ | 70,000 |
| Green Salvation | US$ | 18,000 |
| Farmer of Kazakhstan | US$ | 16,200 |
| ACDI/VOCA Farmer to Farmer | US$ | 30,000 |
| **Subtotal** | **US$** | **19,546,910** |
| **Project Total** | **US$** | **22,569,877** |

## **3.5 Problems that the project seeks to address**

The Project Document stated that the wild fruit forests have declined in area in the Zailiyskiy Alatau region by 70% since 1960 and the more remote Dzhungar Alatau forests have declined by 50% during the same period. It goes on to identify the follow threats and root causes of loss to agricultural biodiversity as being predominantly anthropogenic and including:

* *Mountain agro-biodiversity habitat destruction* – predominantly resulting from over-grazing but also due to forest fires set by farmers to clear land, construction of buildings and infrastructure and dachas and a high number of visitors;
* *Over-harvesting* - for nutritional and fuel wood although it was admitted that the wild fruit forests comprised a very small proportion of local communities livelihood needs;
* *Pest and disease* - apparently as a result of human interventions such as orchards outside the protected areas and the introduction of new plants in dacha gardens, etc, although only one instance of serious pest attack in 1998-99 is cited and this was apparently resolved following a particularly harsh winter, and;
* *MABD genetic erosion and ecological competition from introduced species* – “*of all MABD species, the apple is most vulnerable to the threat of genetic erosion (although apricot is also vulnerable). A decline in the number of native varieties of wild apples is already under way, caused by the* ***consistent pollination of native trees by cultivated varieties*** *and the subsequent accumulation of cultivated genes within the wild varieties. This process reduces the resistance of native varieties to prevailing natural conditions and to the impact of pests and diseases, and reduces the ability of wild varieties to naturally regenerate*”. The document quantified “*Cross-pollination from domestic varieties to wild varieties caused by this close proximity between farms/gardens and natural apple forests is one of the most important factors destabilizing agro-biodiversity ecosystems, leading to changes in the genetic structure of wild populations*”.

These threats were framed within the context of:

* The steady decline in socio-economic conditions in rural Kazakhstanfor over a decade. Rural inhabitants have little knowledge of how to take advantage of opportunities, or even protect their own interests, within the “free market” system that is emerging in Kazakhstan;
* **Inadequate and uncoordinated conservation and management system** for the conservation of these areas, and “*there is no integrated and unified approach to their conservation and management. A large number of agencies, enterprises and communities have varying levels of responsibilities or interests in mountain agro-biodiversity resources, including the FFHC, local governments, the Ministry of Agriculture, Agency for Tourism and Sport, local fruit farmers and processors, dacha owners, and others. Many of these groups have conflicting objectives and needs, and even those with potentially mutual objectives may, through poor communication and coordination, cause damage to MABD*”. This resulted in “*a lack of clear mechanisms and definition of liabilities and responsibilities at the NP level necessary to effectively apply national legislation to the specific field situation. Accompanying this is the* ***absence of adequate experience among decision makers and managers*** *on how to apply the NP concept in the specific context of modern Kazakhstan, and a lack of adequate technical or managerial capacity to make critical shifts from existing Soviet-derived approaches to those which can meet its conservation objectives. One result of this lack of conservation management experience is a continued failure to orient research and monitoring towards conservation of MABD*”, and;
* “*As a further complication to these institutional and technical challenges, Kazakhstan’s economic and financial problems of the past decade have resulted in* ***insufficient state financial support*** *to NPs and forestry management/research institutions. In addition, the* ***absence of mechanisms for generating revenue*** *from existing uses of the NPs and reserves, and disruptions caused by the transition to a post-soviet system, have also affected conservation and land use management. As a result, government agencies tasked with forest protection lack basic technical and logistical equipment and the capacity to undertake forest restoration activities*”.

The Project Document built a convincing argument for the need to intervene to prevent the further loss and reverse the historical losses of agricultural biodiversity by focusing on two crop wild relatives (CWR) namely wild apples *(Malus sieversii),*  and apricot (*Armeniaca vulgaris*).

## **3.6 Immediate and development objectives of the project**

The *project* that emerged from the Project Document was one that took a very conventional approach towards conservation of biological diversity setting the conservation of crop wild relatives within a protected areas system. The conservation of genetic material was to be driven by strengthening *in situ* genetic reserves within protected areas and the restoration of natural fruit forests, strengthening of the institutional management capacity and development of an effective policy and legal framework. This was to be supported by the provision of assistance to local communities to develop alternative livelihoods and income generation and increasing awareness and education of agrobiodiverity conservation.

The Project Document lists the project’s *Goal[[12]](#footnote-13)* as being:

*“The conservation of key habitats and ecosystems of globally significant mountain agro-biodiversity in Kazakhstan”*

The Project Document lists the project’s *Objective[[13]](#footnote-14)* as being:

“*Stakeholders conserve agro-biodiversity in two priority sites within Kazakhstan’s Tien Shan Mountains by developing and applying new methods and tools for conservation, including partnerships among conservation and land-use agencies, SPAs, local governments, local communities and the private sector*”.

## **3.7 Main stakeholders**

The project beneficiaries as listed in the Project Document are:

* Forestry and Hunting Committee of the Ministry of Agriculture, the Ministry of Environmental Protection;
* Specially Protected Areas: Ile-Alatau National Park and Almaty State Reserve;
* Forestry management divisions: Sarkand and Lepsinsk State Forestry Management Divisions;
* Almaty Oblast Akimat;
* Local communities living near the project sites;
* Private sector engaged in agriculture, fruit-processing industry and rural tourism within the project sites, and;
* World community.

A significant omission from this list would be the various national and international fruit growing or plant breeding interests who might reasonably expect to utilize the benefits of agrobiodiversity conservation in the future to develop new varieties of fruit crops and extract specific genotypes for the improvement of fruit crops in a rapidly changing environment.

## **3.8 Results expected**

The project’s *Outcomes* are listed as:

*Outcome 1: Ecosystem-based conservation and management of wild crop relatives at two project sites*

*Outcome 2: Strengthened institutional, technical, and financial framework for ABD conservation*

*Outcome 3: An effective legislative framework for the conservation and rational use of agro-biodiversity resources*

*Outcome 4: Alternative livelihoods benefiting local communities in project sites, reducing natural resource use pressure on mountain agro-biodiversity*

*Outcome 5: Awareness and support increased at all levels regarding the values and need to conserve Kazakhstan’s mountain agro-biodiversity*

# 4.0 Findings and Conclusions

## **4.1 Project Formulation**

The *project strategy* as described in the Project Document and to a large extent in the LFM was summarised thus:

* *In situ conservation management of agrobiodiversity at the ecosystem level within protected area and ex situ measures to support ;*
* *Strengthening the enabling environment by building management and financial capacity;*
* *Strengthening the policy and legal framework;*
* *Offsetting local community opportunity costs by providing alternative livelihoods, and;*
* *Increasing institutional and public awareness of agrobiodiversity and conservation.*

In all, a fairly robust strategy, however, the conservation of agricultural biodiversity requires two distinct approaches. These can be characterized as “*genetic reserve conservation*” and “*on farm conservation*”. The two activities can be described thus:

“*Genetic Reserve Conservation*: the location, management and monitoring of genetic diversity in natural wild populations within defined areas designated for active, long term conservation.”

“*On-farm Conservation*: the sustainable management of genetic diversity of locally developed crop varieties (land races), with associated wild and weedy species or forms, by farmers within traditional agricultural, horticultural or agro-silvicultural systems.[[14]](#footnote-15)”

The Project Document took a reasonable approach that this project would focus on the *genetic reserve conservation* approach. That is, to conserve the wild agrobiodiversity in the form of *crop wild relatives* within their naturally occurring ecosystem and subject to natural environmental and biological processes and evolutionary selection.

In addition to this it would be necessary to develop an *ex situ* programme (living collections) in order to safeguard genetic material against catastrophic events and as a means to multiply (in this instance wild cloned) material as part of a conservation management intervention designed to restore the degraded *in situ* wild fruit forests as a precautionary measure to overcome a lack of natural recruitment within the wild population.

The significant threat of ingression of cultivated genetic material from cultivated varieties into the wild population was to be determined by the use of genetic analysis as a means to identify the extent of the ingression and remove hybrid trees from the wild population.

The *on-farm conservation* would not be addressed within the activities and results framework of the *Agrobio Project* possibly because it was considered too complex and arguably because there was a GEF-funded UNEP regional project at about the same stage of development that was focusing on “*genetic diversity, academic and research studies, farmer-based interventions*”.

The MTE notes that the project may have suffered from “over-design” in as much as it was extremely detailed, ambitious and tried to include a large number of different interests “under one umbrella”. This is likely to have been the result of a number of reasons *inter alia*; the confusing surrounding the understanding of agrobiodiversity, the real and perceived needs of a GEF project document, an attempt to include too many issues related to general protected areas management with the very narrow requirements of a *genetic reserve* approach, the genuine interests of fruit breeders and a weak adaptive management framework which made it difficult to conduct experimental management and increased understanding of the causes driving the loss of *in situ* agrobiodiversity or to change the course of the project in light of experience gained[[15]](#footnote-16).

However, the PIU has developed a good understanding of the issues related to establishing a genetic reserve for the conservation of *in situ* agrobiodiversity and despite a weak adaptive management framework (for instance at the project-level it has not been possible to change indicators in the LFM even when there has been evidence to suggest that the intervention was not working and at an intervention-level there should be a more precise description of how regeneration might be measured – e.g. seedling recruitment, age class, occurrence of ingressed genetic material within genetic reserves, structure of fruit forests etc. as part of a longer term monitoring programme to track the benefits of the project beyond the life of the GEF funding) has demonstrated that it can learn in the face of experience and the MTE has confidence in the PIU’s ability to address these issues technically and intellectually. However, it is still working within a project design that had a number of flaws and when read several times, lacks any real clarity of purpose.

A last important contextual point must be to recognize that protected areas in Kazakhstan are in a transition phase from a system of strictly protected areas to one which incorporates a variety of protected areas categories and management interventions. This also involves a dramatic change in the approach to management from a non-interventionist approach to one that recognizes that on occasion there should be management interventions in order to either remove a specific threat or maintain a specific value of the protected area according to the objectives set out in the management plan.

These changes don’t occur “overnight”, indeed they take time to filter through and embed themselves in the management “culture”. At the time that the Project Document was being formulated the planning process was dominated by scientific thinking – which is an important component of protected areas planning and management, but not the only component. Furthermore, there was confusion over the purpose of a GEF agrobiodiversity project and the necessary approaches to conserving genetic resources within a protected area. An earlier review of another GEF agrobiodiversity conservation project suggests that this was a common issue shared amongst such projects in preparation at that time.

Furthermore, the social, economic and administrative changes taking place between the 1996 and the project start up (effectively in 2005) had resulted in a dramatic reduction in some of the threats related to overexploitation. Although this is picked up in the GEF comments and some slight changes were made that changed the emphasis from overexploitation to “*poverty*” alleviation “*and increasing their support for conservation by demonstrating the economic benefits of effective conservation and sustainable development*”. Despite this change of terminology the project was still pursuing an alternative livelihoods approach.

### 4.1.1 Implementation approach

Before reviewing the design, management and implementation of the project it is important to restate the GEF Operational Programme #13 (agrobiodiversity) that clearly sets out that:

“*A successful outcome is one where biological diversity important to agriculture globally, is conserved and used in a sustainable manner. There is a need to distinguish between agricultural biodiversity which is currently important for food security and sustainable livelihoods, (for example, that which contributes to the breakdown of organic matter and recycling of nutrients to maintain soil fertility; the maintenance of viable ecological systems including productive vegetation, fish and other animal populations; the elimination of invasive species; provision of ecological services to the wider ecosystem); and biodiversity important to future food security, such as genetic resources with the potential to thrive in future environments*”[[16]](#footnote-17);

And compare this with the Project’s *objective*:

“Stakeholders conserve agro-biodiversity in two priority sites within Kazakhstan’s Tien Shan Mountains by developing and applying new methods and tools for conservation, including partnerships among conservation and land-use agencies, SPAs, local governments, local communities and the private sector”.

Clearly, the project was envisaging a genetic reserve approach to *in situ* agrobiodiversity conservation.

The MTE considers that the Project Document was very professionally written and on the surface presents a reasonable strategy for the GEF-funded intervention. However, on closer inspection it appears to have attempted to include numerous aspirations within one project which could have been greatly simplified leading the MTE to assume that there was an element of “design by committee”, a very large committee[[17]](#footnote-18). Furthermore, the apparent confusion regarding a clear definition of agobiodiversity conservation and weaknesses in the threat identification[[18]](#footnote-19) (including the need to update the threat identification) and assessment has led to a number of inherent inefficiencies within the project’s strategy - indeed this may have led to the inclusion of project *outcomes* which might not have been necessary in order to achieve the projects overall *objective.*

This was picked up by the GEF comments (Switzerland) on the draft Project Document that stated:

*“The technical and scientific background information provided by the proposal is very comprehensive and the description of the general framework conditions sufficient for a general understanding of the project setting. The project proposal itself, however, is rather convoluted, confusing and difficult to understand. The proposed activities appear not logically conclusive, the specific objectives highly ambitious and the related activities difficult to implement. Although the main thrust of the project appears to focus on two protected areas -one already existing, the other to be established by the project-, it remains unclear of how this will be achieved.”*

Furthermore, because the project was not addressing the issue of on-farm agrobiodiversity, despite the successful outcome of the project, the *in situ* genetic reserves may remain vulnerable to future risks particularly associated with “genetic pollution” or ingression of genetic material (pollen) from modern agricultural cultivars grown on orchards and private properties inside or close to the protected areas.

These issues are further elaborated below as:

Confused definition of agrobiodiversity conservation: There was, and persists today, confusion over the exact definition of agrobiodiversity conservation and how that relates to the GEF project objective amongst the project partners. It is important to stress that the project recognized this at an early stage and took a very sensible course of action by organizing an international seminar to seek as wide an opinion as possible to develop a more robust understanding of agrobiodiversity *conservation*. At this point it is important to distinguish between agrobiodiversity *per se* and the conservation management of genetic reserves as it relates to the project’s objective. The outcome of the seminar was a greater understanding amongst the project partners that agrobiodiversity conservation using genetic reserves means removing any form of intentional human selection so that environmental and biological selection pressure, rather than specific agricultural values (such as taste, fruit size, disease resistance, etc.), are the principle evolutionary forces acting on the *in situ* population and thus through a process of recombination and natural selection sufficient genetic diversity is maintained within the population to adapt to future environmental change.

The second aspect relates to the lack of awareness of the role of *land races[[19]](#footnote-20)* or locally developed crop varieties that are a result of historical farmer selection within a specific locality and therefore share 100% of their genetic material with the *in situ* wild population. Given that the area is a centre for wild apples it seems hard to believe that historically there has not been any informal farmer selection of specific wild forms and the maintenance of these lines on garden plots or in and around villages[[20]](#footnote-21). Such land races offer an opportunity for sustainable use of on-farm biodiversity without prejudice to the *in situ* wild populations.

Confused threat analysis: The Project Document placed considerable emphasis on the impact of over grazing, collection of wild fruits, disease and the collection of firewood – over-exploitation[[21]](#footnote-22). However, the MTE could find little evidence to support the original threat analysis[[22]](#footnote-23) as it relates to overexploitation during the MTE[[23]](#footnote-24).

Arguably this was most likely a result of the delay in getting the Project Document approved. Historically there had been such anthropogenic impacts upon the wild fruit forests but by the time of the project’s start up at the end of 2005 these threats had been significantly reduced as a result of economic reforms and improvements in local living conditions. If this was the case then the MTE believes that it arose out of a genuine desire to achieve the project’s objective but was based upon a lack of experience of conservation management and the conservation of genetic reserves. These often require a significant change in management approaches and this entails the development of new or additional management approaches and management skills. It is clear that the project recognized many of these issues and has been taking steps to address them. However, GEF projects can achieve a certain amount of momentum, comparable with a large ship, and once in motion they are difficult to turn around without some of the critical passengers jumping over the side. The MTE provides an opportunity to slow the ship, consider the best course to steer, and ensure that there are sufficient provisions to reach the destination before re-embarking on the journey.

That said, it is still not clear what is causing lack of regeneration in the wild population and this needs to be addressed by the project. The assumption that this can be resolved by rehabilitation using material multiplied *ex situ* and replanted is most likely correct but still remains *a priori* and therefore untested. Furthermore, if the original reason for the decline in recruitment is not identified, or steps taken to spread the risks through additional and alternative actions, then any rehabilitation efforts remain vulnerable.

The “unsubstantiated” threat analysis *or* perceived threats (at the time the project started) also had another important impact upon the project design and implementation. This was the inclusion of an alternative livelihoods strategy, *outcome 4*. The purpose of an alternative livelihoods approach should be clearly set out. In its most extreme application it implies a *quid pro quo* in which resource users agree to forego the use of resource in return for alternative benefits, the *quid pro quo* being that such benefits will be removed should they continue or resume their past exploitation. However, an alternative livelihoods approach is often used in order to absorb or offset the opportunity costs incurred when local resources users are denied access or prohibited from carrying out certain activities or to attempt to deflect interest towards other income generating activities and thus relieve pressure on the target resource. In this case, given that the threat identification appears to be unsubstantiated or, more likely, had practically disappeared, it is important to challenge the use of an alternative livelihoods approach and ask a crucial question – *an alternative to what?*

The Project Document, despite the now absent threat from overexploitation was still stating that “*the project will work extensively to provide viable, sustainable alternatives to local residents dependent upon the use of forest (wild fruit forest and other) resources[[24]](#footnote-25)*”.

The project has had a number of successes. These are detailed in sections 4.5 to 4.9 against specific *outcomes* from the project log frame.

However, the MTE has concerns about the overall projects achievements within the current time frame for the project and about the impact of the project on agricultural biodiversity (genetic reserves) *per se*. This concern is not so much a reflection on the project, it is related to the often-confusing field of agrobiodiversity and recognizes that this is a fast-developing discipline; therefore the concerns are related to specific components of the projects design and recommendations will be made in order to strengthen these areas.

These concerns should be considered alongside the MTEs findings that the project overall is being well implemented and that the PIU has strong leadership, considerable internal intellectual capacities, organizational abilities and confidence as an institution. The MTE’s concerns are summarized here as:

* The definition of agrobiodiversity and how this relates to conservation management still needs to be clarified and articulated to all project partners;
* No clear project definition of a land race and appropriate linkages to on-farm activities;
* Weaknesses in the threat analysis[[25]](#footnote-26);
* The use of an alternative livelihoods strategy and the resources available for this to really have an impact;
* The absence of any *sustainable use* approach for cost-effective and equitable conservation of *in situ* agrobiodiversity resources[[26]](#footnote-27);
* Weaknesses in the adaptive management approach to the conservation of *in situ* wild relatives and on-farm resources;
* A need to address agrobiodiversity in the development of any Access and Benefit Sharing (ABS) law[[27]](#footnote-28), and;
* Weaknesses in the management capacity of the partner organizations that still need to be addressed – specifically within the protected areas and their future ability to finance conservation management given the current economic climate[[28]](#footnote-29).

The project has already responded to many of these issues and is showing that it is, to a large extent, following an adaptive management approach (international conference to define agrobiodiversity, moving the PIU to Almaty, etc.) however this needs to be formalized and clearly documented[[29]](#footnote-30) so that there is a structured framework developed to demonstrate when changes are made to the strategic approach (e.g. it clearly sets out the reasoning, demonstrates how it will strengthen the strategic approach, identifies key assumptions and risks, indicators and describes how it will be monitored and adapted if necessary). An adaptive management framework is included as an annex to this report (Annex 5)

The MTE also notes a number of internal and external events[[30]](#footnote-31) have affected project performance. However, the MTE considers that the project has responded well to these and the responses are an indication of the projects management abilities. These were, *inter alia*:

* The initial establishment of the PIU in Astana and the subsequent move to Almaty;
* Changes in staff in the first year;
* Delays in obtaining the start up budget;
* Worsening economic crisis in the last year, and;
* Changes to the Land Code which have affected privatization of land.

### 4.1.2 Country ownership

The *Agrobio Project* is implemented through National Governmental Execution and the designated National Coordinating Agency is the Ministry of Agriculture, Forestry and Hunting Committee (FHC). UNDP CO provides a project assurance role.

The *Agrobio Project* is operating in a policy framework that includes, *inter alia:*

* Convention on Biodiversity Conservation (CBD)
* Kazakhstan’s National Strategy and Action Plan on Conservation and Balanced Use of Biodiversity (NSAPCSUBD) specifically identifies mountain agro-biodiversity ecosystems as one of seven priority ecosystems in Kazakhstan
* The project supports three priority areas in the Environment and Natural Resources section of the GoK Long-Term (2030) Development Strategy of Kazakhstan: “Conservation of Biological Diversity”, “Sustainable Use of Natural Resources” and “Environmental Education”
* GoK Decree 1167 of 1 August 2000 approved a program of conservation, development and use of Kazakhstan’s genetic resources of agricultural plants, animal species and micro-organisms for the period of 2001-2005.
* GoK program of 2000 “Conservation, Development and Use of Genetic Resources of Agricultural Plants, Animals and Microorganisms”.
* National Environmental Action Plan (NEAP)
* UNDP Global Programme on Agriculture and Food Security
* Various other government decrees and strategy documents of relevance to ABD have been developed[[31]](#footnote-32).

### 4.1.3 Stakeholder participation

There is a broad stakeholder participation in the project’s implementation providing popular support and legitimacy for its activities. However, it should be noted that local community participation is a relatively new approach as it relates to protected areas planning and management. While there is clearly a robust institutional and NGO participation it is important to keep building local community participation as an active and involved process. The project is ideally placed to develop these approaches in areas such as the multiplication of wild clones, rehabilitation of degraded areas any experimental management interventions and subsequent monitoring. There is a natural tendency to retain these activities within the institutions for the sake of efficiency and convenience. Time taken to involve local communities in these activities, although sometime frustrating is an important process in building local support and “ownership” of the project’s conservation successes.

### 4.1.4 Replication approach

The approaches to agrobiodiversity conservation – in particular the genetic reserve and *ex situ* living collections – are easily replicable as evidenced by the FHC request to extend the project’s activities to another area (planned for establishment of Tarbagatai Reserve) where wild fruit forests are more intact. However, much will depend on the capacity of protected areas managers to develop their management planning capacity because the genetic reserve approach is nested within a modern protected area management planning and implementation that requires significant institutional planning capabilities in order to ensure that protected areas are not just ecologically sustainable but also meet a level of economic and social sustainability.

### 4.1.5 Cost-effectiveness

The Project document calculated the incremental costs as:

“Taking into account all contribution, the GEF alternative amounts to **US$9,365,602**. The difference between the GEF alternative and the baseline amounts to **US$7,790,167**which represents the incremental cost of achieving sustainable global environmental benefits. Co-financing comprises **US$4,789,200**, and the GEF contribution amounts to **US$3,022,967**”.

At the midterm of the project based upon the June 2008 PIR these figures are estimated as the total GEF amounting to **US$10,390,000** with the difference between the GEF alternative and the baseline amounting to US$9,040,000 which represents the incremental costs of achieving the sustainable global benefits. Co-financing comprises **US$5,820,000** cash investment, **US$3,220,000** in-kind contributions and the GEF contribution amounts to **US$1,350,000**.

However, given the current predictions for economic growth, nationally and internationally, it is likely that the co-financing component may well be reduced or remain the same in real terms but be used to support staffing without much opportunity for capital investment in the protected areas for the foreseeable future as part of the GoK Anti Crisis Programme aimed at maintaining human resources (staffing levels) through the current economic downturn[[32]](#footnote-33).

The MTE reiterates the Project Documents statement that:

“*Maintaining wild mountain agrobiodiversity germplasm in situ is more cost-effective than ex situ conservation and will allow for the continued evolution of resistances and adaptations. Global environmental benefits include significant option and insurance values, existence values, and direct-use values. For global agriculture, this genetic diversity preserves options to rebuild, preserve, or augment the genetic vitality of domestic varieties. It also serves as a global insurance policy against catastrophic disease by providing the genetic potential to thrive in future environments. With this safety net in place, managers and policymakers have additional time to uncover as yet unknown global benefits in a manner that is consistent with the precautionary principle.”*

### 4.1.6 Linkages between project and other interventions within the sector

The establishment of the PIU in the CAREC provides a good opportunity for a flow of ideas and linkages with other initiatives within the environmental, and specifically conservation, sector. CAREC provides a good “home” and ensures that the project does not operate in isolation.

The MTE does question why the UNEP regional agrobiodiversity project was not more closely linked with the this project and can only surmise that there was an attempt to keep the projects separate to avoid any replication and perhaps it was felt at the time that on-farm biodiversity conservation had little in common with genetic reserves. However, this project is demonstrating that there is considerable opportunity for the two approaches to mutually supportive, and, when placed in the context of the “*genetic reserve conservation*” and “*on farm conservation*” paradigm might even represent a continuum should the project be able to identify any extant land races.

The Project Document stated that:

*“The project will undertake collaborative arrangements with other projects, primarily through a Learning Portfolio of projects focused on agro-biodiversity in Asia, which will be managed by the International Plant Genetic Resources Institute (IPGRI). The project has also established collaborative arrangements with the UNEP-GEF project “In Situ/On-farm Conservation of Agro-biodiversity (Horticultural Crops and Wild Fruit Species) in Central Asia”, and with two ongoing GEF Small Grants Program projects, 1) “Conservation and restoration of wild apple forests in the Zailijskij-Alatau's foothills” and 2) "Conservation and restoration of bee abundance in the foothills and the lower mountain belt of Zailiyskiy Alatau mountain range””[[33]](#footnote-34).*

While the project has capitalized on the bee keeping experience of the GEF SGP it has not investigated the possibilities of sustainable use of wild fruit products despite the SGP having funded an enterprise to replant and utilize wild apples for vinegar production.

Collaboration between this and the UNEP project is less clear, indeed there are few linkages between the two projects and it is strongly recommended that the two projects develop the synergies in order to demonstrate the continuum between genetic reserves and on-farm conservation making use of any land races that might be found in the project area.

### 4.1.7 Management arrangements

The current management arrangements appear to work well with no overlapping responsibilities. It should be noted that this is a combination of the management arrangements that have been put in place and the competence of the individuals involved*.* However, the MTE questions the need for a member of the PIU to be stationed in Astana and considers that better use would be made of the human resources if this position was moved to the project office in CAREC, Almaty.

## **4.2 Implementation**

The Forestry and Hunting Committee (FHC) under the Ministry of Agriculture is the Implementing Partner/Responsible Party for the project. The Implementing Partner will be responsible for project implementation and delivering outputs in cooperation with UNDP and other partners.

The First Deputy Chairman of the FHC chairs a National Coordinating Committee (NCC), to ensure overall leadership, coordination and political support for the project. The NCC meets two times per year to provide guidance and oversight on project implementation activities, including approval for all significant project initiatives and sub-contracts, to act as the primary lobbying and coordinating body to ensure GoK policy fit, legislative, and financial support for the project, and to act as a liaison between the Project and other national and international programs, organizations and donors.

The NCC appears to actively participate in the project’s implementation and take a keen interest in the activities and its implementation responsibilities and has supported the NPM and PIU on a number of occasions when it has been necessary, for instance in holding the international seminar and incorporating its outcomes into the project’s strategy.

### 4.2.1 Supervision of the project implementation

Supervision of the project is satisfactory with a good working relationship between the UNDP CO, FHC and PIU. The PIR and other project monitoring documents give an accurate account of the project’s progress and it is clear that there is sufficient oversight as demonstrated by the decision to move the project office from Astana to Almaty to be closer to the field sites. The MTE does question the need for a member of the PIU to be permanently based in Astana and recommends that this position is transferred to Almaty for the remaining period of the project[[34]](#footnote-35).

### 4.2.2 Project execution

The Executing Agency is represented by the Forestry and Hunting Committee of the Ministry of Agriculture (MoA). The Ministry of Environmental Protection (MEP) acts as the National Focal Point

### 4.2.3 Project implementation

Project staff is supplied by a national project team PIU and technical advice is provided by national experts, a partnership organizations and a number of national technical consultants and an international adviser. The MTE considers that the PIU has considerable internal strengths and capacities as well as a willingness to challenge external and internal assumptions related to the conservation of agrobiodiversity and adopt new ways to achieve the project’s objective in the light of increased understanding of the issues. The project has demonstrated confident and capable leadership in what has sometimes been a challenging operating environment and there is sufficient coordination between the various partners.

The project administration is efficient and effective and administrative procedures appear to be streamlined.

The projects financial management, budgetary procedures and expenditures have been audited for 2006 -2007 and 2007 – 2008 and found to be in order.

### 4.2.4 Planning, Monitoring and evaluation

The projects logistical planning and monitoring of implementation of activities is very efficient reflecting the commitment of the PIU in carrying out their duties.

However, as was noted earlier the project needs to strengthen its adaptive management approach through a range of experimental pilot approaches by challenging some of the basic assumptions behind a specific intervention. The purpose of this is to strengthen the approach and to avoid any danger of implementing all the activities only to find out that some critical issues had not been identified in the first place. While there is no indication that this is happening, these systems are so complex that there is always a high risk (with any conservation project) that some of the initial assumptions about the system are wrong. An example of this would be the alternative livelihoods approach when clearly over-exploitation of the resources has ceased. However, this issue is dealt with in detail in section 4.2.5

### 4.2.5 Risk management

The risks identified during the project formulation appear to have been adequately tracked and do not appear to have materialized. Once the project started there appears to have been continuity in the senior GoK personnel and support to the protected areas has been consistent although this will likely be severely challenged in the next 2-3 years. The adaptations and new legal instruments envisaged in the project’s design have progressed in a timely fashion and there has been little activity in the private sector development of the fruit sector. While it is hard to judge whether the greater awareness of agrobiodiversity has filtered through to financial support to its conservation given the current economic climate, it is clear that there is growing awareness at this level which can in the future be turned into material support.

### 4.2.5 Risks and assumptions

The Project Document developed a number of risks and assumptions[[35]](#footnote-36) upon which the intervention is based and the MTE broadly agrees with the evaluation of these risks and assumptions

*“Main assumptions:*

* *That frequent changes of key senior GoK personnel will not adversely impact project implementation.*
* *That GoK support for the strengthening and upgrading of the protected areas will continue*
* *That required adaptations and new legal instruments will be viable within the context of Kazakhstan legal system*
* *That the approval process for critical legal instruments will occur in a timely manner*
* *That individual stakeholders do not overly dominate and monopolize private sector development of fruit sector*
* *That greater awareness at state decision making levels will result in increased political and financial support for agro-biodiversity conservation.*

*Risks:*

*Project risks are low to medium and depend on how robust the assumptions in the log frame prove to be. Assumptions related to biological issues have been carefully assessed during the PDF-B process and are based on best practices and best available knowledge. Assumptions regarding the willingness of other to cooperate with and support project objectives, and to assimilate and apply lessons from the project, is also considered robust based on consultations during the PDF-B and significant co-financing and participation envisioned during the Full Project.”*

However, the MTE also considers that the change in circumstances between the historical and actual situation should have been addressed more fully either in the final version of the project document or during the inception phase. Furthermore, there is a weakness in the project’s strategy which can be summarized thus:

The initial threat analysis does not appear to have challenged the assumption that current and historical over-exploitation by local communities is the root cause of the lack of natural regeneration in the wild fruit forests.

The threat from ingression of genetic material was clearly identified and some reasonable steps have been taken to address this issue. But there still remains the question of why there is no natural regeneration taking place and therefore the assumption that replanting using material from wild plants will resolve this issue remains just that – an untested assumption. Therefore if, sustainability of the wild fruit forests will only be achieved when there is natural regeneration taking place from both vegetative and seed recruitment without any further ingression or maintenance of farm-origin genetic material within the population (or at least minimal amounts). There are some unstated assumptions that this will happen and alternative scenarios should be explored – what if natural recruitment doesn’t take place? What if seed recruitment continues to maintain farm-origin genetic material within the population of the genetic reserve?

An adaptive management approach would better identify this as an assumption and set in place a number of management experiments to either confirm or dismiss the hypothesis that current and historical over-exploitation by local communities is the root cause of the lack of natural regeneration and that farm-origin genetic material is being lost from the genetic reserve population as a result of future management interventions.

This highlights the difference between *project* risks and assumptions and adaptive management risks and assumptions as they relate to an *adaptive management approach to biodiversity and protected areas management*.

An adaptive management approach as it relates to the management of a natural resource system necessitates developing an understanding or model of the system to be management, a specific objective in mind and a clearly articulated management intervention in order to reach that objective and, importantly, a means to monitor the effectiveness and impact of that intervention. In this instance assumptions have been made about the causes of agrobiodiversity loss and the possible remedial actions.

“*In fields such as ecology, economics, wildlife management, politics, business and the social sciences generally, there is a large number of known and potential variables, all subject to continual change, all interacting with each other in ways that may be predictable or non predictable. Precise prediction about outcomes is much more difficult. Applying science per se to the problem makes absolutely no difference to the inability to predict precisely or accurately when you have complex multivariate problems – it is a reality”*

*By way of example, in conservation and sustainable use we do our best to identify and account for the most important variables based on current knowledge. But we have to deal repeatedly with situations in which a variable considered unimportant or trivial one day, assumes monumental proportions the next. On occasion it is discovered that the most important variable was not identified and not measured*[[36]](#footnote-37)”.

There is an unstated assumption that the driving forces that are preventing regeneration of the wild fruit forests have been correctly identified and that protection and rehabilitation will resolve the problem. This begs the question – supposing we have got it wrong?

Lastly, it is important to consider the specific issues related to agrobiodiversity. If this is put in the context of the “*genetic reserve conservation*” and “*on farm conservation*” paradigm then it becomes necessary to take a systemic approach towards the conservation of agricultural biodiversity and not just focus on the genetic reserve approach but to also consider the issue of on-farm ingression of genetic material and a project response to this. The Project Document did not address the issue of land races and the possibility of using such material as a means to reduce the risk of genetic ingression from cultivated varieties grown outside of the protected areas. This now needs to be addressed – assuming that extant land races can be located and identified.

## **4.4 Results**

### 4.5 Outcome 1 – *Ecosystem-based conservation and management of wild crop relatives at two project sites*.

The project has identified the critical areas for establishing the genetic reserves and an inventory has been carried out. Genetic analysis is ongoing to determine the severity of the genetic erosion and determine the best material for rehabilitation of genetic reserves. An inventory of the wild fruit forests has been carried out in both SPAa and is currently being entered into the project’s database. The necessary documentation for establishing Dzhungar National Park has been prepared and approved; a management plan has been produced for Ile-Alatau National Park and a concept paper for the development of tourism in Ile-Alatau National Park. Training has been delivered to the protected areas staff and the Ile-Alatau NP Local Consultation Committee is being established by the project. The designs have been prepared for the development of the *ex situ* nursery along with recommendations for the management of the living collections and replanting material. The METT (Management Effectiveness Tracking Tool)[[37]](#footnote-38) has been completed in both 2007 and 2008 showing positive changes in the overall scores. There has been a number of awareness activities specifically related to the protected areas arranged by the project (e.g. a competition for universities and research institutions). Overall the project has performed well in this outcome and the recommendations given in section 5.0 are intended to strengthen these achievements and reduce any future vulnerability.

### 4.6 Outcome 2 *– Strengthened institutional, technical, and financial framework for ABD conservation*

The project has established a Scientific-Research and Mountain Agrobiodiversity Department was established in IASNNP. The project has clarified to a large extent “the approaches applied to address the issues of Mountain Agrobiodiversity (MABD)”. The project's understanding of the issues surrounding agrobiodiversity conservation has significantly increased the institutional approach to its conservation management moving the approach from one dominated by the utilitarian fruit-breeding agenda to a much broader approach which is more in line with the CBD and GEF OP#13. External training has been given in genetic analysis of crop wild relatives. Material support has been provided to the protected areas (e.g. 2 off-road trucks, fire fighting and prevention equipment, computer equipment, audio-visual equipment, etc.). The financial aspects of conservation management still need to be strengthened.

### 4.7 Outcome 3 – *An effective legislative framework for the conservation and rational use of agro-biodiversity resources*

The project has been very active in this area driving through a raft of laws concerning flora conservation and protected areas *per se.* The Law on Flora is an important development in protecting agrobiodiversity but this still needs to be strengthened by addressing the issue of access and benefit sharing and how this can be used to capture any future use intellectual and financial benefits that might arise. The PIU has reviewed the first draft of the MABD Conservation Strategy for the two project sites.

### 4.8 Outcome 4 – *Alternative livelihoods benefiting local communities in project sites, reducing natural resource use pressure on mountain agro-biodiversity*

Some components of this outcome have not performed as well as were originally anticipated. It has proven difficult to disburse the micro-credit and this might be better addressed by taking a market approach to rural livelihood developments and introducing an additional sustainable use approach to diversify this component of the project’s overall strategy. As part and parcel of an adaptive management approach there is nothing wrong with trying various activities as long as when they are seen not to be developing as well as anticipated they are reviewed, revised or abandoned and the lessons internalised. Some of the outcome 4 indicators will be revised in the draft LFM to reflect this. The project has established relationships with NGOs and has a project to develop tourism enterprises in a number of communities but these have met with mixed results. Bee keeping appears to have been more successful in a number of communities. Seminars have been carried out dealing with these activities in three local communities. The micro-credit has had a slow uptake and the reasons for this need to be assessed, for instance it may be that credit is not a constraint to development and the issue of access to markets is a greater barrier. The project, in collaboration with a local company is in the process of establishing a facility to process honey from bee-keeping and a manual for establishing small enterprises has been produced by the project. A subcontract has been carried out to develop recommendations on land tenure at the project sites and the recommendations have been incorporated into the project work plans.

### 4.9 Outcome 5 – *Awareness and support increased at all levels regarding the values and need to conserve Kazakhstan’s mountain agro-biodiversity*

A visitor center is being developed at Ile-Alatau NP and the designs have been widely applauded and construction is under way. The project’s production of a short film on wild fruit forests with particular emphasis on wild apples has been widely acclaimed. Considerable input has gone into the development of educational and awareness materials for the visitors centers in the protected areas. The project has produced a considerable amount of material promoting MABD and the enthusiasm and energy within the project is “infective” engendering a great deal of support. Every opportunity to promote MABD is utilised and Outcome 5 is progressing well. The agrobiodiversity conservation message now needs to be further developed on the basis of a “popular appeal to the general public” and a specific and more conceptual approach to management institutions and various decision-makers. It is important that the material produced by the project for this outcome stays “on message”, that is it continues to focus on agrobiodiversity conservation.

### 4.4.1 Attainment of objectives

Despite the Project Document being professionally produced and considerable efforts going into the PDF A and B phase of the project planning cycle the project’s intervention strategy that emerged from this was still confusing. This was picked up in the GEF Council’s comments[[38]](#footnote-39), “*the technical and scientific background information provided by the proposal is very comprehensive and the description of the general framework conditions sufficient for a general understanding of the project setting. The project proposal itself, however, is rather convoluted, confusing and difficult to understand. The proposed activities appear not logically conclusive, the specific objectives highly ambitious and the related activities difficult to implement. Although the main thrust of the project appears to focus on two protected areas - one already existing, the other to be established by the project -, it remains unclear of how this will be achieved*”. To which there was a somewhat evasive answer “*Given the general nature of this comment, responses can best be found throughout this table in responses to the other comments*”.

The strategy developed in the project document had become unwieldy and overly complicated and one might consider that by this stage there was considerable fatigue setting in and a genuine desire to see this project started.

Set against this background the project has managed to steer a remarkable course given that the Project Document had a number of weaknesses. It is also worth noting that any such criticisms of the Project Document are relatively easy to make with the benefit of hindsight and it should be borne in mind that GEF Project Documents often require considerable compromises in order to develop the necessary coalitions of co-financing and partnerships and should be set against the historical context within which they were developed.

Furthermore, it should be stated that the complexity of issues surrounding the conservation of agrobiodiversity are not easily resolved within the body of a single project and our collective understanding of agrobiodiversity and its conservation is a rapidly developing discipline. The MTE, therefore, represents a point in the project cycle to take stock of what has worked and what has not, what has been found to be necessary and un-necessary and streamline the project for the final period of implementation.

The project has had a number of successes that are documented in section 4.5 to 4.9 but one of the project’s important achievements has been to “steer” the various interests and understanding surrounding agrobiodiversity. A critical assumption of the GEF OP#13 is that everyone understands “agrobiodiversity”, however, the conservation of agrobiodiversity is a relatively new discipline and involves a multiplicity of value judgments and trade-offs that are neither “black nor white”.

Against this background, the global economic slowdown, will very likely filter through to state budgets. This will impact on the partner’s ability to meet co-financing commitments and likely further stress the protected areas system. Therefore the project needs to prioritize its activities and efforts during the remaining time and focus on managing (rehabilitating, protecting, trialing different management approaches, etc.) the genetic reserves.

Overall the project has made satisfactory progress and the PIU team is enthusiastic, competent and committed. There are a number of areas that need revising in the LFM although these are not substantial revisions and recommendations are made in this MTE to strengthen these areas. But, the projects successes remain vulnerable and a practical “exit strategy” should be developed early on in the second half of the project to increase the probability of the project’s outcomes being sustainable.

### 4.4.2 Prospects of sustainability

It should be noted that Global Environmental Benefits (GEBs) are expected to be delivered in two stages: (i) during project implementation at the level of the target sites; (ii) after project completion and the establishment of the enabling environment and the long-term recovery of the sum of the genetic diversity contained within the genetic reserves. Indeed the project assumes that by sorting the legal and institutional structures, the reversal of current weak management practices will be facilitated[[39]](#footnote-40), therefore enabling the delivery of GEBs. Given the potential lag time[[40]](#footnote-41) between project implementation and the delivery of these GEB-impacts, the project must strive to put in place a monitoring structure that will allow for the tracking of these GEBs, and, to the extent possible, their correlation to the project.

The main impact of the project – the conservation of the genetic reserves – will be dependent upon the maintenance of the protected area. As a result, their sustainability remains vulnerable. Financing of the protected areas system is unpredictable and as the global economic crisis deepens this is likely to negatively impact on these budgets[[41]](#footnote-42). Some possible strategies to reduce these risks have been discussed with the project regarding the management of the *in situ* agrobiodiversity resources and the institutional capacity and memory of the project after the GEF-funding ends. The project will have to develop an exit strategy to maintain the intellectual capital. One possible option would be to consider establishing an agrobiodiversity unit within the FHC. Given the importance of Kazakhstan in terms of its agrobiodiversity resources and the need to link the crop breeding aspects of agrobiodiversity with the management of crop wild relatives (genetic reserves) and the on-farm conservation and maintenance of any land races a dedicated agrobiodiversity unit would play an important role in developing national policies and managing these resources at a national level. Critical to any such unit’s success would be sustainable financing. Therefore it would be important to also consider mechanisms for pricing agrobiodiversty (e.g. charging for access to these resources by research institutions, national and international grants and funds, etc.). This should be considered when developing a National Strategy for CWR Conservation (Item 6 of the Plant Genetic Conservation Technical Assistance ToR). The management of the *in situ* resources can also to an extent, be tackled through outcome 4 by including an option for sustainable use in order to provide the motivation for wise management.

It still remains difficult to judge the sustainability of the project’s impact because the principle issue of restoration and regeneration of the wild fruit forests will require a longer time frame than the 6-year project cycle.

However, the project has developed an institutional understanding of agrobiodiversity particularly as it relates to conservation management and it still has the potential to develop and impart that capacity within the Scientific-Research and Mountain Agrobiodiversity Department that has been formed in Ile Alatau National Park (a second will be formed in Dzhungar Alatau National Park) and if allowed to focus on the critical issues that are to a large extent obscured in the Project Document there is a reasonable chance of success.

But, a number of weaknesses in the Project Document have carried through to this point and there is a need to streamline the project’s activities in the second half of its implementation. If the project is required to meet the multiplicity of extraneous tasks set out in the Project Document then there is a lesser chance of success.

## **4.5 Recommendations**

The MTE recognises the considerable achievements of the PIU and accepts that the MTE has focused, to a large extent, on the areas of the project that have not performed as well as was anticipated in the project’s design. This is a function of the UNDP-GEF evaluation process in order to apply an adaptive management approach to address weaknesses in the project and ensure that the successes of the project are sustainable beyond the life of the UNDP-GEF investment.

### 5.1 Overall Recommendations

1. The project makes a number of adjustments to the LFM to update the projects results framework in light of experience gained and changing conditions. These do not amount to significant changes (i.e. the outcomes and objective remain the same). The adjustments will be discussed in the main report and documented in a DRAFT LFM included as an annex to the main report. The project and partners (as should all UNDP-GEF projects) agree a simple system to log changes to LFMs. Preferably a header that includes date, “version” and possibly the next PIR report to record the changes (e.g. Project Name LFM/Ver. #/date/date recorded in PIR)[[42]](#footnote-43).
2. The PIU should “pause” consider the revised LFM and the original project objective and produce a revised strategy document (not more than 5-6 pages) that summarizes how the various project outcomes will achieve the project’s objective and embed an adaptive management culture in the project’s approach. Guidelines will be provided in an annex to the main report. It should be noted that this draft strategy document is guide and its purpose is to stimulate the analysis of the project’s intervention in order to identify the critical assumptions and risks and thus develop a spread of interventions and therefore reduce the vulnerability of a narrow strategy – for instance what if the replanting doesn’t work? It is an exercise that is designed to strengthen the project’s adaptive management approach by challenging the assumptions behind the intervention.
3. The project strengthens its adaptive management “framework” as a means to cope with complexities of the system and future uncertainties and to update the project’s strategy in light of lessons learned. An adaptive management “framework” will be provided as an annex to the MTE report[[43]](#footnote-44).
4. The key project partners meet and discuss the possible implications of including a third area within the project’s activities. Tarbagatai is an area to the northeast of the Dzhungar and Ile-Alatau National Park. It is proposed as a zapovednik (strict nature reserve) and approximately US$66,000 has been allocated already (from the State budget) to develop a scientific and feasibility study for creating a zapovednik. The wild fruit forests in this area have been found to include stands of trees that have not been subject to genetic ingression from modern cultivated varieties. Any decision should be weighed against the effects of the worsening economic downturn and the impact that this will have upon state budgets and the co-financing commitments as well as the impact of the delays when staring the project on co-financing. It is important that any such additional areas (to the project) do not affect the projects ability to meet the current objective by December 2011 in the Dzhungar and Ile-Alatau National Parks.

1. The project and its partners keep in mind that the objective reflects agrobiodiversity *per se*, As a result of genetic ingression from commercial orchards, wild apples are probably the most vulnerable and this threat is most extensive and urgent. However, it is important to remember that there are a number of other important wild relatives within the genetic reserves.
2. The PIU engages a substantive short-term consultant to assist with developing various aspects of the genetic reserves and plant genetic conservation *per se.* The MTE will provide a draft ToR for this consultancy.
3. The *Agrobio Project* and the UNEP Regional Project meet to discuss ways in which the projects can complement each other particularly in relation to on-farm conservation and genetic reserves and the opportunity to promote sustainable use and Land Races of crop wild relatives in farming systems surrounding the protected areas. The MTE will provide contact details[[44]](#footnote-45) with the UNDP Recovery, Conservation, and Sustainable Use of Georgia’s Agrobiodiversity Project, Project Number UNDP/GEF Project: # 00037324, PIMS Number: 1636 that has been working in this area for some time and has been actively promoting the use of Land Races in organic farming systems. There are some useful synergies between the three (including the UNEP) projects.
4. The PIU develops an “exit strategy” in the next year to demonstrate how the achievements will be embedded institutionally in order to sustain the impact on agrobiodiversity conservation. The “exit strategy” should take account of the plausible impact of the global economic downturn and its likely impact on co-financing and capital investment in the protected areas system and rural development (e.g. ecotourism). One possible option would allow the PIU to focus some of its effort over the next year (2009) on leveraging additional funding (non-GEF funds) from other sources with a view to extending lifetime of the project (see section 5.3). The “exit strategy” should also focus on ways that institutions, particularly the protected areas can capitalize on the future use values of agrobiodiversity as a means to fund their conservation management. Consideration should be given to the possibility of using Technical Assistance to develop this financing mechanism.
5. The FHC, UNDP and the PIU consider carefully whether they need a project representative to be based in Astana. Given the likely financial constraints on the protected areas and the project during the next three years this position can either be reassigned within the project or the position is moved to Almaty and used to “drive” the recommendations outlined in 5.2 below.

### 5.2 Recommendations Outcome 1: *Ecosystem-based conservation and management of wild crop relatives at two project sites*.

* The project makes a detailed ecological analysis of the existing fruit forests contained within the genetic reserves and identifies a number of indicators for conservation status and quality of the wild fruit forests (e.g. age structure, recruitment – vegetative and seedling -, *intra* and *inter-specific* diversity, level of genetic ingression from cultivars, extent/area, etc.). The purpose of this would be to compare different areas and genetic reserves and to develop a long term monitoring programme[[45]](#footnote-46) for wild fruit forest recovery. Much of the existing data could be utilized and a simple survey methodology could be developed with an emphasis on cost effectiveness and replication of data collection (e.g. fixed transects and the use of Distance sampling[[46]](#footnote-47) and quick and simple analysis) for future data collection. An important point in ecological monitoring is establishing robust indicators that are cost-effective.
* The PIU adopts the Threat Reduction Analysis tool as a means to measure the effectiveness of the projects interventions. Once familiar with this methodology the PIU works with the protected area staff to train them in the methodology. The TRA is not “the answer” but does provide a quick and cheap method to monitor the effectiveness of both the project and the long term management interventions.
* The project (in collaboration with the Scientific-Research and Mountain Agrobiodiversity Departments) develop a long term monitoring programme based upon the indicators derived from the ecological analysis and the TRA exercises. The purpose of which is to monitoring programme for the recovery and conservation of the wild fruit forest genetic reserves. By the end of the project this monitoring programme will need to be embedded in the protected areas management plans.
* The substantive TA (overall recommendations point 6) develops guidelines for the ex situ collection and the rehabilitation of genetic reserves.
* The project – using an adaptive management approach – develops a spread of different experimental management approaches to rehabilitating the genetic reserves (e.g. small plot trials with different management prescriptions[[47]](#footnote-48)).

### 5.3 Recommendations Outcome 2: *Strengthened institutional, technical, and financial framework for ABD conservation*

* Key staff of Dzhungar and Ile-Alatau National Parks participate in the development of an adaptive management approach.
* Key staff of Dzhungar and Ile-Alatau National Parks participate in the development of the monitoring programme and conducting the TRA exercise.
* The Scientific-Research and Mountain Agrobiodiversity Department in IASNNP participates in the planning and implementation of the experimental approaches to rehabilitating the genetic reserves.
* The project holds a planning workshop with the Key staff of Dzhungar and Ile-Alatau National Parks to review the effectiveness of the management plan (including the genetic reserves) and the impact of the present economic downturn. This should be a participatory workshop (if necessary a substantive TA should be engaged to facilitate the workshop) and should pose the question *“How do we best conserve the agrobiodiversity resources within the protected area for the next 15 years”.* The question includes 3 aspects – time, place/scale and subject – sufficient to generate a strategy to cope with the economic downturn predicted for the next 3 years.

### 5.4 Recommendations Outcome 3: *An effective legislative framework for the conservation and rational use of agro-biodiversity resources*

* The project works closely with the working group on ABS law and the Altyn Dala Conservation Initiative housed within CAREC to ensure that agrobiodiversity is sufficiently included in the ABS legislation being prepared (for instance would any ABS legislation recognise the need to finance protected areas and specifically genetic reserves).
* Following the input from the substantive TA (5.1 point 6) the PIU prepares a position statement/briefing document for the “Concept of State Forestry Policy 2020” being prepared by the Forestry and hunting Committee of MoA which addresses the issues of the “*genetic reserve conservation*” and “*ex situ conservation*” paradigm. This document should be shared with the UNEP project[[48]](#footnote-49).

### 5.5 Recommendations Outcome 4: *Alternative livelihoods benefiting local communities in project sites, reducing natural resource use pressure on mountain agro-biodiversity*

* The project includes sustainable use of agrobiodiversity in this component as part of its overall intervention strategy, including the use of more cultivars that are directly derived from the wild stock. This will involve developing an on-farm component to the alternative livelihoods approach of outcome 4.
* The project reviews the experience of the GEF-funded Small Grants Programme in particular the *ex-post* report on the *“Conservation of Wild Apple Tree Woods in the Foothills of Zailiyski Alatau (Agrobiodiversity of Alatau)”*. The use of wild apples for vinegar-making offers possibilities for sustainable use and, in the event that Land Races are located, possibilities for on-farm conservation, etc., as well as an opportunity to draw down on a significant fund for development.
* The project investigates the existence of any Land Races of apples and other fruit trees. Should these be found,[[49]](#footnote-50) the project will need to prepare a programme to multiply and distribute the stock amongst farmers[[50]](#footnote-51).
* The project switches its alternative livelihoods approach from trying to develop markets to one which tries to build on existing markets. For instance there is an existing market for honey whereas the market for ecotourism/home stays is one which is as yet poorly developed and unproven. Apple production is another existing market therefore alternative livelihoods should seek to develop ways in which this can be developed and value added at the same time that the issue of genetic ingression into the genetic reserves is addressed[[51]](#footnote-52). The take up of micro-credit has been low and a market-led initiative (i.e. developing existing enterprises associated with fruit growing may encourage risk-averse local communities to take up loans because they are familiar with the products and technologies. It is important to bear in mind that constraints to economic development may not be caused by poor access to credit but rather to poor access to markets.
* The proposed position of micro-credit specialist shortly to be advertised should be dropped. The existing micro-credit institutions offer sufficient assistance to potential borrowers already (e.g. business planning advice, etc.). Given that we are entering a period of considerable financial uncertainty and risk it is important that any enterprises promoted by the project are thoroughly vetted by the lender to ensure that they are – as much as is possible to determine – economically viable.

### 5.6 Recommendations Outcome 5: *Awareness and support increased at all levels regarding the values and need to conserve Kazakhstan’s mountain agro-biodiversity*

* The project continues to promote the importance of agrobiodiversity through mass media and other opportunities, and in addition to this;
* Following the input from the international TA (overall recommendations point 6) the project decides upon the feasibility of developing a communication plan to articulate a more sophisticated message about the conservation management of agrobiodiversity developing the “*genetic reserve conservation*” and “*on farm conservation*” paradigm. This message should be aimed at decision-makers and other institutions.

## **4.6 Lessons Learned**

It is clear to the MTE that the PIU in particular has been, and continues to be, very open to learning from its experience which has given the MTE a high degree of confidence that the project can achieve its objective and contribute significantly to the regional understanding and experience in the conservation of agrobiodiversity, as with so many projects, it is the human capacity and intellect combined with a willingness to challenge assumptions and conventional ideas that makes for a strong project. With this in mind the MTE cautiously considers that there are three connected lessons worthy of note from the project’s experience thus far.

The first lesson relates to a systemic approach to conservation. In order to manage a system it is critical to develop an understanding of that system and what is “driving” it and this can often create a contradiction between *project* and *process*. In effect the processes that have created the current system (e.g. the wild fruit forests) are part of a much greater time scale than any project cycle (normally 3 – 6 years) and therefore when a project intervenes in these processes – it does so with incomplete understanding of the system – this is a truth that has to be acknowledged and is why GEF projects use an adaptive management approach. Despite the best efforts of any project development phase it is inevitable that when a project starts its whole design and the proposed interventions are based on a number of assumptions. However, it is still possible to identify some of the risks and assumptions inherent in any project approach, and to begin to intervene based upon an incomplete understanding or “hypothesis” of how the system is working. Through a process of adaptive or experimental management the project can begin to try and “fix things”. If there is a lesson to be learned then it might be that greater analysis and understanding of the dynamics of these systems is continually needed *during the project* before settling on a single strategy and if time is not available to analyze the system then it might be preferable to use a number of approaches rather a single, narrow approach. In ecological terms this serves to spread the risks particularly when it may be some years before the success or failure of a particular course of action is known. There is an assumption that certain historical events, such as wild apple collection and over-grazing coupled with an ageing or senescing population of wild fruit trees, is the root cause of the lack of regeneration and inevitable degeneration of the forests. From that it is reasonable to assume that replanting with clones from mother trees will re-establish the population and given sufficient protection they will become self-sustaining. A reasonable assumption – *but is still an assumption*. Therefore it becomes critical to continue to build on our understanding of the ecology of the wild fruit forests and to try a spread of different management interventions, selecting those that work best and discarding those that do not live up to our expectations.

The second lesson flows from the description of agrobiodiversity set out in the MTE. That is the “*genetic reserve conservation*” and “*on farm conservation*” paradigm and the issue of land races. For the purposes of agrobiodiversity conservation this highlights the importance of treating protected areas in the context of surrounding land use. People have been an integral component of these ecosystems for millennia. It would be extraordinary to assume that the people who lived in these areas in the past had not selected fruiting trees and transported them to their farms and kitchen gardens. In 1998 Murphree *et al[[52]](#footnote-53)* noted that “*firstly, science and technology are associated with power – the entire power apparatus of government, international and national development agencies, private capital and bureaucracy – which determines in large part what rural communities can or cannot do. The second aspect is a pervasive assumption of the inherent superiority of professional science and technology over the abilities of rural people to understand and manage the resource base on which they depend for their livelihood*.” This statement would have been equally applicable to the disruption caused by the collectivization of agriculture during the Soviet period when many of these farmer-selected varieties would have been replaced by modern cultivated varieties (containing exotic germplasm). However, in many situations the resilience of local people and the strong attachments and cultural associations with their crops maintained the traditional land races. Given that the apple and apricot trees are long lived species it would be not only a tragedy but also extraordinary if all of these land races have been wiped out.

These land races represent not only an important component of agrobiodiversity but they are also important symbols of national cultural heritage worthy of conservation for their heritage values as well as offering conservation and development opportunities for their utilitarian values without threatening the genetic resource reserves.

The third lesson relate to alternative livelihoods and their inclusion in the project strategy. The alternative livelihoods approach has considerable support amongst conservationists because – as its name suggests – it offers “non-consumptive” alternatives to rural livelihoods which may be impacting upon biodiversity or a particular resource of conservation importance. However, it is important to critically analyze the approach and make clear the inevitable assumptions upon which it is based. For instance it is important to determine whether the alternative livelihoods are to be taken up voluntarily (i.e. that people will see the benefit and stop what they are doing) or there a sufficient resources to force people to stop what they are doing and subsequently take up the alternative. Further assumptions are made about the efficiency of the alternative livelihood; for instance is the opportunity equal to or greater than the economic benefit from exploiting the resource to be protected (the opportunity cost)? Is the market sufficient to support all the people involved in exploiting the resource to be protected? What are the risks for local people in moving from one activity (normally related to proven markets) to another activity where markets may be untested (e.g. ecotourism)? Are the markets they are being encouraged to enter robust enough to survive economic cycles (ecotourism is very unpredictable and often links local communities to international markets over which they have absolutely no control)? What is likely to happen to the target resource when people stop using it (conservation can be defined as the sum of all values we place on a particular resource and monetary values are an important component of any equation)?

Therefore the lesson – and it is unfair to single this project out amongst many other conservation projects – should be that more careful analysis should be made before reaching for the “alternative livelihoods approach” and putting it in the project log frame matrix. While such an approach can be successful, and certainly has its place in modern conservation, equal weight should be given to sustainable use as a mechanism for conservation management.

## **Annexes**

### Annex 1 MTE Terms of Reference

Separate annex

### Annex 2 Evaluation Program

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Time | Actions | Responsible of the project |
| 9.01. | 01.00 | Arrival in Almaty  device in the hotel | D.Yesengaziyea |
| 10.30 – 17.00 | Arrival to the office of the project, meeting with staff, work in the office (clarifying action program, familiarity with the documentation) | K.Karibaeva |
| 10.01 |  | Working with documents in the office of the project / hotel |  |
| 11.01 |  | Working with documents in the office of the project / hotel |  |
| 12.01 |  | Work in the office (familiarity with the documentation, presentations of project experts) |  |
| 13.01. | 9.30 – 13.00 | Work in the office | K.Karibaeva, experts |
| 14.00-18.00 | Meeting with the National Coordinator of the SGP / GEF Stanislav Kim,  Meeting with a specialist in the field of SPA Mirhashimov Iskandar Meeting with the Director of the Association of Biodiversity conservation of Kazakhstan Vitaliy Gromov | K.Karibaeva, A.Rodionov |
| 14.01 | 10.00 – 13.00 | Visit of office Ile-Alatau SNNP, conversation with the general manager M.S Aynabekov , Head of research and ADB P.V. Korobko and the staff of SPA.  Meeting with NGO «Green Salvation», the movie | R.Vagapov |
| 15:00-18:00 | Departure Talgar branch Ile-Alatau SNNP, inspection of the forest nursery and the projected area of the genetic bank / live collection of intraspecific diversity of wild apple and apricot. | A.Mishenko |
| 15.01.  16.01 | 8.00 – 17.00  8:00-18:00 | Drive to Almaty SNR. A Conversation with Director Enkebaev M, with ASNR staff. Examination of the Museum of Nature.  Meeting with representatives of NGOs - NGO «Talhiz» (A. Vishnevskaya | K.Karibayeva A.Mishenko |
| Departure Turgensky branch Ile-Alatau SNNP, conversation with director Malgeldiev D, and staff. Examination of the wild fruit forest, identified as the genetic reserve (if there is good weather).  Meeting at Tauturgen with local representatives of the alternative business:  Return to Almaty. |  |
| 17.01 |  | Meeting with the leader of Gulzar NGO B. Kabdoldanova | K.Karibayeva A.Rodionov |
| 18.01. |  | Working with documents in the office of the project / hotel |  |
| 19.01. |  | Meeting with the director of travel company «Zhibek Zholy» by Temirlan Duysengaliev  Meeting with project partners: the direction of micro-credit organizations JSK «KazMicroFinance» | K.Karibayeva,  A.Rodionov |
| 20.01. |  | Work in the office of the project |  |
| 21.01 | 9.30 – 18.00 | Flight to Astana,  Meeting with officers of UNDP S. Neder, N. Panchenko  Meeting with the National Project Director / Vice Chairman of the Committee of Forestry and Hunting I. Koval.,  Flight to Almaty. | experts K.Karibayeva,  D.Almatova |
| 22.01. | 9.30 – 18.00 | Work in the office of the project, debriefing  . | K.Karibayeva,  E.Ahazhanova,  experts |
| 23.01. | 8.30 | Departure to the airport and fly to London | D.Yesengazieva |

### Annex 3 List of people interviewed/met

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Partners list | | | |  |
| № | Name | Position | Contact | Mobile | E-mail |
| 1 | S Kim | National Coordinator, SGP / GEF | +7 (727) 255 26 77 |  | Stanislav.Kim@undp.org |
| 2 | I Mirhashimov | expert in the field of SPA of Central Asia Regional Environmental Center | +7 (727) 229 66 46  (ext 191) |  | iskandar@carec.kz |
| 3 | V Gromov | Director of the Association of Biodiversity Conservation in Kazakhstan | +(727) 2203877 |  | vitaliy.gromov@acbk.kz |
| 4 | M Ainabekov | The General director of Ile-Alatau SNNP | +(727) 2970754 |  |  |
| 5 | P.V. Korobko | Head of research department of Ile-Alatau SNNP | +(727) 2218653 |  |  |
| 6 | Z Enkebayev | Director of the Almaty SNR | +7 (72774) 2 36 56  295 63 86 | +7.701.1113619 |  |
| 7 | A Vishnevskaya | Chief of the environmental education ASNR, NGO «Talhiz», received a grant from the SGP / GEF | +7 (72774) 23656 |  |  |
| 8 | B Kabdoldanova | NGO «Gulstan» - partner | +7 (727) 2691536 | 8 7017980064 | [Gulstan08@mail.ru](mailto:Gulstan08@mail.ru), gulzar08@mail.ru |
| 9 | T Duysengaliev | Director of JSK «JIBEK JOLY» | +7 (727) 250 04 10  +7 (727) 250 04 00 |  | [jjoly@kazmail.asdc.kz](mailto:jjoly@kazmail.asdc.kz) |
| 10 | S Zhusupov | General Director of the KazMicroFinance LLP) | +7 (727) 250 68 77  +7 (727) 250 68 78 | +7.701.2222506 | [shalkar@kclf.kz](mailto:shalkar@kclf.kz) |
| 11 | N Stelina | Nedera Stelina Deputy UNDP Country Office Resident Representative | +7 (7172) 592550 (ext) 2112 |  | steliana.nedera@undp.org |
| 12 | N Panchenko | Coordinator of the Department of Environment and Energy UNDP Country Office | +7 (7172) 592550  (ext) 2136 |  | natalya.panchenko@undp.org |
| 13 | I Koval | national coordinator of project, deputy chairman !KLOH | 8 (7172) 74 32 88  (reception) |  | [i\_koval@minagri.kz](mailto:i_koval@minagri.kz) |
| 14 | I Y Homullo | Officer of division of environmental education ASNR | +7 (72774) 23656 | Irina Yevgenyevna Homullo | Officer of division of environmental education ASNR |
| 15 | A Z Tasyrov | Deputy director Turgensky branch Ile – Alatau SNNP | +7 (72775) 33011 | Aken Zhunusovich Tasyrov | Deputy director Turgensky branch Ile – Alatau SNNP |
| 16 | G A Kulzhabaeva | Director of PA «Gulzar» | +7(727) 269-10-79,  +7 (727) 269-14-48 |  |  |
| 17 | G Akimzhanova | Deputy chairman of the microcredit organization KazMicroFinance | 7(727) 250 68 77 |  |  |
| 18 | S G Kuratov | Head of Environmental Society (NGO) «Green Salvation» | +7(727) 2341760 |  |  |
| 19 | I Timchenko | The author and director of the video «Precious necklace Mountains | +7(727) 271 14 38 д. |  |  |
| 20 | T N Nurmuratov | National Project Coordinator UNEP «« In situ / on farm conservation and use of agro-biodiversity (fruit crops and their wild relatives) in Central Asia »» | +7 (727) 245 35 90 |  |  |

### Annex 4 List of documents reviewed

|  |  |
| --- | --- |
| List of documents reviewed |  |
| Project Document | PIU |
| Project Inception Report | PIU |
| PIR 2007 | PIU |
| PIR 2008 | PIU |
| Annual Progress Report 2007 | PIU |
| Annual Progress Report 2008 | PIU |
| Conservation | PIU |
| Conservation and Restoration of Wild Apple Tree Woods in the Foothills of Zailiyski Alatau (Agrobiodiversity of Alatau, Republic of Kazakhstan – *ex post study* | Centre for Remote Sensing and GIS “TERRA”/GEF SGP |
| Traditional Land Management Knowledge in Central Asia | UNDP |
| Project Film “Precious Mountain Necklace” | PIU |
| PIMS (2006, 2007, 2008) | UNDP |
| Project Audit Report (2007, 2008) | ELTAL |
| 2008 Project Work Plan | PIU |
| Towards a methodology for on-farm conservation of plant genetic resources. | N. Maxted, L. Guarino L. Myer , E.A. Chiwona and R. Crust |
| Landrace Inventories: Needs and Methodologies | Nigel Maxted , Merja Veteläinen and Valeria Negri |
| The Issues of Conservation of the Mountain Vegetational Agrobiodiversity in Kazakhstan (international Workshop Conference) | PIU |
| Other project documents and publications |  |

### Annex 5 Adaptive Management Framework

**“*In situ* Conservation of Kazakhstan’s Mountain Agro-biodiversity” Project Adaptive Management Framework**

##### Why Adaptive Management?

There are numerous tools and guides to adaptive management available on the Internet. No single blueprint will exactly fit the situational needs of the *Agrobio Project* and it is recommended that the key partners familiarise themselves with several of these guides or toolkits. Two helpful and clear guides to adaptive management can be found at:

<http://www.for.gov.bc.ca/hfp/amhome/introgd/toc.htm>

<http://www.effectivempa.noaa.gov/docs/adaptive.pdf>

This document will not attempt to reinvent the wheel; neither will it reiterate what has been better documented elsewhere. Rather, this Adaptive Management Framework will describe the actions and approach that the PIU will need to take in order to steer the project towards its objective. The use of the word ‘steer’ is a useful analogy for a project like the *Agrobio Project*.

If the Project Manager can be compare to the Captain of a ship about to set sail to intercept another ship already at sea, then she/he must plot a course, calculate fuel requirements, wind directions, etc. in order to meet at a predetermined point where she/he believes the other ship to be. She/he will base their course on a series of calculations including the speed of their own vessel and the other boat, the fuel available to them, weather forecasts and as much understanding of the *other* ship’s course and Captain as she/he can obtain. However, her/his chances of meeting the other ship are greatly increased if she/he is prepared to alter their course in response to changes in weather, information received from shore about the location and direction of the other ship, changes in course of the other ship, and so on. If she/he doggedly follows the original planned course they are unlikely to intercept the other ship, even if the new course requires some educated guesses about the whereabouts of the other ship, with so many variables to contend with her/his best course of action is to respond to changes as they arise. The most important point being that she/he eventually intercepts the other ship.

##### Adaptive Management – the limitations

However, it is important to remember that:

* Adaptive management will not replace intelligent analysis; indeed it depends upon very rigorous analysis, challenging assumptions and thinking around a problem to consider a multiplicity of possible outcomes.
* The UNDP-GEF hierarchical structure to project implementation and the National Execution Modality approach that is applied to the Agrobio Project necessitates all the key project partners familiarising themselves with an adaptive management approach toward project implementation. This is necessary to develop the confidence in the PIU to analyse issues, develop possible solutions and act on the best-case scenario. It is important to remember that the project time scale does not allow the luxury of absolute certainty.
* Adaptive Management cannot in itself protect the PIU from external interference or institutional “capture” of the *outcomes* or deliverables – but it can create a transparent operating environment in which the PIU is able to make the decisions in a timely fashion with a clear and concise rational for the reason behind the decision. By requiring the analysis of an issue before an activity, deliverable or outcome is changed it should document the information available, and hence the reasoning, at the time that the decision had to be made.

**Creating the right working environment (developing a “thick skin”)**

If the Agrobio Project is going to pursue an adaptive management approach it is essential that the PIU are working in an atmosphere that encourages discussion and avoids personality clashes[[53]](#footnote-54). Despite the agonising and time consuming process of developing indicators, the first inkling that an intervention is not working or an activity is not achieving, may be nothing more than a “*gut feeling*” that something is wrong and therefore early intervention is important.

Time needs to be set aside for weekly (or fortnightly) and monthly meetings to allow the PIU to discuss these issues in an open and frank atmosphere. Each Team member should briefly report back on their specific outcome area, progress, critical issues and problems that have arisen. These are internal meetings and the PIU works well together. Nobody should be afraid to ask *“so what?”* It is important to think:

* **Operational** – how the individual components of the *Activities* will contribute to a *Deliverable;*
* **Tactical** – how the various *Activities* contribute to the *Outcome, and;*
* **Strategic** – how the 5 *Outcomes* will achieve the *Objective.*

Never lose sight of the *Objective* but be prepared to change the *operational* and *tactical* plan in response to new information or changing circumstances.

**Monitoring**

Monitoring is critical to an adaptive management approach. There are three broad reasons for instituting a monitoring programme[[54]](#footnote-55):

1. Assessing the effectiveness of an intervention;
2. Regulatory (audit function), and;
3. Detecting incipient change (early warning)

In the context of this project monitoring will be largely carried out to assess the effectiveness of the various interventions in achieving the project’s *Objective*, the first reason given above.

The project will need to be monitoring progress at a number of levels. These can be broadly defined as:

* Assessing the effectiveness of the individual *activities* (monitoring performance);
* Assessing the effectiveness of the various activities in achieving the *Outcome* (monitoring the impact), and;
* Assessing the effectiveness of the various *Outcomes* on achieving the *Objective* (monitoring the change).

At the project implementation level the PIU, led by the Project Manager should monitor the project’s progress for:

* Implementation – *did we do what we planned to do (i.e. is the plan still untested because the implementation was poor*)?;
* Effectiveness – *did the plan meet the predicted objectives (i.e. has the plan been tested and found to have flaws)?,* and;
* Validation of the model’s parameters and relationships (i.e. which assumptions, variables and interactions were correct?).

**Analysis**

Having either completed an activity or specific intervention or recognised that something is not going to plan, it is then important to analyse the results, remembering that negative or unexpected results can be as informative as positive, predicted outcomes (be open about the results). Be prepared to consult widely and amongst other disciplines (see below).

A rigorous analysis is critical to adjusting the activities, interventions and outcomes. Having realised that something is not working the PIU must then consider:

* Why is it not working, and;
* What can be changed or done to make it work.

**Avoid “tunnel vision”**

Be prepared to go outside the normal fields of conservation and agrobiodiversitys, after all you wouldn’t ask a micro-credit expert to tell you how to manage an endangered species- so why think that a scientist can develop a micro-credit system?

Consult with people who know about these various fields. Listen and use the information, don’t be afraid to challenge advice, but avoid settling on single solutions for achieving the *Outcomes* – there is no “*silver bullet*”.

**Networking**

Conservation is multi-disciplinary. The PIU should have the confidence to develop different networks across different disciplines. Networks depend upon the individual personalities and it is important that there is openness in allowing the individual members of the PIU to develop their own networks and communicate freely within and between these. The PIU cannot possibly be expected to hold all the technical expertise necessary to implement a complex and multi-disciplinary project.

The PIU should have the freedom to visit other projects or attend forums that deal with issues associated with the project.

**Mistakes**

“*The expectations of different players highlight a fundamental difficulty in the degree to which the outcome of any multivariate problem can be predicted. In the hard sciences like physics and chemistry the majority of variables are known and can often be controlled precisely in an experimental sense. So predictions about outcomes can be reasonably precise. In fields such as ecology, economics, wildlife management, politics, business and the social sciences generally, there is a large number of known and potential variables, all subject to continual change, all interacting with each other in ways that may be predictable or non-predictable. Precise prediction about outcomes is much more difficult. Applying science per se to the problem makes absolutely no difference to the inability to predict precisely or  
accurately when you have complex multivariate problems - it is a reality.  
  
By way of example, in conservation and sustainable use we do our best to identify and account for the most important variables based on current knowledge. But we have to deal repeatedly with situations in which a variable considered unimportant or trivial one day, assumes monumental proportions the next. On occasion it is discovered that the most important variable was not identified and not measured*[[55]](#footnote-56)”.

Decisions are made based upon the best available information. *Mistakes* are only made when information that is available when decisions are made, is ignored. Therefore, it is important that the PIU clearly articulate their arguments or rationale for a particular decision, identify the assumptions and possible risks and are given the space to make the decision and settle on a course of action and continue to monitor its progress.

**Contingency Plans**

The PIU should allow itself the time to develop different scenarios based upon the various assumptions and risks. Asking simple questions about the possible outcomes if the importance of known variables changes (for instance the possible impact of the economic downturn on protected areas management or the development of eco-tourism set against 2-3 years of economic hardship, etc.) and developing the possible scenarios will help the PIU to develop strategies to deal with such events should they arise. This will form a useful exercise in building the projects ability to predict events or at least have a response ready for the those unpredictable events and rapidly put in place a plan to deal with the possible change in variables or the as yet unforeseen importance of an unknown variable.

**Reporting**

Reporting the project’s activities is an important part of the process. During its remaining lifetime the PIU will need to produce approximately 12 Quarterly Reports, 3 Annual Reports/PIR and a Final Report. In addition to this there will be the Final Evaluation Report produced by an external and independent evaluation team.

If an action by the PIU is considered significant enough to require notifying the Steering Committee prior to the next reporting period it may be desirable to establish a system of project memorandum[[56]](#footnote-57) should be developed. This should notify all of the parties that a change has been made to an activity, why it has been made and a time by which any of the parties’ comments should be received before the action is taken or revision implemented.

Project reports should be concise, contain only relevant information and document progress and performance, changes in the project’s approach[[57]](#footnote-58) and a justification for the change.

If an activity, that was to be carried out in a particular quarter, is not completed then this should be noted, a reason for its delay clearly stated, an outline of the actions that the project is taking to make it happen and a new date set for its delivery.

Avoid dwelling on the project’s successes in Quarterly Reports (the Final Report is the place to document these). The report itself is simply to document the issues, it is the *act* of reporting that identifies the issue, provides the analysis and develops a solution (including the assumptions, risks and any indicators). If major changes are made to activities it may be necessary to revisit the Log Frame and “reset” the indicators, add any new assumptions and document any risks[[58]](#footnote-59). The current LFM should be clearly identified preferably a header that includes date, “version” and possibly the next PIR report to record the changes (e.g. Project Name LFM/Ver. #/date/date recorded in PIR)[[59]](#footnote-60).

For major changes in activities, deliverables, outcomes and the strategy an analysis, assumptions, risks and detailed explanation of the project’s response should be produced and included as an annex to the report (this analysis and conclusions form an important part of the project’s experience).

The project log frame (updated if necessary) should be submitted as an annex with every Quarterly Report. This will allow the final evaluation to understand exactly when, and why, any changes were made to the project. Project documents (LFM, AWPs, ARs, QRs, Discussion Papers, etc.) should be sequentially numbered (dated) and a *pdf* version saved. All other drafts of documents should be removed from the system[[60]](#footnote-61).

**Delegation and responsibility**

The Project Manager is ultimately responsible for the project’s performance. However, that responsibility should include the freedom to delegate responsibilities to the various members of the PIU. No one should be in any doubt that things will go wrong[[61]](#footnote-62) and the Project Manager and PIU should not, to a large extent, be judged on whether a particular planned intervention does or does not work *but* on how quickly they recognize that something is not working and how they analyse the issues and respond.

The *Agrobio Project* strategy is a multidisciplinary approach towards the conservation of agrobiodiversity. It is important that there is sufficient financial provision for specialist technical assistance that the PIU can draw down on when the project encounters specific problems that fall outside of their normal experience.

**Means to an end**

The *Activities*, *Deliverables* and *Outcomes* are a means to an end (the *Objective*). They are not ends in themselves; therefore, the project’s strategy relies on all of the *Outcomes* making a positive contribution to the *Objective*. However, if a particular activity is not contributing to the Outcome then it is important to recognise this, ask why, and consider what can be done to ensure that it does.

Project management must be an iterative process. That is, it must constantly keep referring back to the goal and objectives and critically assessing (through a broad spectrum of stakeholders) how the activities are contributing to the outcomes and how those outcomes are leading to the objective. Therefore an adaptive management framework should provide[[62]](#footnote-63):

* **A basic hypothesis of the system** that is being managed, that is, historical and current local livelihood strategies are negatively impacting upon the protected areas agrobiodiversity resources due to weaknesses in the management system (uncontrolled access) and financing of the protected areas, a lack of incentives for sustainable management and a lack of alternatives for local communities. Genetic ingression caused by pollen from cultivated varieties is affecting the wild population by reducing the natural variation within the wild population. Weaknesses in the enabling environment (legal and policy framework) makes agrobodivesity vulnerable and a lack of awareness of the importance of these resources contributes to their low priority. Given these pressure the wild fruit forests and agrobiodiversity *per se* is vulnerable to climate change and other (as yet unidentified) future events;
* **A clear statement of management objectives**, including a coherent strategy of how the sum of the outcomes contribute to achieving the objective, that is, the project will seek to strengthen tenure the capacity of protected areas management through management planning and targeted material inputs, develop appropriate alternative livelihoods for local communities and mechanisms that can return the benefits of sustainable management to those that are closest to the resource and bear those management costs in order to provide the motivation for conservation management. Furthermore, the project will target specific *ex situ* conservation measures to critical agrobiodiversity species. Specific threats such as sources of genetic ingression (cultivated fruit farms) will be removed and hybrid plants within the wild forests will be eliminated. Replanting with wild clones will re-establish the structure of the wild fruit forests. Various laws will be developed to ensure specific protection to genetic reserves and local communities, institutions and policy makers will be made aware of the importance (economic and future use) of Kazakhstan’s agrobiodiversity resources;
* **A monitoring system** to provide information needed to modify the management system or the objectives or to revise the hypothesis if necessary. This must include a reporting system that captures the “mistakes” as well as the successes and regularly reviews the various interventions against the successes and the constraints, that is, the project has developed a number of indicators to determine (a) if the project if performing, and (b) if the project’s interventions are having a positive effect on agrobiodiversity resources and will also monitor progress indirectly by annually assessing the level of identified threats to the genetic reserves through the TRA. Furthermore, the project will develop a long-term monitoring programme to track the recovery of the wild fruit forests beyond the life of the project, and;
* **The means to modify the system** to bring it in line with the objective, that is, the log frame, regular management meetings and targeted external TA and in the future, the protected areas management plans.

### Annex 6 Agrobiodiversity Project strategy outline

**“*In situ* Conservation of Kazakhstan’s Mountain Agro-biodiversity” Project**

**Draft Project Strategy Framework**

**February 2009**

**Introduction**

Following the MTR carried out in January 2009 the Agrobio Project broadly accepts the findings of the Report. That is; there is a need to strengthen the project’s adaptive management approach towards implementation, recognising that in ecology, economics, biodiversity management, politics, business and the social sciences generally, there is a large number of known and potential variables, all subject to continual change, all interacting with each other in ways that may be predictable or non-predictable.

Precise prediction about outcomes at this level is fraught with difficulties and uncertainties. Therefore, it is better to have a basic assumption that you have always "got it wrong". Despite these uncertainties *conservation* presents managers with the unenviable task of having to plan interventions based upon untested assumptions that give rise to significant risks. However, the wild fruit forests of south-eastern Kazakhstan are areas of international importance containing a number of wild species important to modern agriculture and with significant future use benefits and when a system appears to be failing it are often better to take the approach that doing *something* is better than doing *nothing*. This is the basis for the GEF intervention.

**“*In situ* Conservation of Kazakhstan’s Mountain Agro-biodiversity” Project Strategy**

The Project’s strategy can therefore be characterised as follows:

It is reasonable to state that the agrobiodiversity resources of south-eastern Kazakhstan are globally significant and there are reasonable grounds to assume that they are subject to significant threats that are currently not fully quantified. Therefore, the Project’s Objective, based upon the GEF Strategic Objectives, remains unchanged, ***“the conservation of key habitats and ecosystems of globally significant mountain agro-biodiversity in Kazakhstan”.***

This will be achieved through the organisation of the Project’s interventions to achieve the following 5 Outcomes that represent situational changes in management, the economic environment and, the policy and institutional environment and awareness as it relates to the agrobiodiversity resources in Kazakhstan.

**Therefore:**

**Outcome 1**

Outcome 1 – will conserve the MAP species within the ecosystem (*in situ*) through the development of sustainable management practices, including the protection of genetic reserves and individual plants or communities wherever it is not possible to utilise the resources sustainably. Where necessary, *ex situ* conservation measures will be taken when the threat to a species is considered severe enough to warrant such measures. The main thrust of these interventions will to develop genetic reserves within the zonation plan of the protected areas in order to conserve wild fruit forests subject to natural evolutionary processes. Rehabilitation of specific areas will take place as well as the removal of hybrid material and specific sources of genetic ingression as a short term management measure. This outcome can be characterised as a *management approach*.

**Outcome 2**

Outcome 2 – will develop the management capacities of the protected areas agencies in order to better conserve the wild fruit forests and to manage the protected areas sustainably. The main thrust of this intervention will be the development of 2 protected areas management plans and targeted material assistance to improve management in areas such as fire fighting capability, etc. will promote the economic values of MAPs to provide the motivation for conservation management. This outcome will also focus on making the protected areas more financially independent and sustainable as well as promoting greater participation by local communities. This outcome can be characterised as a *capacity development approach* to support outcome 1.

**Outcome 3**

Outcome 3 – will capture the experience from the project and develop an appropriate local and national enabling environment by incorporating lessons learned and facilitating the development of a national policy and legislative framework that protects the genetic agrobiodiversity resources as well as those that are dependent upon the resource for their livelihoods, their indigenous knowledge and intellectual property. This Outcome can be characterised as an *enabling* or *regulatory approach*.

### 

**Outcome 4**

Outcome 4 – will develop a number of interventions designed to deflect pressure from the *in situ* wild fruit forest resources by promoting alternative livelihoods and resource replacement. It will also seek to develop collaborative management approaches to issues such as community grazing and where appropriate the sustainable use of agrobiodiversity resources through collection and the development of on-farm cultivation of appropriate land races. This Outcome can be characterised as a *sustainable use,* *resource replacement* *and* *alternative livelihoods approach*.

**Outcome 5**

Outcome 5 – will develop a comprehensive education and awareness programme to increase local and national support and understanding of the importance of agrobiodiversity resources and through the sustainable use approach in outcome 4, seek to mainstream agrobiodiversity conservation in the local livelihood, rural development and national policy-making decision framework. This Outcome can be characterised as an *education, awareness and mainstreaming approach.*

**In summary these Outcomes can be described as:**

***Protecting the wild agrobiodiversity resources*** through the establishment of genetic reserves and better management practices within the protected areas. Where utilising the resources is considered sustainable management may allow those closest to the resource to benefit in return for absorbing the costs of sustainable management. An additional back up to *in situ* conservation or extremely vulnerable or endangered species will be created through *ex situ* measures as a short term means to conserve them (e.g. living collections).

***Improving the institutional and financial capacity for sustainable conservation management*** by developing the protected areas capacity to plan, manage and finance management of the resources sustainably.

***Creating a supporting legal and policy framework*** for sustainable protection and utilisation of agrobiodiversity in Kazakhstan and develop the access to well-regulated markets for these resources.

***Replacing critically endangered resources*** with alternatives and providing alternatives to livelihood activities that impact negatively upon wild agrobiodiversity species and developing sustainable use systems particularly in relation to threats that are not directly resulting from the agricultural values of the plants (e.g. sustainable grazing, village fuel wood lots, etc.).

***Raising awareness of the importance of agrobiodiversity*** in order to increase its significance in the decision-making process of the public, institutions and government agencies in order to mainstream it as a development issue.

**Assumptions, Risks and Adaptive Management**

“In fields such as ecology, economics, wildlife management, politics, business and the social sciences generally, there is a large number of known and potential variables, all subject to continual change, all interacting with each other in ways that may be predictable or non predictable. Precise prediction about outcomes is much more difficult. Applying science *per se* to the problem makes absolutely no difference to the inability to predict precisely or accurately when you have complex multivariate problems - it is a reality.  
  
By way of example, in conservation and sustainable use we do our best to identify and account for the most important variables based on current knowledge. But we have to deal repeatedly with situations in which a variable considered unimportant or trivial one day, assumes monumental proportions the next. On occasion it is discovered that the most important variable was not identified and not measured [[63]](#footnote-64)”. Therefore, the project’s strategy is based upon an adaptive management approach accepting the military adage that “*no battle plan survives the first encounter with the enemy”.*

On this basis, any strategy and resulting plan of implementation designed to deal with so many unpredictable variables is unlikely to reach a defined point in time, *the project’s Objective*, unless it is able to adapt to changes in situations and to learn from experience and increased understanding of how the enormous number of variables interact with each other.

Therefore, it is prudent to openly identify the assumptions from the very start and to clearly articulate the risks that these pose to the project’s progress. By so doing, the project can develop the various scenarios, recognise when things are “going wrong” and readjust their intervention accordingly.

**Project Objective Assumptions**

To explore critically the assumptions upon which the project’s intervention is based, for instance…… The following have been identified as assumptions on which the project design has been based and have been articulated in the project’s LFM. They are presented here as an linked assumptions and the possible risks that such an assumptions pose to the projects strategy with a brief description of how the project intends to mitigate such a risk….

The PIU (and any partners who wish to participate) should take some time to work through these issues…..e.g.

**Wild fruit forests are threatened**

The time scale over which the ecosystem is operating on is much greater than that which we have data for. Cyclical changes in climate, human economic activity and the life cycles of many of these plants are poorly understood, as is their response to grazing (and harvesting) pressure. For instance, a basic hypothesis of the original Project Document was that grazing and collection pressures were threatening the forests, however, this was not borne out by reports that there had been recent declines in the number of livestock and there was little if any collection taking place. However, it is reasonable to assume that such pressures in the past have negatively impacted upon these resources and damaged their ability to regenerate by removing younger and more productive age classes.

**Climate change is not the driving force behind agrobiodiversity loss**

The project’s interventions are based upon the assumption that the major impacts are local anthropogenic activities (collection, grazing, fuel wood collection, impact of tourism, etc.) rather than as a result of larger scale changes in climate due to global warming.

**Sources of cultivated genetic ingression can be controlled and such genetic material within the wild forests can be removed**

There is an assumption that it is possible to remove this material from the wild population. It would be important to investigate alternative approaches – for instance – a more cost effective management approach might be to remove external sources of cultivated pollen but to allow a process of natural selection to remove this material from the existing population (an obvious risk to this would be a temporary vulnerability of the wild forests to environmental change).

**Threats can be identified and adequately quantified**

Without a clear understanding of the nature and magnitude of the possible threats to the wild fruit forests it is both hard to develop suitable interventions to reduce the threat, and to fully understand the impact of these interventions on reducing the threat. For instance how much replanting is necessary to ensure sufficient genetic diversity and what is the likely impact of replacing numerous identical wild clones?

**Retrofitted Tracking Tool is an accurate description of project baseline**

It is possible to estimate the historic level of anthropogenic threats to develop a plausible baseline for the TRA tool.

**Risks**

There are a number of risks associated with these assumptions. Without a clearer understanding of the threats to wild fruit forests there is considerable risk that the project’s interventions may prove ineffective. Furthermore, without fully analysing the causal factors of the visible threats, attempts to reduce overexploitation or to rehabilitate the wild fruit forests may simply address the symptoms and not the root causes of any unsustainable use or causal factors. It is important to remember – when dealing with te environment we are often most vulnerable when we feel most certain!

e.g.….

If global climate change is the force behind driving apparently increasing loss of these forests due to a reduction in their available habitat, arguably the project may have little impact on wild fruit forests.

Without a fuller understanding and analysis of the threats, recovery rates, differences between sites, etc. of the fruit forests there is a real danger that the monitoring reflects cyclical patterns in local or regional climate and not the effectiveness of the project’s interventions.

**Mitigation**

While the linkages between local human activities are not proven, it is reasonable to assume that the rapid pace of social and economic change may be leading to a decline in the diversity of these forests that have significant global conservation value and have considerable economic future use values. Furthermore, global climate change may also increase the impact of human activities upon these forests. Therefore, reducing the impact of local human induced pressure may help some species to cope with larger climatic changes.

Therefore, the project’s management approach towards the *in situ* conservation of agrobiodiversity is considered to be the best approach because it is designed to put in place a robust system of management that will address the issues of over use, genetic ingression, aging population structure, etc. within the framework of the protected areas management plan and a genetic reserve.

While there are reasonable grounds to assume that there are anthropogenic pressures driving the loss of diversity in the fruit forests, the project will continue to assess and quantify the levels of threat and analyse the root causes of these threats. The objective of this is to test the original hypothesis and develop a better understanding of the driving forces behind unsustainable use and the loss wild fruit forests.

**Outcome 1Assumptions (2, 3, 4 & 5)**

List the assumptions – not just those in the LFM but also challenge the proposed intervention by asking “*what if?”*

### 

**Risks**

List the risks associated with each assumption including the potential hazards of ignoring those risks

**Mitigation**

Describe what reasonable mitigation actions the project might take – for instance – trialling a variety of interventions on an experimental basis, etc….

### Annex 7 Revised LFM

| **Project Objective and Outcomes** | **Description of Indicator** | **Baseline Level** | **Target Level[[64]](#footnote-65)** | **Level at 30 June 2008** | **Source of Verification** | **Assumptions** |
| --- | --- | --- | --- | --- | --- | --- |
| **Objective**: Stakeholders conserve agro-biodiversity in two priority sites within Kazakhstan’s Tien Shan Mountains by developing and applying new methods and tools for conservation, including partnerships among conservation and land-use agencies, local governments, SPAs, local communities and the private sector. | Expansion of the territory of Specially Protected Areas for conservation of mountain agrobiodiversity   * + Dzhungar Alatau   + Zailiskiy Alatau | - 0 ha  - 236,000 ha | - 356,000 ha  - 271,000 ha | - 0 ha  - 236,000 ha | Formal legal decrees on establishment/expansion of SPA within the project site | Government priorities for biodiversity protection including MABD will remain.  Socio-economic situation will not significantly worsen  Climate change will not occur or have significant physical and socio-economic impacts  Frequent changes of key GoK personnel will not impact project implementation  The Government/ FFC will support the establishment/expansion of SPA's within the project sites as well as the works addressing the problem of cutting of endangered species/ plantation works |
| Sustainability of wild fruit forests is maintained due to elimination/ localization of the centers of genetic erosion (orchards, domesticated apple plantations etc.) | 0 | Environmental cutting/ reconstruction cutting in the centers of genetic erosion:  By year 4 – up to 10 ha;  By year 6 – up to 20 ha | 0 | Official reports, project monitoring data |
| Outcome 1: Ecosystem-based conservation and management of wild crop relatives at two project sites | Number of hectares of globally important apple and apricot forests under fully managed legal protection (within SPA)   * + Dzhungar Alatau   + Zailiskiy Aletau | - 0 ha  - 2,824 ha | - 3,725 ha  - 7,225 ha | - 0 ha  - 2,824 ha | Official documents and forest field surveys | The Government will support the proposals to strengthen MABD protection  Consensus and cooperation between the various key stakeholders can be adequately achieved |
| Local Consultative Committees enabling the participation of local communities in management of SPAs   * + Zailiskiy Alatau   + Dzhungar Alatau | * + 0   + 0 | * + 1 end of yr 3   + 1 end of yr 6 | - 0  - 0 | Official documents and operation plans of LCC |
| Outcome 2: Strengthened institutional, technical, and financial framework for ABD conservation | Institutional responsibility and coordination on agro-biodiversity | Responsibility for MABD is not assigned | ABD depts within SPAs by year 3 (Ile Alatau), year 5 (Dzhungar, upon establishment of SPA) | Responsibility for MABD is not assigned | Official documents on administrative reorganizations | Government/ FHC is still committed to the establishment of agrobiodiversity departments.  Provided that FHC will provide and adequate input for the purposes of capacity improvement  GoK will not change the priorities and its financial abilities will be enhanced |
| Improved capacity for managing mountain agro-biodiversity within SPAs (METT scores)   * + Ile Aletau National Park   + Almaty State Nature Reserve | - 46  - 51 | - 67  - 70 | - 46  - 51 | Mid-Term and Final METT score data sheets as per the WWF-WB Alliance procedures |
| Annual GoK funding levels for protected areas that encompass wild fruit forests:   * Ile-Alatau National Park & Almaty State Reserve * Dzhungar National Park | US$1,953,333  US$316,938 (Budgets of two existing Forest Reserves) | 20% increase\*  5 times increase (budget of new Dzhungar National Park) | US$2,691,000  US$371,565 | Official government budget allocations |
| Outcome 3: An effective legislative framework for the conservation and rational use of agro-biodiversity resources | Legislation, by-laws and regulations for conservation and sustainable management of agrobiodiversity   * + Law on Protected Areas (covering all PAs in two project sites)   + Regulations for control of tourism development and visitor activities   + By-laws for land leases within SPAs   + By-laws to set aside land for establishment of SPAs | - Draft law at Parliament  - Existing regulations are either not in place or have become old  - Existing by-laws have become old  - Existing by-laws have become old | - Law by the end of yr 1  - Regulations by end of yr 2  - By-law by end of yr 1  - By-law by end of yr 1 | * + Law adopted in 2006   + Regulations adopted in 2006 and 2007   + By-law adopted in 2006   + By-law adopted in 2006 | Official Mass media of Kazakhstan  Published text of the law and by-laws | The approval process for critical legal instruments will occur in a timely manner |
| Outcome 4: Alternative livelihoods benefiting local communities in project sites, reducing natural resource use pressure on mountain agro-biodiversity | # of households participating in sustainable alternative livelihood activities at two project sites:  Ecotourism   * Zailiskiy Alatau * Dzhungar Alatau   Improved Beekeeping (existing producers)   * Dzhungar Alatau * Zailiskiy Alatau   Crafts Production   * Zailiskiy Alatau * Dzhungar Alatau | 4  2  0  0  0  0  0  0  0  3  0  2 | 10  11  12  3  8  3  7  2  2  5  2  4 | 0  0  0  0  0  0  0  0  0  0  0  0 | Field interviews with participants | These activities will be supported on the local level  Certain stakeholders do not overly dominate and monopolize private sector development  Local communities are willing and will use loan funds |
| # of farms adopting sustainable grazing practices (rotation of grazing lands; production of fodder)   * Zailiskiy Alatau * Dzhungar Alatau | 0  0 | 6  4 | 0  0 | Field interviews with participants |
| # of stakeholders participating in alternative livelihoods activities at two project sites receiving micro-credit funds | 0 | 7 by project mid-term; 9 more by project end | 0 | Official reports of the loan organization |
| Outcome 5: Awareness and support at all levels regarding the values and need to conserve Kazakhstan’s mountain agro-biodiversity increased | % of inhabitants within protected areas and neighboring buffer zones meeting minimum awareness levels about cultural, economic and ecological values of agrobiodiversity resources  - Zailiskiy Alatau  - Dzhungar Alatau | 30  40 | 70  75 | 30  40 | Specialized surveys measuring the awareness on agrobiodiversity | Baseline reporting figures from the relevant SPA authorities might be understated (figures will be updated with fieldwork in year 1)  Local authorities will support the awareness campaign |
| No. of schools with curriculums on specially protected areas and mountain agro-biodiversity | 0 | 8 | 0 | Interviews | Implementation of such curriculums is supported by education bodies |
| No. of NGOs focused on mountain agrobiodiversity conservation at the project sites (established with support and guidance of the project) | 2 | 4 | 2 | Official data | These activities will be supported by NGO's and local communities |

### Annex 8 Terms of Reference for Plant Genetic Conservation Technical Assistance

**Overview**

The Project – “*In situ* Conservation of Kazakhstan’s Mountain Agro-biodiversity” Project that executed by the Ministry of Agriculture, Forestry and Hunting Committee and implemented by the Project Implementation Unit and has been implemented since December 2005.

The Project Document lists the project’s *Goal[[65]](#footnote-66)* as being:

*“The conservation of key habitats and ecosystems of globally significant mountain agro-biodiversity in Kazakhstan”*

The Project Document lists the project’s *Objective[[66]](#footnote-67)* as being:

“Stakeholders conserve agro-biodiversity in two priority sites within Kazakhstan’s Tien Shan Mountains by developing and applying new methods and tools for conservation, including partnerships among conservation and land-use agencies, SPAs, local governments, local communities and the private sector”.

The project’s *Outcomes* are listed as:

*Outcome 1: Ecosystem-based conservation and management of wild crop relatives at two project sites*

Outcome 2: Strengthened institutional, technical, and financial framework for ABD conservation

*Outcome 3: An effective legislative framework for the conservation and rational use of agro-biodiversity resources*

*Outcome 4: Alternative livelihoods benefiting local communities in project sites, reducing natural resource use pressure on mountain agro-biodiversity*

*Outcome 5: Awareness and support increased at all levels regarding the values and need to conserve Kazakhstan’s mountain agro-biodiversity*

The *project strategy* as described in the Project Document and to a large extent in the LFM was summarised thus:

* *In situ conservation management of agrobiodiversity at the ecosystem level within protected area and ex situ measures to support ;*
* *Strengthening the enabling environment by building management and financial capacity;*
* *Strengthening the policy and legal framework;*
* *Offsetting local community opportunity costs by providing alternative livelihoods, and;*
* *Increasing institutional and public awareness of agrobiodiversity and conservation.*

Following the Mid Term Evaluation (MTE) carried out in January 2009, the MTE concluded that the project was being satisfactorily implemented and progress was very good. However, as part of the GEF adaptive management approach to project implementation, the evaluators identified a number of areas that need strengthening in the project’s approach. The MTE surmised that the conservation of agricultural biodiversity requires two distinct approaches. These can be characterised as “*genetic reserve conservation*” and “*on farm conservation*”. The two activities can be described thus:

“*Genetic Reserve Conservation*: the location, management and monitoring of genetic diversity in natural wild populations within defined areas designated for active, long term conservation.”

“*On-farm Conservation*: the sustainable management of genetic diversity of locally developed crop varieties (land races), with associated wild and weedy species or forms, by farmers within traditional agricultural, horticultural or agro-silvicultural systems.”

The MTE considered that the project needs to address the issue of land races (historically derived directly from the wild population and subject to local environmental and biological selection pressures as well as farmer selection for phenotypes with subsistence or nutritional qualities but without the ingression of any modern cultivar or hybrid genetic material). These land races are thought to exist in the area since before the introduction of collectivized farming and modern fruit breeding. Should they still exist[[67]](#footnote-68) then these land races offer considerable opportunities for the reduction of genetic ingression or “pollution” from dachas and commercial orchards in and around the protected areas that contain the genetic reserves. Furthermore, they constitute a significant component of the sum of agrobiodiversity and are important sources of germplasm in their own right with important future use values.

Furthermore, the MTE recommended that the ecological monitoring and *in situ* genetic conservation management of the genetic reserves should be strengthened with particular regards to and adaptive management approach to the rehabilitation management of these important wild fruit forests including the establishment of *ex situ* nurseries and a living collection.

Therefore the MTE recommended that the project engage a substantive Technical Assistance in the field of plant genetic resources conservation to compliment and strengthen the project and its partner’s capacity to carry out this component of the overall strategy.

Technical Assistance

The TA Consultant will be engaged through the project to carry out the following tasks:

1. Working with the project and its partners refine the existing agrobiodiversity definition for a more robust working definition of agrobiodiversity - *crop wild relative, land race and local variety* - and agree how that might be applied within the project.
2. Develop a methodology and protocol for locating and identifying land races and local (farmer selected) varieties.
3. Carry out an analysis of the current plant genetic resources conservation capabilities of project staff and partner organizations. Based upon strengths and weaknesses identified design a field training module to enhance the existing capabilities where needs are identified.
4. Together with the Project Team agree an appropriate methodology which includes an adaptive/experimental management approach for the conservation of agrobiodiversity (specifically Crop Wild Relatives) in Ile-Alatau National Park and Almaty State Reserve. Working closely with PIU and stakeholders, (e.g. protected areas managers, MoA) in a participatory workshop discuss the practical implementation of the methodology for the Ile-Alatau National Park and Almaty State Reserve.
5. Review with the Project Team and other stakeholders how best the methodology might be generalized and implemented in the broader context in other regions of Kazakhstan to conserve national agro-biodiversity.
6. Working closely with the project develop a National Strategy for CWR Conservation, including creation of a national CWR inventory, prioritizing CWR diversity of active conservation, ecogeographic surveys, threat assessment, gap and “hotspot analysis”, writing of CWR conservation action plans, and culminating in the identification of CWR *in situ* and *ex situ* target actions. Through a targeted workshop and field training develop the capacity of the PIU and Scientific-Research and Mountain Agrobiodiversity Department in CWR conservation to identify and designate “genetic reserves”.
7. Assist the project to identify and develop an appropriate network and link with other regional and international projects and resource organizations involved in agrobiodiversity conservation.

**Programme of work**

The field mission will take place in July 2008:

* Working in Kazakhstan including travel 10 days
* Preparation, documentation and reporting from home base 4 days

Emphasis will be placed on participatory field training.

The programme of work should be defined by the Consultant in collaboration with the PIU and involve field visits and 2 workshops with the key project partners on developing a methodology for the conservation of CWR in Ile-Alatau National Park and Almaty State Reserve and developing the capacity of the Scientific-Research and Mountain Agrobiodiversity Department in CWR conservation to identify and designate “genetic reserves”.

**Outline of the mission**

|  |  |  |
| --- | --- | --- |
| **Activities** | **Participants** | **Duration (days)** |
| Preparation and final documentation |  | 2,0 |
| Planning in PIU, meeting UNEP Project | 3-4 | 1,0 |
| Field visit | 3-4 | 4,0 |
| Workshops | 10-15 | 3,0 |
| Debriefing |  | 1,0 |
| Travel to/from Almaty |  | 1,0 |

**Deliverables**

* Project definition of agrobiodiversity
* Field training module to enhance the exisitng capabilities where needs are identified
* Methodology for the conservation of CWR in Ile-Alatau National Park and Almaty State Reserve including recommendations for the its implementation in the broader context in other regions of Kazakhstan to conserve national agro-biodiversity
* Outline and recommendations for a National Strategy for CWR Conservation, including creation of a national CWR inventory, prioritising CWR diversity of active conservation, ecogeographic surveys, threat assessment, gap and “hotspot analysis”, writing of CWR conservation action plans, and cluminating in the identification of CWR *in situ* and *ex situ* target actions.

**Key Documents for review**

* The project document and revised LFM
* Project Document
* The Issues of Conservation of the Mountain Vegetational Agrobiodiversity in Kazakhstan
* MTE report
* Other project documents as necessary

### Annex 9 Project Ratings Table

Highly Satisfactory (HS), Satisfactory (S), Marginally Satisfactory (MS), and Unsatisfactory (U)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PROJECT COMPONENT OR OBJECTIVE** | **Rating scale** | | | | **RATING** |
|  | **U** | **MS** | **S** | **HS** |  |
| **Project Formulation** |  |  |  |  | **MS** |
| **Conceptualization/Design (as set out in the ProDoc)** |  |  |  |  | **MS** |
| **Stakeholder participation** |  |  |  |  | **S** |
| **Project Implementation** |  |  |  |  | **S** |
| **Implementation Approach** |  |  |  |  | **S** |
| The use of the logical framework |  |  |  |  | **S** |
| Adaptive management |  |  |  |  | **MS** |
| Use/establishment of information technologies |  |  |  |  | **S** |
| Operational relationships between the institutions involved |  |  |  |  | **S** |
| Technical capacities |  |  |  |  | **S** |
| **Monitoring and evaluation** |  |  |  |  | **S** |
| **Stakeholder participation** |  |  |  |  | **S** |
| Production and dissemination of information |  |  |  |  | **HS** |
| Local resource users and NGOs participation |  |  |  |  | **S** |
| Establishment of partnerships |  |  |  |  | **S** |
| Involvement and support of governmental institutions |  |  |  |  | **S** |
| **Project Results** |  |  |  |  | **S** |
| **Attainment of Outcomes/ Achievement of objective** |  |  |  |  | **S** |
| Achievement of objective |  |  |  |  | **S** |
| Outcome 1 |  |  |  |  | **S** |
| Outcome 2 |  |  |  |  | **S** |
| Outcome 3 |  |  |  |  | **S** |
| Outcome 4 |  |  |  |  | **S** |
| Outcome 5 |  |  |  |  | **S** |
| **OVERALL PROJECT ACHIEVEMENT & IMPACT** |  |  |  |  | **S** |

1. PIU January 2009 [↑](#footnote-ref-2)
2. PIR (June 2008) [↑](#footnote-ref-3)
3. Towards a methodology for on-farm conservation of plant genetic resources. N. Maxted, L. Guarino L. Myer , E.A. Chiwona and R. Crust: *Undated*. [↑](#footnote-ref-4)
4. The Project Coordinator comments “I think that this lesson as such is very generic and cannot be linked to the project under consideration, unless the MTE would like to clearly mention which adaptation approaches have been applied by the project that are unique and could be used by other projects”. The MTE response is that an adaptive management approach should consider all the lessons arising from implementation as part of an adaptive management approach. In this instance the lesson is used to justify the recommendation for strengthening the projects formal adaptive management approach and implementing a spread of experimental management interventions such as comparing natural regeneration against active rehabilitation through replanting, etc. [↑](#footnote-ref-5)
5. Justified by evidence or reasonable argument. [↑](#footnote-ref-6)
6. ГРП, Pers. Com. [↑](#footnote-ref-7)
7. It is worth noting that during this time there were 4 different Ministers during this period. [↑](#footnote-ref-8)
8. Project Document [↑](#footnote-ref-9)
9. PIU January 2009 [↑](#footnote-ref-10)
10. PIR (June 2008) [↑](#footnote-ref-11)
11. Since reorganized as KazMicroFinance LLP [↑](#footnote-ref-12)
12. Listed as the *Project Development Objective* in the Project Document. [↑](#footnote-ref-13)
13. Listed as the *Project Immediate Objective* in the Project Document [↑](#footnote-ref-14)
14. Towards a methodology for on-farm conservation of plant genetic resources. N. Maxted, L. Guarino L. Myer , E.A. Chiwona and R. Crust: *Undated*. [↑](#footnote-ref-15)
15. However, the MTE recognises that the project has adapted activities and approaches but this needs to be formalised within the project’s strategy and results framework in order to demonstrate adaptive management. [↑](#footnote-ref-16)
16. GEF Operational Program #13 On Conservation And Sustainable Use Of Biological Diversity Important To Agriculture [↑](#footnote-ref-17)
17. For instance the identification of insect pests and disease suggests to the MTE that the project design was (probably unwittingly) including elements of existing institutional functions into the projects activities. [↑](#footnote-ref-18)
18. For instance the issue of over-exploitation of the apple fruits is no longer relevant with the closure of the fruit pulp factories and there appears to be considerable confusion regarding the current impact of grazing on these resources as well as the role of disease as a natural selective pressure, etc. Therefore the Threat Reduction Analysis (TRA) tool) should be used to develop an understanding of these threats as a means to prioritising project resources and activities. [↑](#footnote-ref-19)
19. In the interests of fairness it should be stressed that the important role of Land Races is a relatively recent issue and their role in conservation and the management of genetic reserves is not widely understood. [↑](#footnote-ref-20)
20. “*Due to mentality of indigenous people they led nomadic life style in this area, had no permanent settlements and the distant grazing stock-farming was their basic livelihood. Fruit-growing started at the end of 18th century with the appearance of Russian settlers who developed fortresses. As a rule, the settlers brought apple seeding materials from Russia and Ukraine and developed orchards. In the meantime “Aport” and other endemic apple varieties have appeared in the area in question. There are no accurate data of using the endemic wild apple for the cultivation purposes. The on-farm conservation project has no similar data either. To collect such information, a large-scale study needs to be launched using GEF funds, which, most probably, will be of no considerable input*.).” Comment by Project on First Draft of MTE Report. [↑](#footnote-ref-21)
21. The MTE agrees with the threat analysis of the threat of genetic ingression of material from cultivars. [↑](#footnote-ref-22)
22. It should be clearly stated that the MTE spent very little time in the project area, however, during interviews with a variety of partner organisations and stakeholders there was no evidence to support the original over-exploitation threat analysis. [↑](#footnote-ref-23)
23. “During the site visits of MTE team (in winter time, January 2009) no grazed cattle or haymaking activities were observed with their adverse impact. The conclusion is based on the comments of the National Park personnel and local inhabitants stating that the stock was small and the grazing activities took practically no place within the area. But such individual evidences may not be the ultimate judgment of the entire wild fruit forest territory. The systematic grazing of a stock of ten heads of cattle may become fatal for the sites of most valuable apple forests. In addition, the statements provided by the local inhabitants and NP staff members may not always be realistic since the first are afraid of admitting the unauthorized grazing activities within SPA, and the second may tend to hide the shortcomings of their work. We may certainly mention that the number of cattle stock has reduced in recent years thus reducing the grazing harm. But we observe a reverse process of increasing stock while the free grazing lands are insufficient near the park. So, the threat is coming back. The other threats still exist and we can mention a certain cycle of their seriousness in a certain period of time”. Comment by Project on First Draft of MTE Report. [↑](#footnote-ref-24)
24. Response to comments from GEF Council, Switzerland Comment 13. [↑](#footnote-ref-25)
25. The MTE accepts that historically many of the threats identified may have been relevant but feels it is still important to challenge the current relevance of these threats to agrobiodiveristy. [↑](#footnote-ref-26)
26. The Project commented on the first draft of the MTE; “*the project document focus the project activities on the in situ conservation within SPA. The area status excludes the point of sustainable use since such activities are restricted within the area. For the same reason, the project strategy was modified based on the Inception Report”.* The MTE recognises the logic behind this statement but it is important to point out that if rehabilitation and protection are the only approaches and the SPA is unable to adequately protect the genetic reserves then collaborative approaches towards sustainable use or grazing management should also be considered as an option. [↑](#footnote-ref-27)
27. The Project commented on the first draft of the MTE; “*the issue is put in different terms: The project document and PIU propose to develop the Law on Flora as well as some clarifications to the Forestry Code and the Law on SPA. These are quite justified since the issue of conservation requires clear-cut legislative frameworks that are insufficient for the time being”.* While the MTE acknowledges that the Law on Flora is a significant step in protecting agrobiodiversity it is important to point out that this is very different from and ABS Law. [↑](#footnote-ref-28)
28. The Project commented on the first draft of the MTE; “*The project document is just on the point to consider this threat of inadequate management. The project is taking the steps to enhance the capacities of the relevant services. And the project implementation agency on behalf of the Government guaranties the growth of budget allocations to SPA. Said risks are within the sight of the project but the project apparently should not ignore such commitments or use it them in its strategy”*. However, the MTE points out that given the current global financial crisis protected areas financing is likely to be under severe stress in the foreseeable future and the impact of the economic slump may force local communities to rely more heavily upon resources within the SPAs, thus stressing the system further. [↑](#footnote-ref-29)
29. The MTE notes that these issues are correctly documented in the PIR, etc. [↑](#footnote-ref-30)
30. Events beyond the control of the project and its partners. [↑](#footnote-ref-31)
31. A *Long-term Development Strategy to 2030 on the Increase of Forest Areas*; *Scientific Provision of Production, Processing and Storage of Agricultural Production within the regions of Kazakhstan for 2001–2005; and Concept Paper of Development and Allocation of Specially Protected Natural Territories of Kazakhstan to 2030.* [↑](#footnote-ref-32)
32. Source FHC Astana pers. Com. [↑](#footnote-ref-33)
33. Page 3 Project document [↑](#footnote-ref-34)
34. UNDP commented on the First Draft of the MTE Report; “*This position was opened in Astana for coordination the work with UNDP and FHC. At the present time in accordance with progress of this aim present position is closed, and expert’s duties in legislation and protected territory were redistributed between project experts, which situated in Almaty”.* [↑](#footnote-ref-35)
35. Project Document p24 [↑](#footnote-ref-36)
36. Dr. Grahame Webb, Director, Wildlife Management International [↑](#footnote-ref-37)
37. While this does not reflect the views of UNDP, GEF or the PIU the MTE (based on experience from other projects) recognises that the METT has limitations as an effective tool for monitoring the performance of protected areas. [↑](#footnote-ref-38)
38. GEF Council’s comments Switzerland – Comment 1 [↑](#footnote-ref-39)
39. Some GEBs such as the establishment of  living collections might be measured much sooner. [↑](#footnote-ref-40)
40. It will take at least 7 years for the cloned plants to begin fruiting and therefore demonstrate that recombination of wild genetic material is taking place and even longer to demonstrate that this is facilitating recruitment to the population. [↑](#footnote-ref-41)
41. The Project disagrees with this view and states “*This statement is hard to agree with as far as the Government of Kazakhstan promises at least to stabilize (without any implications of reducing) and even, possibly, to increase such funding in future*)”. Project response to First Draft MTE Report. [↑](#footnote-ref-42)
42. For practical reasons it is also important that previous copies of the LFM are removed from the system and stored in a separate file to avoid confusion. [↑](#footnote-ref-43)
43. A training presentation on adaptive management was given to the PIU during the MTE [↑](#footnote-ref-44)
44. Mariam Shotadze [mariam.shotadze@undp.org](mailto:mariam.shotadze@undp.org) [↑](#footnote-ref-45)
45. “Development of long-term research and monitoring programme specifically for ABD in the project sites which will generate information of direct application for management” Project Document p52 [↑](#footnote-ref-46)
46. http://www.ruwpa.st-and.ac.uk/distance/ [↑](#footnote-ref-47)
47. The MTE is concerned about risk and vulnerability – relying on replanting is a reasonable approach but it is important to develop a number of approaches to the rehabitation. A useful resource can be found at [↑](#footnote-ref-48)
48. The Project response to the MTE First Draft Report states “*The governmental forestry policy is focused on the in-situ and ex-situ conservation of genetic resources only; the on-farm conservation will deal with the issue of commercial afforestation”.* However, the MTE still considers that it is important for policy to make the linkages (a continuum) between genetic reserves and on-farm conservation. This will be particularly important should any Land Races be found and offers important opportunities to mainstream biodiversity and particularly agrobiodiversity at a cross-sectoral level. [↑](#footnote-ref-49)
49. The MTE recognises that these may have become “extinct” during the Soviet period – but it is essential to determine whether they still exist. An example of this can be found in Georgia where a UNDP-GEF project found a 160 year-old pear tree that pre-dated the Soviet period of collectivisation – it was growing quite close to a major road! [↑](#footnote-ref-50)
50. The Project response to the MTE First Draft Report states “a*ccording to the preliminary data there exist only few such Land Races (one or two) and these will hardly be demanded by the farmers given the available productive cultivated varieties. Is there any sense to spend the limited project budget for such investigation, all the more so, as the effect may fall short of the cost?*). The MTE response is placed in the context of the CBD and agrobiodiversity conservation *per se* and therefore remains unequivocally unchanged. If such Land races still exists (including apricots and other fruit crops) they need to be located and conserved. For example, in Georgia the far-sighted intervention of the Botanical Institute in Tbilisi rescued seeds from Land Races 50 years ago. Many of these crops survived only within the seed bank (as seeds) for half a century. However, a UNDP-GEF project has since been able to re-establish the crops bringing significant economic and ecological benefits to farmers. This is the basis of agrobiodiversity conservation. [↑](#footnote-ref-51)
51. The MTE considers that the projects efforts in developing some of the alternative livelihoods has not been wasted, indeed it has provided valuable lessons and now it should re-focus on those that were successful and abandon those that have not performed as well as anticipated. [↑](#footnote-ref-52)
52. Socio-economic Considerations in the Community Initiation and Implementation of the M2C2 Programme. Marshall W Murphree, Phanuel Mugabe and Michael J Murphree; Background Paper For The Gwaai River Workshop, August 4-7 1998. [↑](#footnote-ref-53)
53. The MTE feels that the Agrobio Project has a very open and “healthy” internal atmosphere. [↑](#footnote-ref-54)
54. Adapted from Monitoring for Conservation and Ecology. *Ed.* Goldsmith F. B. Chapman & Hall, 1992 [↑](#footnote-ref-55)
55. Dr. Grahame Webb, Director, Wildlife Management International [↑](#footnote-ref-56)
56. An informal note or instrument embodying something the parties desire to have in written evidence. [↑](#footnote-ref-57)
57. The MTE has found the project’s reporting to be very good and this is mentioned here to demonstrate how reporting feeds back into the project’s adaptive management approach. [↑](#footnote-ref-58)
58. The GEF adaptive management approach allows for this as long as all parties agree and sufficient justification is provided for any changes and the LFM is updated. [↑](#footnote-ref-59)
59. For practical reasons it is also important that previous copies of the LFM are removed from the system and stored in a separate file to avoid confusion. [↑](#footnote-ref-60)
60. All projects will have numerous drafts of LFMs and other project documents “hanging around” on computers. It is not unknown for a project to be working from an earlier *draft* LFM only to have this pointed out at a MTR or FE. In the *Agrobio Project* this was not the case but there were at least 4 variations of LFM (Project Document, Inception Report, MTE ToR and 2008 PIR) although the PIU was clear which LFM it is currently using. [↑](#footnote-ref-61)
61. Military strategists work on the basis that “wars are won by the side that makes the least mistakes” and “a battle plan never survives the first contact with the enemy”. [↑](#footnote-ref-62)
62. Adapted from Sustainable Use Principles, The Southern African Sustainable Use Group, IUCN Species Survival Commission. [↑](#footnote-ref-63)
63. Dr. Grahame Webb, Director, Wildlife Management International [↑](#footnote-ref-64)
64. All target levels are for end of project unless otherwise noted [↑](#footnote-ref-65)
65. Listed as the *Project Development Objective* in the Project Document. [↑](#footnote-ref-66)
66. Listed as the *Project Immediate Objective* in the Project Document [↑](#footnote-ref-67)
67. Anecdotal evidence suggests that land races of apricots were collected in this area in the 1980s. [↑](#footnote-ref-68)