

**Mainstreaming biodiversity into agriculture and land management in the Lao
People's Democratic Republic**

UNDP/FAO/GEF/Government of Lao PDR

GEF Agency Project ID 2903

Project Preparation Phase

Mid-term Report

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Vientiane, 13 December 2009**

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Scope of activities since last reporting

The project team members continued with their desk studies, reported in with the results of further consultations and met with each other to refine the proposed project scope and the expected results. Silinthone returned from Vietnam and started work again on 23 November. Dietmar worked intermittently, as scheduled, during this period, and took part in all the important meetings. Ludovic, Khek, and Phengkhouane worked for the full period. Ludovic in particular worked closely with me on elaborating the project scope and indicators. I advised team members on proposed changes in their Terms of Reference in order to get contributions more focused on the project document itself. I reviewed team members' inception reports and other interim submissions and provided feedback and guidance where necessary.

I continued reading relevant literature, and discussed the project with government officials (mainly from Ministry of Agriculture, including the National Agriculture and Forestry Research Institute), independent experts in biodiversity and agriculture, representatives from local and international NGOs, bilateral and multilateral donors, and agriculture and rural development projects, meeting some of them more than once. Other members of the team also met a wide range of "stakeholders" in Vientiane and Luang Prabang.

Sameer Karki, Regional Technical Adviser at the UNDP GEF Regional Coordination Office in Bangkok visited the team for four days (24-27 November) and helped to focus the team on GEF priorities. During his visit a second meeting was held between FAO, UNDP, Ministry of Agriculture Department of Planning, and the project team, at the Ministry. Jointly chaired by Deputy Director of Planning Kham Palakhone and myself, the meeting reviewed a revised project framework and indicators and made some suggestions for changes.

I attended the first Steering Committee Meeting of The Agrobiodiversity Initiative (TABI) on 1 December at the Lao Plaza Hotel, and had the opportunity to discuss the GEF project with several members of the TABI Steering Committee, which is expected to be asked to oversee the GEF project too. Concerns were raised by the Steering Committee that TABI's annual work plan was too ambitious and included too many activities.

Office, administrative support and liaison

TABI continued to be excellent hosts at their office, and we were joined by Dunu, our three days per week administrative assistant from UNDP, on 23 November. She has been working on arrangements for meetings, transport and visa extensions, and communications with the Department of Planning.

We held a brief meeting with Soubanh Chounraxa, the second of our two liaison officers with the Department of Planning, at the Ministry of Agriculture on 1 December.

The third fortnightly meeting at Department of Planning, Ministry of Agriculture and Forestry was scheduled for 11 December, but the Department in effect canceled it. However, a meeting with the Director of the Department of Planning has been arranged for 14 December.

Terms of reference (TOR)

As I have not heard to the contrary I am assuming that the proposed changes to my TOR in my Inception Report are accepted. There is still some confusion on the team about whether they should follow original TOR or modified ones, and I think we are producing too many reports.

Milestone Extension Request

I have been concerned for some time that the two weeks allowed between submission of the project document by the consultant team and the deadline for submission by UNDP and FAO to GEF were insufficient to allow for review by the agencies. I wrote on 19th November to suggest that a Milestone Extension Request be submitted, and this was agreed by FAO and UNDP. I commented on drafts of the Request, and the Request (for a five months extension) will be submitted by FAO, Rome shortly.

Project design

Since last reporting the team has refined its vision of the project in operation. Agriculture in Laos presents as a complex and dynamic picture, with conditions changing all the time in response to land concessions, markets, social pressures, rural depopulation through resettlement or voluntary moves to the capital or beyond. We have been probing for neat ways to contribute to the mainstreaming of biodiversity in the context of the many initiatives completed and on-going in "agrobiodiversity", wildlife conservation, agronomy, marketing, poverty alleviation, and land management. All are agreed that the GEF project's mainstreaming function is to provide solid technical support based on analysis of available information to reform policy, build capacity to implement it, and involve the general public, private sector agri-business, including foreign direct investment, and the donor funded projects. Focus is vital, and the inclusion of land management stretches the project's ability to make a difference. The main emphasis should be on mainstreaming into agriculture.

Sameer Karki recommended that we reduce the number of outcomes to two or three, that public involvement should not have an outcome on its own, and that we specify in more detail the work to be done at field level.

In response we now have a tighter design that subsumes the "policy and market incentives" and the "public involvement" outcomes into the other two outcomes. Marketing is an important aspect to be addressed in policy and its implementation but does not warrant a stand-alone outcome in the current circumstances in Laos. Public involvement is extremely important too, but there was some overlap with the policy development outcome with regard to consultation, and it has been included as part of everyday decision making and action. There is now increased detail in the project rationale and outputs on how the project will work together with our main partners, TABI, in their existing field sites and in the establishment of new field sites, and also on the identification of a number of case studies that are required for policy formulation, and its implementation. There are a number of important concerns regarding biodiversity conservation in agriculture that can best be addressed such individual case studies including research and actions. These include hunting of (a limited number of) globally threatened and near threatened species;

wild rice distribution and conservation status; rodent control; alien invasive species management; and human-elephant conflicts.

The strategic partnership with TABI has been discussed further. TABI approaches “agro-biodiversity” conservation through its main focus on poverty alleviation, whereas the GEF project’s primary aim is to ensure that biodiversity is included in decision making and action, and at all levels, including initiatives to improve food security. This provides good potential for complementary work. One of the important roles of the GEF project will be to ensure that biodiversity is assessed well at the TABI sites, and that these assessments are used to help to shape TABI’s poverty alleviation initiatives so that overall they contribute to biodiversity conservation and individually at least do no (unacceptable) harm to biodiversity. There are clear benefits to conserving and using biodiversity sustainably, and sometimes the barrier is merely the fact that people are not acting together.

Mainstreaming biodiversity in agriculture requires attention to a vast range of conditions prevalent in different places and focusing on areas where specific conflicts arise. TABI will establish demonstration sites in the south of the country to supplement those in the north, and the GEF project will work together with TABI in selection and assessment of the sites using (after modification to improve biodiversity considerations) the Agro-Ecosystems Analysis methodology already developed by TABI. This will help to focus effort on areas of specific relevance to global and national priorities in conservation of biodiversity in agricultural landscapes.

The team have examined in depth the whole question of incentives to keep local varieties in cultivation and it is riddled with snags against the backdrop of land allocation, concessions, rice breeding, agricultural systems development and the fickleness of markets. It is important that we do not prejudge the requirements for intervention, and it is really important that the people themselves are included in the development of the solutions to the problems of uncertainty and reduced availability of land for cultivation.

Conservation of varieties *in situ* has to be considered alongside the *ex situ* initiatives, which have been extraordinarily successful in Laos, and have demonstrated enormous commitment on behalf of IRRI and Lao government staff. Given the strong driving forces of economic development in Laos, conservation of varieties of rice and other crop plants cannot be done *in-situ* alone. The government itself is promoting the use of improved varieties and working hard and well in plant breeding to develop varieties with a range of characters - specific aromas and stem characters, or adaptations to higher or lower temperatures or rainfall.

Project Document

The draft project document is due on 15 January. A running draft is being maintained, and a copy of this as it stands on 13 December is attached (Annex 1). Note that many sections are incomplete and some sections consist of outline notes to be expanded. There are also sections that are too verbose and that need to be condensed, and where contributions from more than one team member have been put together there is sometimes repetition. Written contributions from team members have not all been incorporated yet, and some are still in preparation. The draft is presented at this early stage of development so that

reviewers have the opportunity to make comments and suggestions. It is important that comments and suggestions be submitted by 2 January at the latest if they are to be incorporated into the next draft.

Plan for the remaining period of preparation

I will be away from 15 December to 2 January inclusive and will resume work, with the remaining members of the team for the period 3 to 26 January. Ludo will have completed his assignment and submitted his report by 15 December. Dietmar intends to complete his assignment by the end of the year and submit his technical report on policy and institutions before I return. Khek, Silinthone and Phengkhouane are engaged straight through until late January, with various numbers of working days during that period. I would like them to help while I am away (and after my return) with document preparation, including data gathering and verification in particular, and leading on to checking nomenclature, preparing tables, maps, various annexes, and lists of references, people consulted and partner organizations. We will also take on the preparation of the CEO endorsement after I return. We aim to submit drafts of both by 15th January. During this two weeks UNDP and FAO should initiate the co-financing agreements and I will be available to assist with that. Nadine Azzu from FAO Rome will come to Laos for some of January and will be available to help with preparation of the documents.

On 18th or 19th January I propose a stakeholder workshop to discuss the draft project document and ask for comments and recommendations. We will then have one week to revise the document and submit to UNDP and FAO by 26 January. I will submit a list of those who should be invited, before I leave, and I will ask our administrative officer to initiate the arrangements immediately with UNDP, MAF and FAO.

Attachment

Annex 1. Outline Project Document

Acronyms

FAO	Food and Agriculture of the United Nations
GEF	Global Environment Facility
MAF	Ministry of Agriculture and Forestry
PDR	Peoples Democratic Republic
RCO	Regional Coordination Office
TABI	The Agrobiodiversity Initiative
TOR	Terms of Reference
UNDP	United Nations Development Programme

United Nations Development Programme
Country: Lao People's Democratic Republic
PROJECT DOCUMENT

Project Title: Mainstreaming biodiversity in Lao PDR's agricultural and land management policies, plans and programmes

UNDAF Outcome: UNDAF Outcome 1: By 2011, the livelihoods of poor, vulnerable and food insecure populations are enhanced through sustainable development (within the MDG framework)

UNDP Strategic Plan Environment and Sustainable Development Primary Outcome: ???

UNDP Strategic Plan Secondary Outcome: ???

Expected CP Outcome(s): Outcome 1: Improved and equitable access to land, markets and social and economic services, environmentally sustainable utilization of natural resources

Expected CPAP Output(s) Output 1.2: Improved and diversified incomes of rural households, with a focus on increased market accessibility, through implementation of human development and infrastructure initiatives Output 1.3: Enhanced knowledge and management capacity of ecosystems, biodiversity, natural resources and environment, and population dynamics

Executing Entity/Implementing Partner: Ministry of Agriculture and Forestry

Implementing Entity/Responsible Partners:

Lao PDR encompasses the species rich Mekong Valley and the Annamite mountain range, and has an extensive protected areas network. Almost 80% of the 6.5 million people work mainly in agriculture, and many rural people rely on wild species, particularly aquatic species, for a large part of their diet. Farming intensification, including the conversion of land for large scale cash crops, is reducing crop, livestock and wild species diversity and destroying important human food supplies. Lao PDR is a globally important centre of diversity of rice, with over 3,000 local varieties reported, and five species of wild rice. Many local varieties of rice and other crops are being replaced by improved varieties with higher yields but greater needs for agrochemicals. There are globally significant wild species at risk from water pollution, habitat conversion and over-harvesting linked to agriculture. The project will work strategically with government, agricultural businesses, farmers and other partners, including donors active in rural development and natural resources management to make biodiversity conservation a key consideration in the routine day to day business of government, commercial companies and the general public, and that this increased attention contributes to biodiversity conservation and to sustained food security and rural incomes.

Programme Period: _____ Atlas Award ID: _____ Project ID: _____ PIMS #: _____ Start date: 15 October 2010 End Date: 14 October 2016 Management Arrangements: _____ PAC Meeting Date: _____	Total resources required: _____ Total allocated resources: _____ • Regular: _____ • Other: _____ o GEF: 2.265,000 o Government: _____ o In-kind: _____ o Other: _____ In-kind contributions: _____
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Agreed by Government: _____ Day/Month/Year

Agreed by (Executing Entity/Implementing Partner): _____ Day/Month/Year

Agreed by UNDP: _____ Day/Month/Year

Agreed by FAO: _____ Day/Month/Year

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Acronyms and Abbreviations tbc

ADB	Asian Development Bank
APR	Annual Project Review
BCCI	Biological Corridors Conservation Initiative
BD	Biodiversity
CBD	Convention on Biological Diversity
DoP	Department of Planning (MAF)
FAO	Food and Agriculture Organization of the United Nations
IUCN	World Conservation Union
MAF	Ministry of Agriculture and Forestry
NTFP	Non-timber forest product
PA	Protected Area
PIR	Project Implementation Review
RCU	Regional Coordination Unit
REDD	Reduced Emissions from Deforestation and Degradation
SO	Strategic Objective
SP	Strategic Priority
TPR	Tripartite Review
UNCCD	United Nations Convention on the Control of Desertification
UNDP CO	UNDP Country Office
WCS	Wildlife Conservation Society
WWF	Worldwide Fund for Nature

1. SITUATION ANALYSIS

Context

Lao Peoples Democratic Republic (Lao PDR) lies in the centre of the Indochinese peninsula surrounded by Thailand, Vietnam, China, Myanmar and Cambodia (Map 1). The country has an area of 236,800 km², three quarters of which is rugged, mountainous terrain with narrow, steep-sided river valleys. The highest mountains (up to 2,816 m amsl) are in the northern uplands, and the Annamites extend south from there along the Vietnamese border. The only extensive flat areas lie along the east bank of the Mekong River at around xxx m amsl, to the west of the Annamites.

The overall population density is low¹ at 24 people per km², compared with neighbouring Vietnam (232), Thailand (127) and Cambodia (78), but population density on agricultural land is close to the regional mean, at xxx per km². The population density increased from 15 per km² in 1985 to 19 per km² in 1995 to 24 per km² in 2005 and this, even if it is low overall, has put pressure on the environment and is causing food shortages for some farmers. About 78% of the population work mainly in agriculture and 67% of all households farm on land that they operate themselves as if they were the owner. XXX% of the population live in rural areas in small villages with up to a few hundred inhabitants. An estimated 620,000 households depend on agriculture for their livelihood; of these, about 75 percent still engage in subsistence farming.

The national literacy rate (2005) for those over 15 years of age was 72.7%, but there was wide variation, from less than 20% to more than 80%². Over five percent of villages lay more than three hours travel time from a primary school. Around 20% of all 10-14 year olds were not attending school, but in some rural areas this figure rose to over 80%³. Health facilities are generally undeveloped, and maternal (405 deaths per 100,000 live births) and first year infant mortality (70 deaths per 1000 live births) are particularly high⁴. There is an alarmingly high incidence of chronic malnutrition, linked in part to low fat intake, according to WFP⁵ (2006). There is a high reliance on wild food sources in the rural areas, and poor natural resource management is limiting harvests of fish and other aquatic animals.

Overall, 34% of people live below the poverty line⁶, with huge variations over the country. The highest proportions of people below the poverty line (in many places 80% or more) occur in the mountainous areas, particularly in the south-east, but the absolute numbers of poor people are highest in the big cities and the lowlands. Lao PDR is one of four Least Developed Countries⁷, with a UN Human Development Index of xxx in xxxx. Twenty seven percent of the population estimated to be living on less than \$US1 per day and seventy four percent on less than \$US2 per day. Poverty is reducing overall but there are pockets where there is increasing hardship.

Economic development policies: The Government of Laos' pursuit of a wide-ranging economic reform agenda is leading to rapid growth as there is a transition to a market economy and more and more engagement in the prosperous regional economy. While agriculture's share of GDP has fallen slightly over the last decade agriculture itself is still growing at a moderate rate (five per cent). Expanding exports have played a significant role in Laos' growth, growing at around 11 per cent per year and increasing their share of GDP from nine per cent in 1990 to twenty four per cent in 2005.

¹ Total human population in 2005 estimated at xxx (National Statistics Office)

² xxx

³ xxx

⁴ xxx

⁵ Comprehensive Food Security and Vulnerability Analysis (CFSVA 2007)

⁶ The "overall poverty line" calculated by the Department of Statistics uses the criteria of the amount of money required to purchase 2,100 Kcals of food per day plus a non-food allowance.

⁷

The economy is now significantly more open with exports and imports as a percentage of GDP increasing from around thirty per cent in 1990 to sixty five per cent in 2005.

The agriculture and natural resources (ANR) sector accounts for about 30 percent of the gross domestic product and 71 percent of employment. The sector comprises diverse subsectors ranging from crop production to livestock, fisheries, forestry, water resources, and non-timber forest products (NTFPs).

Lao PDR is split administratively into sixteen provinces and one municipality which in turn are divided into a total of 140 districts, under which there are about 10,300 villages. Villages have been assigned to *kumban* or village clusters for purposes of land-use planning but *kumbans* are not part of the legally established administrative structure.

In 2002 41,5% of the country was under some kind of forest cover (Map 2), and 42% was classified as "unstocked" forest, meaning areas with a low crown density (either naturally or from heavy utilization). There is significantly more dense forest in the south (56.5%) than in the central region (46.1%) and north (27.9%). The rest was reported to be cultivated swidden fields or "hai" (2.2%), permanently farmed land (5.0%), grassland (2.4%) and urban areas (0.6%), but these figures are disputed and it is likely that the area of permanent agriculture is higher than indicated.

Farming systems – traditional, including upland and lowland rice, rainfed and paddy, and other crops. Current use of agrochemicals in each farming system
Details please: [Silinthone](#)

Lao people depend on forest land for large supplies of firewood: in 2005 80% of households used wood as the main source of energy for cooking; 15% used charcoal, and only 1% used gas or electricity. This, together with the use of forest products for food, fibre and building materials puts substantial pressure on the forests. However, although much of Lao PDR's extensive forest cover has been logged and is now heavily modified, over 80% of the country is not under active management. The largest and least disturbed blocks of forest are in the south of the country. Dependence on forest land – eg firewood, and non-timber forest products. Enormous range of non-timber forest products

Dependence on aquatic ecosystems for food supplies – importance in nutrition. The importance of aquatic species, in rural Laotian diets has been underestimated in the past. Almost 200 species are consumed and, where they are present, they could supply most of the vitamins A and B, calcium, iron, sulphur, essential fatty acids and amino acids that are needed by the villagers. However, recent data indicate first, that populations are under pressure from pollution, and from overharvesting, and second that sometimes particular food habits and choices rather than low absolute food availability contribute to malnutrition.

Traditional farming practices in the uplands are based on swidden cultivation with a ten to 15 year rotation cycle, and supplementation of farmed produce with a wide variety of wild plants, animals and fungi. Rice and a wide range of vegetables and fruits supply the farmers with food for subsistence, and some income, and cash crops include maize, Jobs tears, coffee, cassava and some peanuts – and most recently paper mulberry, tea and sugar-cane. Government policies and actions have shortened the swidden cycle by allocating land to reserved forest status and plantations of rubber, oil palm, *Jatropha*, *Eucalyptus* and other crops have been established many of them by foreign direct investment from Vietnam, Thailand and China. Shortening of the swidden cycle is leading to reduced crop yields and greater use by farmers of non-timber forest products. In the

lowlands there has been increasing intensification of crop production: introduction of (a few) improved rice varieties which require higher use of agrochemicals is leading to larger plots and loss of local rice varieties.

Farming systems on the Mekong plain are becoming increasingly intensified, with replacement of local varieties with improved varieties and increased use of fertilizers and pesticides, and larger plots with less diversity in the landscape.

Contract farming, land concessions, hydro-power and mining impacts on agriculture
Impacts on wetlands – drainage, and aquaculture and irrigation ponds replacing natural wetlands

Biodiversity and its global significance

Lao PDR lies at the centre of the Indomalayan biogeographical zone, in the Indochinese sub-zone⁸ and as a result of its relatively wide ranges of latitude and altitude, its rich water resources and tropical climate is home to a huge number of species of plants, animals, fungi and other organisms. Extraordinarily high diversity in the region, and species still being discovered. There are 4,800 species of plants in 232 families listed in the first Checklist of the Vascular Plants of Lao PDR, published in March 2007⁹ yet, only a small fraction of the total number of species has been recorded. There were three new species, a further 16 possible new species, and over 150 species recorded for the first time in Lao PDR among 1,500 specimens collected between 2004 and 2007. New species are discovered not just in forests but in the agricultural landscape in fallow patches xxx check. xxx

Among the animal species too there have been some startling discoveries. The tropical forests of the Annamite Mountains east of the Mekong river along the border between Laos and Vietnam are home to species that have persisted through the last ice age, and they were until recently some of the least explored places on earth, made even more inaccessible by political instability and war. As the country has opened up and as biologists have begun to explore more a host of fascinating plants and animals have “emerged”, most known to the local people but not to science. Many of the animals were discovered in food markets or nailed to the walls of village houses. They include 15 mammals, 89 frogs, 279 fish, 46 lizards, 22 snakes, four birds, four turtles and two salamanders. Among the 15 mammals discovered was the Laotian Rock Rat (*Laonastes aenigmamus*) which was thought to have been extinct for some 11 million years, the Annamite Striped Rabbit (*Nesolagus timminsi*) whose closest relative is a critically endangered species in Sumatra, two species of deer - the Large-antlered Muntjac (*Muntiacus vuquangensis*) and the Dark Annamite Muntjac (*M. truongsonensis*), and the extraordinary Bare-faced Bulbul (*Pycnonotus hualon*), a (probably) endemic songbird with a pink, almost featherless head, that even the local residents had not noticed. The Saola (*Pseudoryx nghetinhensis*), an oryx-like antelope discovered in 1992 in Vietnam also occurs in Laos. There are many other newly discovered species including a remarkable new salamander in Laos, several frogs, and steadily increasing numbers of new species of fish, some of them endemic to specific stretches of river (Kottelat, 2009).

Numbers of recorded wild species of major groups – mammals, birds, reptiles, fish, various invertebrates, amphibians, plants, fungi, microorganisms etc with limitations on data explained
Only 4,800 species of plants in 232 families listed in the first (2007) Checklist of the Vascular Plants of Lao PDR, which includes species discovered within the last few years and not known from anywhere else.

⁸ Mackinnon

⁹ <http://www.rbge.org.uk/science/tropical-diversity/inventory-research-in-threatened-areas/laos>

Only a small fraction of the total number of plant species has been recorded – likely still to be important finds outside forests and protected areas

Numbers of crop and livestock species, and numbers of known varieties or estimates of numbers of varieties of rice, maize, various vegetables and fruit, various livestock

Near the centre of origin of cultivated rice.

More accessions of rice in than any other country of same size – remains to be seen how many actual genotypes

People's use of wild species for everyday subsistence remarkable. This also part of the global significance of biodiversity in Laos - the complex interweaving of culture and biodiversity both wild and selected through agricultural lifestyles.

Recognized global significance of the biodiversity:

WWF Global 200 (4 sites),

Important Bird Areas (27),

Endemic Bird Areas (3, including two secondary) Annamese Lowlands, Fan Si Pan and N Laos (SA), Southern Laos (SA) Expand, Khek,

Proposed (early stage) Natural World Heritage Site (Laos plans to submit the Hin Namnor National Protected Area (NPA) in Khammuan province as a candidate for UNESCO World Heritage listing, according to the Ministry of Information and Culture¹⁰),

Ramsar Sites – not yet a signatory to Ramsar but potential sites identified (Khek)

WWF Greater Mekong ecoregions

IUCN Redlisted species: Globally Threatened and Globally Near Threatened (21 threatened birds, 40 mammals, 21 plants, etc

Summary of numbers of species in each group. Lists in Annexes

List the few that occur in agricultural land in text Khek

Laos covers part of four of the WWF 200 Global Ecoregions¹¹ and there are 27 Important Bird Areas¹² distributed over the country (see Annex 2). 14 (Khek) of these are almost entirely covered by protected areas. Another xxx overlap protected areas in part and xxx are totally outside the protected area system. The WWF Greater Mekong xxx has defined ecoregions xxx that build on the 200 Global Ecoregions (see Annex 3).

Environmental policies

Overview of where biodiversity is addressed and affected in government policy. This includes all biodiversity – with special attention to conservation in the agricultural ecosystem. Government's agrobiodiversity strategy. EIA, safeguards

Brief country context¹³: Since mid of the 90's a comprehensive policy and legislative framework related to the agriculture and natural resource sector has been established, which has been refined continuously resulting also in a number of recently developed and endorsed sectoral and inter-sectoral policies, plans and legislations. Some are still in elaboration¹⁴ and it should be mentioned

¹⁰ Times Reporters; Latest Update July 30, 2009

¹¹ Annamite Range Moist Forests; Indochina Dry Forests; Northern Indochina Sub-tropical Moist Forests; Mekong River and its catchment

¹² IBA Birdlife

¹³ Policies, legislative framework and institutions.

¹⁴ The Agricultural, Natural Resource and Rural Development Strategy (MAF) and Land Policy Strategy (NLMA).

that the line ministries are currently formulating annual and 5 year sector plans in the context of the elaboration of the upcoming 7th National Socio-economic Development Plan 2011 – 2015¹⁵.

In response to the UN Convention on Biological Diversity (CBD) and related commitments, the National Biodiversity Strategy and Action Plan (NBSAP) was elaborated and approved in 2004 with the objective to “maintain the diverse biodiversity as one key to poverty alleviation and protect the current asset base of the poor”. This objective emphasizes on the importance of agro-biodiversity not only for the conservation of biodiversity per se, but also for securing the livelihood of rural population and contribute to achieve important Millennium Development Goals such as poverty reduction. This is further manifested in some of the strategic principles¹⁶. With the assistance of FAO and UNDP, the National Agricultural Biodiversity Program (NBAP) was prepared and endorsed by the GoL in 2004, which provides a long-term strategy to sustainably manage, develop and conserve agro-biodiversity in the country and supports at the same time main development priorities of the GoL such as achieving food security and enhance capacities. Under the most recent policies of MAF, four development targets are identified: ensuring food security, commercialization of agriculture production, shifting cultivation stabilization for poverty reduction, and sustainable forest management¹⁷.

Since the early 1990s, the GoL has implemented four major policies to alleviate poverty, to transform agricultural practices and to protect natural forests especially in uplands including (a) shifting cultivation stabilization, (b) eradication of opium production, (c) land use planning and land allocation and (d) village consolidation. The often inappropriate implementation of these GoL policies and rapidly increasing foreign direct investment (FDI)¹⁸, especially from China, Thailand and Vietnam have contributed to the changes of the rural economy and agricultural landscapes, but also affected farming systems¹⁹ and the livelihood of the rural population.

Main responsibility for the management and conservation of biodiversity in agricultural landscapes are with the Ministry of Forestry (MAF)²⁰, especially after the recent transfer of the CBD to the Department of Planning at MAF²¹. Beside this other technical line ministries, especially the National Land Management Authority (NLMA)²², the Water Resource and Environment Agency (WREA) and the Ministry of Commerce and Industry have a stake in it. The Department of Planning in the ministries are mandated to elaborate sector plans (e.g. in the context of NSEDP's) and sector policies. Sector policies are developed in exchange with other relevant line ministries and procedures for the development of SEDP's under the responsibility of MPI include the participation of a wide range of government authorities, members of the National Assembly, the Lao Front of Reconstruction, mass organizations (e.g. LWU) and the general public.

Section below to annex
International and Regional Commitments and Policies

¹⁵ Deadline for sectoral plans to be send to MPI – mid January 2010. Approval of the 7th NSEDP by NA expected in September 2010.

¹⁶ E.g. “cultivated areas should remain diverse and productivity should be increased, through protection, conservation and the sustainable use of land resources”.

¹⁷ Whereby biodiversity conservation in agricultural landscapes is considered under the first and fourth of these targets.

¹⁸ Including concessions and contract farming.

¹⁹ Have accelerated the transformation from traditional subsistence-based agriculture to more intensive cash crop oriented systems.

²⁰ Most relevant the National Agriculture and Forestry Research Institute (NAFRI), the Department of Forestry (DoF) and the National Agriculture and Forestry Extension Service (NAFES).

²¹ Focal point is the DDG of the DoF.

²² Most relevant the Department of Land Policy and Inspection and the Department of Land.

Lao PDR is signatory to the following multilateral environmental agreements at international level, which will be subject to review:

Agenda 21

Millennium Development Goals (MDG's)

The UN Convention on Biodiversity Conservation (UNCBD)

The UN Framework Convention on Climate Change (UNFCCC)

Kyoto Protocol

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

International Treaty on Plant Genetic Resources for Food and Agriculture

At the regional level the following agreements and policies are relevant:

ASEAN Vision 2020 (1997)

Declaration of ASEAN Concord II (2003)

ASEAN Declaration on Environmental Sustainability (2007)

ASEAN Statement on Strengthening Forest Law Enforcement and Governance (2007)

ASEAN Economic Community Blueprint

The Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin (1995)

Cambodia – Laos - Vietnam Triangle Development Plan (2008)

It has to be noted in this context that the ADB is currently supporting the elaboration of a new Agricultural Vision and Strategy for the GMS (GMS Agricultural Vision 2011-15), but also for South-east Asia.

National Policies, Plans and Legislations

Since the early 90's a comprehensive policy framework including a number of inter-sectoral and sectoral policies and plans, of which the following are of major importance:

The National Growth and Poverty Eradication Strategy (2003)

The Socio-economic Development Strategy

The Sixth National Socio-economic Development Plan (2006-10)

The Strategic Vision for Integrated Watershed Management (2002)

The Government's Strategic Vision for the Agricultural Sector (1999)

The National Biodiversity Strategy to 2020 and Action Plan to 2010 (2004)

The National Agro-biodiversity Program (2004)

The Forestry Strategy to 2020 (2005)

4 Goals and 13 Measures of MAF (2006)

The National Nutrition Strategy (2008)

The National Strategy for Fisheries to 2020 and Action Plan for 2006 to 2010

Northern Upland Development Plan (2008)

National Adaptation Program of Action to Climate Change (2009)

The National Land Management Policy (in elaboration)

The 11 Priorities Program of the GoL (2009)

It should be mentioned here that currently sector ministries are developing sectoral plans and partially strategies (e.g. the Agricultural and Rural Development Strategy), to prepare inputs for the upcoming 7th National Socio-economic Development Plan 2011 – 2015 to be completed until end of 2010. Sectoral plans have to be available until February 2010.

Based on the overall policy directions various legislations were established subsequently. The most relevant laws include:

Investment Law (2009) – has just recently replaced the Law on Foreign and Domestic Investment (2004)
The Decree on State Land Lease or Land Concession (2009)
The Land Law (2003)
The PM Decree 88 on the Implementation of the Land Law (2008)
The Forestry Law (2007)
The Agriculture Law (1998)
Environmental Protection Law (1999)
PMO Regulation 1770 – Environmental Assessment (2000)
Water and Water Resources Law (1996)
End of section to annex

Environmental Impact Assessment (Initial Environmental Examination – IEE; Environmental Impact Assessment – EIA; Environmental Management Plan - EMP) are a widely used tool to evaluate the potential impact of any given activity on the environment. In particular, this refers to the impact of development projects or programs, including investment projects. The potential environmental impacts of projects/programs can be numerous and affect different aspects of the environment, such as soil erosion or water quality – but also biodiversity that is important for food and agriculture. In Lao PDR, the conservation and sustainable use of biodiversity in agriculture the short and long term, for national socio-economic development as well as for food security, nutrition and livelihoods, is important - hence, protecting biodiversity from the potential impact of development projects/ programs is a priority for Lao PDR.

Institutional framework for biodiversity conservation and management

Overview, including protected areas.

Biodiversity in agriculture and land management is a cross-cutting issue and therefore various government agencies (national down to local level) are of interest and have a stake, whereby the most relevant are the first four of the ones listed below:

The Ministry of Agriculture and Forestry
The Water Resources and Environment Authority (under PMO)
The National Land Management Authority (under PMO)
The Ministry of Planning and Investment
The Ministry of Education
The Ministry of Industry and Commerce
The Ministry of Justice

Beside this high level government organizations such as the National Science Council and the National Leading Committee on Rural Development and Poverty Reduction under the Prime Minister Office (PMO), as well as the National Front of Reconstruction and relevant mass organization (such as the Lao Women Union) are of interest in this context. There are also a number of International Non Government Organizations (INGO's), local user groups, as well as private local and foreign investors that have a stake in agro-biodiversity – in a direct or indirect way.

The National Agricultural and Forestry Research Institute was established in 1999 in order to consolidate and coordinate agriculture and forestry research activities within the country. There are five commodity based research centres, four policy research centres and two regional centres (Annex P)

There are currently 21 National Biodiversity Conservation Areas covering 35,000 km² or 14% of the total land area. Only 8 have management plans and only 4 of the plans are implemented (reference

- Khek). There are an additional 76 provincial conservation areas and 136 district conservation areas covering 12,000 km² (details in Annex).

Plant breeding (NAFRI research stations, IRRI) Rice and Cash Crops Research Centre, Horticulture Research Centre)

There are duplicate collections of rice at IRRI in Manila and in Vientiane in long term storage facilities and these are relatively safe from degradation, but the collections that are worked on most frequently for plant breeding are in medium term storage facilities in Vientiane and these have to be regenerated every few years. In principle all the collections are at risk from power failures, but the ones in Laos are at higher risk than the ones in the Philippines. The germination rates of many of the samples in the medium term collections are already worryingly low. The team are discussing ways in which the GEF project could assist with a strategy that would maintain the ex-situ gene bank in an organized way. There are now 15,000 accessions in Laos that are being regenerated at the rate of 1000 accessions per year (samples grown in small plots and the seeds collected for storage under the same label) but no one knows how many genetic varieties these represent. DNA analysis to determine genotypes is required at some stage. There is considerable phenotypic variation according to how, when and where the varieties are grown.

Governance

Including decentralization, corruption, official assessments of capacity. An overview, EIA, Safeguards implementation

The larger-scale area concession-based arrangements are varied: (i) some are run as simple plantation/estates (if a sufficient contiguous land area can be identified, and which often imports all or part of the required labor); (ii) others operate as 'nucleus estate/smallholder outreach' models (where the estate both buys primary produce and supplies technical support, markets and short-term credit); and (iii) other examples are where companies will rent smallholders' land and hire farmers as laborers. Many of these investments involve Chinese (for rubber, mainly in the north), Vietnamese (mainly coffee - and now rubber - in the south), Korean (e.g., planting *Jatropha* for bio-diesel fuel) and Indian (e.g., the Birla Company - pulp and paper based on fast-growing wood fiber) companies. In the case of Chinese and Vietnamese entities, many of these are state-owned enterprises, often exploiting some kinds of historical political/patronage linkages with particular provinces. Very recent investors (2008-2009) also include Middle Eastern companies (for staples - rice and corn - production, and specialist products - such as agarwood).

While such concession investments have the potential to create jobs for the local population, there are also major concerns and many potential problems. Most obviously, land is often given (often under Provincial authority, the status of which is unclear, and whose administrative and financial processes are opaque) to applicants on a 'first come, first served' basis without any proper feasibility analysis and for extremely low annual land rentals (typically a few dollars per hectare²³). Clearly there are major implications for both economic efficiency and for equity.

Evidence of the impacts of some land-based investments in rubber is now emerging, and suggests that: (i) clearance for plantations occurs on both agricultural land and "degraded forest land", which means that soil erosion, biodiversity loss, and the decline of underground water resources will intensify; (ii) investment projects are often implemented in areas with a number of different ethnic groups and a mosaic of agricultural production practices (including rotational shifting cultivation, livestock raising and the gathering of NTFPs), and the decline of cultivation land and forest resources contributes to negative impacts on both food security and cultural practices; and (iii) as rubber

²³ Captured as an economic rent by local officials

cultivation is labor intensive, substantial increased in-migration of foreign labor often brings the formation of relatively vulnerable communities, increased human trafficking and health problems. In general: (i) the distribution of the benefits which are created in these commercial arrangements are not well understood, and the long-term implications for poverty reduction, sustainability of farming practices, and gender and ethnic relations are unclear; and (ii) MAF policy towards such commercial arrangements is currently ambiguous, and the scale and speed of commercial arrangements (and especially the investment from China) threatens to compromise or undermine existing planned strategic initiatives (e.g., the Northern Region Development Strategy).

No substantive controls have been placed on the areas under rubber cultivation. The Land Use Planning and Land Allocation law was instituted by the Lao government to encourage farmers to protect land and use it more effectively through delineating land-use areas and village boundaries. The law, however, has not been effectively implemented or enforced in a majority of villages. One aspect of the law, which stipulates that land left fallow for more than three years reverts to community ownership, has resulted in farmers planting rubber on the land, whether it is suitable or not, simply to retain the land-use rights.

A Prime Ministerial order in 2006 called for a moratorium on granting foreign land concessions, but this has not stopped all such concessions. The large amounts of money involved in the business will hinder progress. The Lao Army and some high level political leaders are known to have invested heavily in rubber plantations and the public is discouraged from expressing dissent.

Donor assistance in the agriculture sector

Enormous number of agricultural and rural development projects that aim to reduce poverty through modified and alternative livelihoods with sometimes incompletely assessed impacts on biodiversity. It is difficult to be sure of the actual total, but it is clear that there are and have been an extraordinary number of field based donor-funded investigations and interventions in the field of poverty alleviation and natural resource management (usually involving agriculture and biodiversity) in Lao PDR. See, for example, Figure 1 for distribution of 327 such interventions in northern Laos. Many of these interventions have the same rough objective: to improve livelihoods of farmers through changes in farming practices. They include attention to finding new markets for particular crops and for products of wild species (usually referred to as Non-timber Forest Products (NTFPs)) that occur in the agricultural landscape (but not farmed land), cultivation of wild species (on farmed land), and promotion of organic and other premium products.

The outputs of these projects and programmes include huge numbers of written reports, most of them unpublished, and not widely read. There are some fora for exchange of information, notably LaoFAB and Lao Links, through the internet, but relatively little analysis has been done to benefit in an organized way from the wealth of valuable experience, the data, and the lessons learned from these numerous activities.

17.

Threats: again question of focus – is it too wide

Focus on the agricultural landscape – and a breakdown of agrobiodiversity into its component parts. Although cultivated land per se occupies only 6% (check xxx) or so of the country, it occurs within a mosaic of heavily exploited forest often formerly used as swidden fields. Decision that the project includes these areas in its scope as PIF refers to land use changes for rubber plantations etc.

The objective of mainstreaming biodiversity²⁴ is “to internalize the goals of biodiversity conservation and the sustainable use of biological resources into economic sectors and development models, policies and programmes, and therefore into all human behaviour”. “Mainstreaming” is an extremely broad concept: it can take place at the level of national policy, or local government decision making, or in the everyday behaviour of the general public and commercial businesses.

The project is aimed at contributing to the conservation of biodiversity in a highly modified landscape – an anthropogenic habitat. The concept of agrobiodiversity is defined in the PIF²⁵ and in the National Agrobiodiversity Strategy²⁶. However it requires some disaggregation in order to encourage straight thinking in project development and implementation. There are four discrete components:

- a) The diversity of wild species (plants, fungi, micro-organisms and animals) in agricultural landscapes²⁷
- b) The diversity of modified habitats in agricultural landscapes
- c) The diversity of species of crops and livestock
- d) The diversity within species of crops and livestock: for example varieties of rice, and breeds of goats and chickens

It is not useful to group these components together always, as desired results and required actions are different according to the component being addressed. Intertwined in the crops and livestock and modified habitats, and the use that wild species are put to, is a huge human dimension: the knowledge, history, culture, and unconscious selection processes that have shaped and are still shaping the landscape and its biodiversity domesticate and wild. The biophysical conditions cannot be easily separated from the cultural and traditional.

Land management: dams, clearance of forests for cash crops, mining

Farming practices: intensification leading to pollution, loss of domesticated varieties

Over-utilization of wild species: (this mainly off the agricultural land itself) wildlife trade, which has always been important in Laos, now facilitated by new roads and better access to markets, tradition of hunting, increased human population, NTFP collection and cultivation impacts. Shortly after the new species of salamander (see above) was discovered in Laos in xxx it was fetching good prices in Japanese pet trade and continues to be collected in large quantities

Many of the larger species falling below sustainable population sizes in protected areas.

A few globally threatened and near-threatened species affected by overhunting eg migratory Yellow-breasted Bunting (VU) (*Emberiza aureola*) which relies on rice-stubble as part of winter feeding grounds on return from breeding in Siberia, and aquatic species including Oriental Darter (NT)

²⁴ Agreed by participants at the September 2004 Global Environment Facility (GEF) workshop on biodiversity held in Cape Town, South Africa

²⁵ *Agricultural biodiversity is a broad term that includes all components of biological diversity of relevance to food and agriculture, and all components of biological diversity that constitute the agricultural ecosystems, also named agro-ecosystems: the variety and variability of animals, plants and micro-organisms, at the genetic, species and ecosystem levels, which are necessary to sustain key functions of the agro-ecosystem, its structure and processes* (COP decision V/5, appendix).

²⁶ All components of biological diversity of relevance to food and agriculture, and all components of biodiversity that constitute the agro-ecosystem – the variety and variability of animals, plants and micro-organisms. Agricultural biological diversity is described at the genetic, species and ecosystem levels, and covers both cultivated and wild organisms (Lao PDR National Agrobiodiversity Strategy)

²⁷ This includes, of course, keystone species that provide ecosystem services of value to agriculture

(*Anhinga melanogaster*) beginning to appear on wetlands associated with agriculture since conservation improved on Tonle Sap (xxx Tonle Sap GEF project reference Khek). Fish – data awaited (Khek) Other species that commonly use agricultural fields or fallow include..... Elephants raid crops on occasion and human-elephant conflicts are likely to increase as habitat is fragmented and converted. Tigers move out of their forest habitats and make forays into the surrounding landscape, and on occasion are reported to take livestock. Many of the fish, amphibians and invertebrates in agricultural wetlands are affected by agrochemical use and over-exploitation for human food.

Root causes

The push for rapid economic development leading to environmental changes and levels of utilization that threaten the existence of many species, and market forces that lead to agricultural intensification, including use of agrochemicals and loss local varieties

Some 320 million people live along the Mekong watershed, and the drive for economic development is leading to environmental changes and levels of utilization that threaten the existence of many species. The number of dams is increasing fast, there has been more and more clearance of forests to provide land for cash crops, and the wildlife trade, which has always been important in Laos, is now facilitated by new roads and better access to markets.

Government priority, individual and company interests, other countries' economic interests.

Assessments of the trends in natural resource use in the Greater Mekong Subregion are alarming. Some consider "the ability of the natural resource base to continue to support the livelihoods of the poor in the Mekong is at a crisis point", and that "forests and rivers are in a state of rapid ecological decline caused by human overexploitation"²⁸. A separate analysis²⁹ focusing on protected areas and their surroundings in three countries, including one in Laos, stressed that powerful external commercial interests bear much of the blame for destruction of biodiversity, and that sound government policies and effective enforcement are required together with genuine transfer of rights and benefits to local people in return for responsibilities for local management.

Laotians have for centuries farmed rice and other crops in small plots and have developed a huge range of crop varieties, adapted to a range of different growing conditions. Individual farmers commonly grow up to eight local varieties of rice that differ in tolerance to heat, early or late rainfall, and have different maturation periods in order to spread the harvest over a longer period and to provide insurance against weather or pest damage. The same is true to a lesser extent of other crops such as mangoes and aubergines. Laos is at or near the centre of origin of cultivated rice and is home to three or four species of wild rice, but this fact and its global significance is not universally appreciated in the country, even among professionals.

Recent changes in agricultural practices included the widespread introduction of improved varieties of rice in lowland farming areas along the Mekong, and this has led to the loss of many lowland local varieties. It is estimated that xxx (Silinthone) of the local varieties of Savannakhet have already gone extinct in the farming landscape and are only available now in the seed banks. So far no improved varieties have been developed that are suitable for the colder uplands, but work is continuing and it is likely that soon the (greater) variety of upland local varieties will also be at risk from distribution of improved varieties.

²⁸ Cornford, J and N Matthews (2007) Hidden costs – The underside of economic transformation in the Greater Mekong Subregion. Oxfam, Australia.

²⁹ Corbett, J (2008) Paper Parks and Paper Partnerships: Lessons for protected areas and biodiversity corridors in the Greater Mekong Subregion. IUCN,

Market forces

Current markets and routes for agricultural produce and NTFPs, any added value processing at source, export restrictions due to phytosanitary and livestock quarantine regulations, absolute need to meet standards by the time of WTO accession, premium prices based on standards - eg organic certifications, fair trade, Value chain analyses completed

Farmers benefit greatly from utilization of wild species in the agricultural landscape, but have up to now tended to harvest wild species without adequate management measures, "mining" them in effect, especially where there is a commercial market, but even when the harvest is just for subsistence. Proper management measures would safeguard biodiversity and in many cases lead to higher yields in the long term.

Simple co-management agreements have already led to spectacular changes in fish catches under a WWF/Ministry of Agriculture programme ComFish, and the same principles could be applied to terrestrial systems. The time scale for recovery of populations is probably longer in terrestrial habitats: in order for squirrels or muntjacs to reach population densities in fallow forest land that would allow an appreciable and reliable offtake people would have to refrain from hunting (and be confident that others would also refrain) for two or three years at least. At that stage they might decide that ecotourism would be a better alternative, particularly, if as is the case in Phonexay District (the field site of TABI in Luang Prabang Province) they live on the edge of a well-managed protected area.

Demonstrating the financial benefits of biodiversity is a common approach in justifying conservation measures to both governments and the general public. The economic development that is converting the landscape from fallow, forest and agriculture for monocrop plantations, hydro-power and mining is driven both by a national desire to become a modern nation and to eliminate poverty, and by a privileged elite who are in danger of damaging national heritage for immediate financial gain. Protected areas are not enough alone to protect wild species and habitats so biodiversity must be mainstreamed into productive landscapes. Arguments on global biodiversity value alone are insufficient to halt the drive towards intensification and replacement of local rice varieties with improved varieties in the uplands as they become available from breeding programmes, but it is also unlikely that economic arguments and the commodifying of ecosystems and biodiversity will lead to the necessary changes in behaviour needed to stop land conversion and continue traditional agricultural methods. People also have to want to conserve natural ecosystems because they value them as somewhere to live, or, in some cases, somewhere to visit.

There are many direct investments in marketing of natural resources and a whole range of donor funded agricultural and rural development projects, some research based, some focusing on finding opportunities for poor farmers to increase their incomes through marketing of crops or non-timber forest products (including aquatic products). Under current conditions commercial markets for wild species (commonly called NTFPs) collected in the agricultural landscape are not matched with adequate natural resources management systems. Without proper management measures commercial sales of wild species are likely to lead to unacceptable harm to biodiversity. There are many proposals and some practice of domestication of NTFPs - cultivating or breeding them in captivity.

Alien invasive species that have already arrived in the country are causing problems in agriculture. Exotic rice varieties are being introduced, including one from Brasil. There are measures in policy to control deliberate import, but knowledge is sparse among many technical staff. Existing

management problems re Argentine Golden Apple Snail (*Pomacea canaliculata*), Water Hyacinth (*Eichhornia crassipes*) and other plants, including *Fusarium fujikuroi*, *Echinochloa colonum* (Graminae), *Echinochloa crus-galli* (Graminae), *Minisa invisa* (Leguminosae), and *Mimosa pigra* (Leguminosae). Poisoning of the Apple Snail pollutes water and creates health risks.

The long term solution (GOAL).

Diverse agricultural systems are more stable than simple ones. The long term solution is the maintenance of an appropriate level of diversity in the landscape as a requirement for sustainability of agriculture and this will deliver globally significant results in biodiversity conservation through maintenance of diversity of local varieties of crops, conservation of wild rice, and reductions in impacts of farmers on water and wild species through better management of agrochemicals, and improved natural resource management. **Decision making and action in land management and agriculture, by government, farmers and agribusiness take into account the importance of maintaining biodiversity in the agricultural landscape so that globally important biodiversity is secured.**

Do this through establishing clear links between maintenance of biodiversity and quality of life in rural areas (including basic food security). Use the benefits of maintaining aquatic ecosystems and species diversity as major incentives to achieve the goal.

Barriers to achieving the solution (goal)

- Policies that are inconsistent,
- Decisions and actions that are flawed in terms of both biodiversity conservation and national benefit
- People acting for immediate or short term benefit, often because they have no option

One of the constraining influences on long term planning is some farmers' lack of confidence that the land they live on and the resources they are interested in will remain under their control for long enough to benefit from their stinting, and any management measures they invest in. It is important that government officials take the lead in informing people of development proposals and that there is an open and transparent process in assessment of these proposals. Policy questions of land titling are also relevant here.

Provincial and district officers, under current conditions, are not able to manage the level of change with which they are faced. Hydro-power, mines, roads, plantations and other contract farming, contraction of the swidden cycle leading to over-use of land, introduction of improved varieties leading to increased uses of agro-chemicals, and unchecked collection of wild species for commercial sale, all contribute to a web of interacting factors that would be difficult to manage effectively even with much better facilities and training. The impacts of these factors on biodiversity and the environment, and on current and long term food security have been well documented, but it is difficult to change direction.

Often government officials are in effect handing over power and influence to direct investors and to donor projects in agriculture and forestry and the influence of such parties can be considerable.

The drivers are formidable. Current policy and implementation favours rapid economic development without proper accounting for environmental damage, and this allows concessions to be awarded at provincial or district level with poor local consultation, and without reference to higher levels or any strategic assessment of the impacts in combination with other land clearance, and often without reference to local land use plans. Rubber and Eucalyptus are not the problem per

se, but the scale of the plantations, the arbitrariness of the agreements, the poor skills and preparedness of the local residents and governments to manage the crops, lead to wholly avoidable loss of both biodiversity and productivity. Local consultation and participation are promoted in principle but the fact is that many of the decisions are made without any proper consultation, and that some farmers agree to cooperate on contract farming because of fears of losing their land use rights. This leaves them with reduced scope for farming in sustainable ways on the land that is left to them, and food security and stability are threatened.

Even where good policies exist they are not implemented well. Particularly at district level the effectiveness of agricultural officers is limited by poor resourcing, low pay and inadequate knowledge and experience.

Hunting and gathering (including fishing) is a tradition that has been remains an important source of food for farmers. When use was for home consumption or barter such activities provided sustainable components (and most of the protein) in the diets of hill farmers. Commercial markets and increased access to markets have led to massive declines in much sought after wild species such as pangolins (*Manis pentadactyla*) and there has been an escalation in the number of non-timber forest products traded commercially. Guns are still common despite attempts to ban them, and hunting is not taken seriously as a crime by many law enforcement officers. There is growing concern about this and a high profile campaign to reduce such hunting was launched on the occasion of the opening of the 25th ASEAN Games in Laos.

Wild rice- many professionals simply simply not aware of its existence in the country or its significance and go so far as to deny its importance.

Sometimes economic incentives can be found, but those will not be enough alone against the barriers faced. Willingness to take action is a fundamental requirement for success of the project

There is still **insufficient awareness** at all levels in the society on the importance of biodiversity in agricultural landscapes to fulfill international commitments, but also for the livelihood of the rural population, especially for food security and nutrition. Conserving biodiversity in agricultural landscape is a relatively new approach/ concept in Lao PDR, as traditionally the focus for biodiversity conservation was placed on the National Protected Areas that included large contiguous forests that harbor most of the globally significant and threatened species (key species). Especially policy and decision makers, but also policy implementers and the private sector have to be sensitized to be able to address existing threats endangering biodiversity in agricultural landscapes successfully.

Insufficient availability of information in appropriate formats: The availability of reliable information based on results from applied research and experiences from the practice are the basis for sound and informed decision making. Although a considerable amount of information and numerous experiences of a wide range of stakeholders exist related to the sustainable management and conservation of biodiversity per se, but also in agricultural landscapes³⁰, they are (1) not yet sufficiently evaluated and synthesized and (2) not yet tailored and provided in appropriate formats and degrees of details for different target groups (e.g. high level policy and decision makers, staff involved in policy development), based on their requirements.

Biodiversity conservation in agricultural landscapes is not yet appropriately addressed in other relevant policies and plans ('not yet mainstreamed'): Sustainable economic growth, accelerated social development, and poverty reduction remain strategic objectives of the GoL to improve the living standard of the population and removing the country from the list of Least Developed

³⁰ In the country, but also in the region – e.g. Lower Mekong Basin.

Countries (LDC's). In line with this national policies and development programs focus on the "modernization" and "transformation" of the ANR sector. Beside this the GoL promotes land development 'turning it into capital' either through the transformation from subsistence to commodity oriented production by farmers, or through concessions related to agriculture, forestry³¹, hydropower or mining. In addition, land concessions are being promoted as a means to attract foreign direct investment (FDI) to develop land in rural areas. Agricultural policies largely focus on intensifying agricultural production systems to increase agricultural productivity³², rather than to conserve and use agro-biodiversity sustainable in the interests of contributing to national development priorities and international commitments. Agro-biodiversity is neither specifically mentioned nor sufficiently integrated in other relevant policies that impact threats, although it is implicit as a cross-cutting issue relevant to many sectors.

Capacity and institutional constraints: Weak institutional and capabilities of staff (e.g. insufficient staff numbers, low education level, insufficient skills) are a general phenomena in Lao PDR and not sector specific. However, although these capacity issues are relevant for all of the relevant agencies mentioned before, the ones that have been just recently established (e.g. the NLMA in 2007) are currently still most affected. In the context of policy development it includes aspects such as inappropriate capabilities to analyze and to appropriately integrate issues and concerns related to biodiversity in agricultural landscapes, as well as weak inter-sectoral coordination and cooperation mechanism. Beside this financial resources are also constraint. There is also a lack of capacity to support the development of agricultural systems that are agro-biodiversity "friendly", as the extension service currently lacks the capacity to provide practical support to farmers to maintain or improve productivity in agro-biodiversity rich farming systems.

The baseline

Policy baseline: Five year 7th National Strategy for Economic and Social Development under preparation; various donors working on land allocation and land management (GTZ, UNDP etc). Implementation of dogmatic or idealistic policy without a proper step by step approach may lead to depleted biodiversity and reduced productivity of agricultural land.

Institutional capacity and policy implementation baseline: Central government trying to establish provincial assemblies to reduce decentralization, projects working in agricultural development and poverty alleviation (FAO, WB, ADB, SDC, WWF, IUCN, WCS, LBA), projects working in governance (UNDP), GEF projects with UNDP, GEF projects with World Bank, projects and agribusinesses working in markets for agricultural produce and NTFPs. NAFRI working on rice, maize and vegetable and fruit genetic diversity – eg annual regeneration of 1000 accessions from the medium term rice gene bank in Vientiane, continued collection of local varieties in uplands, work on wild rice species with University of Kyoto and others

Public information and involvement baseline: Petitions, and call-ins to National Assembly, projects working to strengthen the National Assembly (UNDP, CIM), Community Radio (UNDP Governance Project), new registration arrangements for CSOs, environmental CSOs registered, new Botanic Gardnen (Pha Tad Ke) being established at Luang Prabang. Hunting of many wild species is not keeping them at such low densities that yields are almost nil, and opportunities are being lost to increase yields by allowing populations to build up to higher levels (maximum sustainable yield etc) and then showing constraint in harvesting.

³¹ Industrial tree plantation are promoted to alleviate poverty and to develop land, but also to contribute to the livelihood transformation in uplands, opium eradication and to stabilize shifting cultivation. The past pronounced increases in industrial tree plantation development are mainly due to GoL's policies and plans related to socio-economic development (e.g. 5th and 6th NSEDP), as well as foreign and domestic investment.

³² Placing emphasis on high-yielding varieties and chemical inputs in form of fertilizer and pesticides to increase productivity.

Stakeholder analysis

Who (government actions, donor funded assistance, CSOs) is doing what, brief summaries of involvement of relevant groups

The following initiatives already address some of the mentioned barriers and are therefore of particular interest for a mutual cooperation with the new initiative:

- The Agro-biodiversity Initiative (TABI; MAF/SDC) started just recently and its first phase lasts until 2012. It focuses on 1 district in 2 northern provinces (Luang Prabang/ Xieng Khuang) and aims to improve the livelihoods of upland communities through sustainable management and productive use of agro-biodiversity resources. Of special relevance are its component 1 (related to CBD reporting and implementation mechanism - implemented by IUCN) and component 5 (related to knowledge capitalization/ information management – implemented by the University of Bern).
- The 'Support to the Reform of the Luang Prabang Agriculture and Forestry College (SURAFCO) just started mid of 2009 under the MAF in close collaboration with the MoE supported by SDC (2009-2012/ 3 years). The project intends to contribute to modernize the agriculture and forestry sector by providing better qualified graduates to be absorbed by the extension system. Among the 6 outcomes are the introduction of a skills-based curriculum and the building up of a partner network³³. Curriculum development (outcome 3) – assess current curriculum (output 1); define structure and contents of the new curriculum (output 2). The support will focus initially on the LAFC during phase 1 and than expanded to other colleges.
- The Poverty Environment Initiative (PEI; MPI/ UNDP/ UNEP) - has been launched recently and its main concern is to mainstream environmental issues that impact the poor into institutions and development processes. It intends to built up capacity, integrate environmental issues into guidelines and planning, awareness creation and implantation of pilot projects in selected provinces such as Phongsaly, Oudomxay, Saravane and Savannakhet.
- The Catch up Research Program (NAFRI/ CIFOR, ICRAF) started in 2007 (until 2011) addresses three research areas – landscapes and livelihoods, driving forces of land use changes and practices to be scaled up to achieve broader impacts on livelihood and environment. It supports the development of a decision support system, knowledge capitalization and dissemination, as well as capacity building.
- The Northern Upland Development Core Coherent Program (MAF/ EU, AFD, SDC, GTZ) is implemented by MAF in collaboration with other Ministries (e.g. NLMA, MPI, WREA) in selected districts of Phongsaly, Houaphanh and Luang Prabang province and will start in 2010. Interventions intend to promote socially and environmentally sustainable farming systems to achieve a reduction in poverty and food security, agricultural productivity and market integration, land and natural resource management, local governance and planning. At the national level it includes policy development and the capitalization of lessons learned.
- The Sustainable Natural Resource Management and Productivity Enhancement Project (SNRMPEP; MAF/ ADB/IFAD) - started recently and will be executed in close collaboration with relevant line agencies and donor initiatives from 2009 until 2015. It targets the five southern provinces Attapeu, Champassak, Salavane, Savannakhet and Sekong. It aims to achieve firstly an enhanced institutional capacity at national and provincial levels to manage natural resource utilization in a sustainable manner and secondly a higher productivity within the agriculture and natural resource sector. To achieve these goals various activities

³³ The others are improved student selection and motivation; better trained teachers; improved infrastructure and equipment; modern management practices introduced.

are planned that mainly relate to the following four components – capacity building, sub-project investment, promotion of producer associations and policy development.

- WWF programmes , WCS. IUCN

Codes of Practice for industrial tree plantations was commissioned by the Land Issues Working Group (LIWG), and supported by funding from the Swiss Agency for Development and Cooperation.

Given the strong driving forces of economic development in Laos, conservation of varieties of rice and other crop plants cannot be done *in-situ* alone. The government itself is promoting the use of improved varieties and working hard and well in plant breeding to develop varieties with a range of characters - specific aromas and stem characters, or adaptations to higher or lower temperatures or rainfall. This is part of development and it depends on the collection and conservation *ex-situ* of local varieties and wild species. There are duplicate collections of rice at IRRI in Manila and in Vientiane in long term storage facilities and these are relatively safe from degradation, but the collections that are worked on most frequently for plant breeding are in medium term storage facilities in Vientiane and these have to be regenerated every few years. In principle all the collections are at risk from power failures, but the ones in Laos are at higher risk than the ones in the Philippines. The germination rates of many of the samples in the medium term collections are already worryingly low. The team are discussing ways in which the GEF project could assist with a strategy that would maintain the ex-situ gene bank in an organized way. There are now 15,000 accessions in Laos that are being regenerated at the rate of 1000 accessions per year (samples grown in small plots and the seeds collected for storage under the same label) but no one knows how many genetic varieties these represent. DNA analysis to determine genotypes is required at some stage. There is considerable phenotypic variation according to how, when and where the varieties are grown. This has been noted in particular in the characterization trials for aromatic varieties. For example, small chicken rice (xxx) of Xieng Khoung Province so popular with the Vietnamese produces none of the characteristic aroma when grown in trials in Vientiane, which may explain why the market for it holds up as an export to Vietnam (even though genetic analysis indicates that it originated in Vietnam). So site specific phenotypic characters could be just as important in marketing of varieties, and in that case it is important to know how many varieties we are actually dealing with.

Farmers – 80% of population – but hard to generalize as some have already taken up employment or doing contract farming. Increasing dissatisfaction in some areas and feel forced in some places into arrangements for contract farming in order to preserve their land use rights.

District agricultural officers – village kumbans – villages – agribusiness – NAFRI – NAFES - Protected Area Network – NLMA – WREA – MAF – MOC – MPI

An enormous range of involvement but limitation is that results and experience are not collated and studied properly to inform policy formulation, capacity development, marketing strategies and public involvement. Some projects failing in certain aspects but experience not being pooled. Project reports not being used effectively – mean readership estimate for each report. TABI KISS component trying to amalgamate results in order to shape policy and analysing range of NTFP and farming system interventions. LEAP making relevant information available on the web and providing discussion fora through LaoFAB and LaoLINKS but not working on syntheses.

2. STRATEGY

To address: Erosion of genetic diversity in crops and livestock, decrease in distribution of wild relatives of crops and livestock, loss of habitat and wild species diversity in the farmers fields (and in fallow) – linked here to major land allocation for rubber etc.

Project Rationale

Maintenance of biodiversity in agriculture is essential for stability, and climate change adds further urgency. The baseline is an overlapping and many layered mosaic of sometimes inconsistent policy, institutional, and decentralization that has led to poor governance due to conflicts of interest in government and among privileged members of the public. District agricultural officers (and certain other technical staff) do not have the capacity to manage the fundamental changes that are under way, and biodiversity will suffer and with it agricultural systems. There are many interventions in rural development that aim to assist in managing this change, mainly through poverty alleviation through adjusted and alternative rural livelihoods that depend on biodiversity. There are also interventions in wildlife conservation that address biodiversity conservation through incentives for farmers encouraging natural resource management of fish and NTFPs (land management relevance ? agriculture – must focus) .

Most of the rural development projects do not consider biodiversity sufficiently in the activities they promote, and the wildlife conservation projects generally do not integrate genetic diversity of crops and livestock – no reference even in published guides to methodology.

SDC's TABI project addresses both. It aims *"To improve the livelihoods of poor upland communities based on the productive use and conservation of agrobiodiversity resources"*. TABI approaches "agro-biodiversity" conservation as the key to alleviation of poverty and to ensure food security. FAO have for years been championing the values of wild biodiversity in agricultural fields and nearby, for national and local food security. This project's primary aim is begin from the global significance of Laos' biodiversity and to ensure that this biodiversity is considered in decision making and action in agriculture and land management, including initiatives to improve food security.

This provides good potential for complementary work with TABI. One of the important roles of the GEF project will be to ensure that biodiversity is assessed well at the TABI sites, and that these assessments are used to help to shape TABI's poverty alleviation initiatives in agriculture (and land management) so that overall they contribute to biodiversity conservation and individually at least do no (unacceptable) harm to biodiversity. There are clear benefits to conserving and using biodiversity sustainably, and sometimes the barrier is merely the fact that people are not acting together.

Government does not take the lead sufficiently in coordinating projects, defining objectives, establishing common visions, and ensuring genuine progress towards the objectives. Agriculture is in transition. Combinations of market and political forces are leading farmers towards intensification of agriculture , reduced diversity of crops and livestock and in many cases working as outgrowers or employees on land concessions for monocrop plantations funded by direct foreign investment. A range of rural development projects are working over the country to assist people who are left with less land per person as a result of the policy to restrict swidden, land allocated to contract farming, and population growth to change production methods and develop new markets for crops, livestock or NTFPs. Genetic diversity of rice and do not include sufficient

There are gaps to be filled: 1) the results of large numbers of relevant projects in agricultural development and wildlife conservation are not collated and analysed and are therefore not fed back into policy formulation, capacity development and governance in an organized way. 2) globally significant biodiversity is not singled out for special attention in project activities 3) many rural development initiatives do not give priority to biodiversity impacts in planning their activities and

approaches 4) even under TABI globally and nationally significant biodiversity is not always given rigorous treatment

This GEF project will fill these gaps. It will collate and analyse results of projects and research related to biodiversity in agriculture in Laos in the context of other work in the region, and feed conclusions, best practice and lessons learned, positive and negative, into policy and institutional capacity building for implementation of policy and establishment of market mechanisms that contribute to biodiversity conservation and at least to do no harm to biodiversity. The project will address governance through capacity building at national and local levels and through several strands of public information and involvement. Will use strengths of UNDP and FAO to assist with policy and institutional work at state government level and in the National Assembly. The project will also engage in long term mentoring of selected provincial and district agricultural and forestry officers.

Projects that advocate "agro-enterprises" should include environmental assessment, in particular for biodiversity, and the GEF project will assist with mainstreaming this requirement in both government policy and donor project practice. FAO has begun work on the criteria for assessment of biodiversity impacts in agricultural projects (Netherlands FAO partnership). The literature of many such projects does not deal adequately if at all with biodiversity or the environment.

The priority now is not for a separate site-based project collecting more data: what is needed is an overarching project that brings results together, feeds them into policy and practice. Rather than develop separate sites, the GEF project will add value in terms of global biodiversity by working together on the same sites with TABI and work at other sites when appropriate but without establishing project administrations and vehicles etc. TABI has two project sites already and plans to establish new sites in the near future. One of the important roles of the GEF project will be to ensure that biodiversity is assessed well at the TABI sites, and that these assessments are used to guide TABI's poverty alleviation initiatives so that they at least do no (unacceptable) harm to biodiversity and if possible contribute to biodiversity conservation.

Mainstreaming biodiversity in agriculture requires attention to a vast range of conditions prevalent in different places and focusing on areas where the threats to biodiversity in agriculture are different. TABI will establish demonstration sites in the south of the country to supplement those in the north, and the GEF project will work together with TABI in selection and assessment of the sites using (after modifying to improve biodiversity considerations) the Agro-Ecosystems Analysis methodology already developed by them. Will thus have future (southern/lowland) project site research costs co-financed and will benefit from the three year development costs of TABI which included establishment of upland project sites.

A common view is that if poor farmers are helped to find a market for a new crop or something that they can collect from the forest, this can help them out of poverty and reduce their impact on the environment. Incomes can be improved, at least in the short run, but increased income is by no means a guarantee of reduced impact on the environment: indeed the opposite can be true. Each case is different and must be examined carefully. In line with its strategic approach, the project will not promote markets for specific products or implement new farming systems on the ground but will work with agricultural projects, with government officials and with farmers, to assess existing initiatives (feasibility, and impacts on both the target species and other species (including "by-catch") and habitats) and provide comprehensive advice. With TABI the work will be closer, with participation in the field assessments, land use planning and farmer consultations leading to ways in which to tackle the underlying problems of maintaining diversity and guaranteeing quality of life.

The best chances for demonstrating the value of marketing as a tool in biodiversity conservation, are in developing demands for:

- premium priced crops, farmed fish, livestock that are either
- produced in ways that do not pollute the environment and therefore contribute to maintenance of water quality and biodiversity dependent on that water supply
- local varieties that would not be grown any more in the absence of a premium market
- wild species that are sustainably harvested and whose sale produces income that offsets the opportunity costs of local people clearing land or taking wild species that cannot be sustainably harvested.
- cultivated species that when sown together with rice, for example, provide environmental benefits that counteract the costs of the short fallow periods

Premium prices for organic products and for specific varieties of rice, or rice grown in areas where biodiversity conservation guidelines are followed (eg Ibis Rice in Cambodia) are potential mechanisms for enhanced environmental management and the conservation of genetic material. In Laos in particular there are local benefits from following organic production methods: benefits to downstream aquatic systems in terms of food supplies, in cost-saving on fertilizers and pesticides, and in stability of harvests if more than one variety is used.

Organic marketing requirements seem to lead to specialization in the varieties used, so benefits in water quality could be offset by losses of genetic material through certain varieties not being grown any more. Total abstention from inorganic fertilizer may be too much of a price to pay in terms of lower productivity, so the emphasis should be on maintaining ecosystem processes and a healthy aquatic downstream environment for food supplies in the village.

The project will work to develop corporate environmental and social responsibility standards that make some measure of biodiversity "friendliness" for products from the agricultural landscape. There are many criteria to consider, including impacts on other species, and whether market demand once established can be met without damaging the resource in poor years. Aspects to consider include the agricultural production process (size of plot, water consumption, technique, intensive/extensive form of cultivation, use of pesticide/herbicide (requirements and actual use – sometimes badly applied), domesticated or wild product, soil erosion, labour requirements); the characteristic of post-harvesting and processing technologies at farm level (pollution level, use of other natural resources - dyes, firewood - or chemicals); "Centralised" processing technologies (Does the processing technology in itself introduce the need for a standardised product to be used and is the establishment of this standard environmentally detrimental?).

Considerable effort is going into finding ways of coping with the imposition of the shorter fallows³⁴ through development of short fallow, and annual cropping systems. Short fallow systems involve rotation of rice with (mostly leguminous) species that both enrich fallow and provide a cash crop in a short period. Paper mulberry (a native species and not a legume) and Pigeon Pea are used in this way, and it is here that marketing can help to establish a demand.

Although there are no improved varieties developed for annual cropping testing has identified existing local varieties that are inherently more suitable for annual cropping, and these are being used. Work is being done on nutrient replenishment from companion crops or cover crops, and

³⁴ As a result of policy to stop swidden agriculture in upland fields land was allocated to farmers sufficient only for two or three years swidden cycle, and swidden is unsustainable with such short cycles

again an economic benefit will often depend on a market for the other crop, because even though the cover or companion crops may contribute to soil fertility they also cause decreases in rice yield. Other possibilities include upland terraces in combination with more livestock, but this is labour intensive and the land is steep for livestock.

Another option to deal with the shortening of the fallow is to expand paddy rice in the (montane) lowlands, often through terracing. Yields are much higher than in the uplands, and for farmers who operate both lowland and upland plots and grow rice only for subsistence purposes, this could free upland land for cash crops. However, upland rice fetches higher prices than lowland paddy on the market so this leads farmers to carry on producing upland rice even when they are self-sufficient with lowland rice. Currently available improved varieties are for the most part not suited for growing in montane paddy lowlands of the north. In particular they are highly susceptible to the gall midge (*Orseolia oryzae*), which causes considerable variation in yields from year to year, and they are intolerant of the cold and low rainfall in the north. And improving soil fertility increases gall midge problems so the emphasis is on identification and use of local varieties that have good inherent resistance to gall midge (but have other limitations such as being late maturing for example), and, in the medium to long term, using these varieties in plant breeding work to develop an improved variety for upland paddy.

It is a complex picture, and it is dynamic, changing all the time in response to land concessions, markets, social pressures, rural depopulation through moves to the capital or beyond.

These areas are well served by agricultural and rural development projects. The project will concentrate on activities that will contribute to mainstreaming biodiversity into agriculture and land management and not get diverted into areas that are best tackled by rural development projects. Its mainstreaming function here is to provide the framework for assessment of schemes to provide food security and income for farmers in general, in terms of impacts on biodiversity and to work with those projects to establish procedures for such assessment and for the balanced decision making that follows in developing methodology that would provide incentives for the various stakeholders to act in ways that contribute to biodiversity conservation.

In situ conservation of local varieties of rice and of wild rice species is considered at least a sensible precaution against loss of the seed bank samples, and by most an essential component. Recent research shows that there are microorganisms³⁵ in plant tissue on the surface of the rhizosphere of wild rice that would be essential for production. It is likely that the native varieties still grown *in situ* are also host to these microorganisms and that seed bank samples would lose them with implications for viability as crops. So the rationale for future production is there. It is hard, however to find foolproof approaches to keeping these local varieties in cultivation. Already many local varieties have disappeared from in situ cultivation, and farmers will find it hard to refuse the improved (high yield) varieties that are likely to be developed in the near future for use in the uplands, and continue with low yield varieties? The key may lie, as do the keys to many of the conservation problems in agriculture, in the health of aquatic ecosystems and the essential contribution of the products of those aquatic ecosystems to feeding rural people on the one hand, and to local pride in and preference for eating the traditional varieties on the other hand.

Low yield varieties survive without fertilizer and pesticide whereas the agro-chemicals required for the improved varieties would deplete on-farm or downstream fish, crustacean, mollusc, aquatic

³⁵ Minamisawa, K., K Nishioka, T Miyaki, Y. Bin, T. Miyamoto, Y. Mu, A Saito, M Saito, W. L. Barraquio, N Teaumroong, T. Sein, and T. Sato (2004) Anaerobic Nitrogen-Fixing Consortia Consisting of Clostridia Isolated from Gramineous Plants Applied and Environmental Microbiology, 70 (5) 3096–3102

insect and amphibian populations used as food. This argument breaks down if there are rubber plantations feeding pollutants into the same drainage, or using too much water for rubber manufacture, and it is here that the links with land management are clear. There are other approaches too: agro-ecotourism that encourages interest in traditional varieties of rice; markets for organic rice or specific rice varieties from a single district; the project's work in the field will address this question. It is important that we do not prejudge the requirements and it is really important that the people themselves are included in the development of the solutions to the problems of uncertainty and reduced availability of land for cultivation.

The GEF project's role is to provide, demonstrate, and institutionalize where appropriate, a framework under which the decisions are made, whether by government, NGOs, commercial companies, bilateral and multilateral donors, or farmers themselves.

There are a number of important concerns regarding biodiversity conservation in agriculture that can best be addressed such individual case studies including research and actions. These include hunting of (a limited number of) globally threatened and near threatened species; wild rice distribution and conservation status; rodent control; alien invasive species management; and human-elephant conflicts.

Policy conformity

The GEF project is in conformity with major agricultural policies and will assist government to lay out action plans to achieve policy goals that so far are not supported by reasonable approaches. There may be some areas of policy unconformity too in that some goals related to intensification of agriculture may be modified to make them compatible with biodiversity conservation.

List main policies - National Biodiversity Strategy and Action Plan, Strategic Vision for Agriculture Sector, National Agricultural Biodiversity Programme (and specific Outputs of the NABP³⁶).

UNDAF Outcome and Output as on Page 1, plus contributions to other UNDAF Outcomes eg UNDAF Outcome 3: By 2011, strengthened capacities of public and private institutions to fulfill their duties and greater people's participation in governance and advocacy for the promotion of human rights in conformity with the Millennium Declaration

GEF – in conformity with Biodiversity Focal Area Strategic Objective 2 *To mainstream biodiversity in production landscapes/seascapes and sectors*, and Strategic Program 4 *Strengthening the policy and regulatory framework for mainstreaming biodiversity*. The expected Outcome is *Policy and regulatory frameworks governing sectors outside the environment sector incorporate measures to conserve biodiversity*, and the Indicator is *The degree to which policies and regulations governing sectoral activities include measures to conserve and sustainably use biodiversity as measured through GEF tracking tool*.

³⁶ eg 1.1 Improved understanding of crop and crop-associated biodiversity etc; 1.3. Documentation and dissemination of successful management practices; 1.5 Improved management and understanding of national ex-situ collections; 1.9 Strengthened capacities of stakeholders in the crop sector; Increased awareness of the value of PGRFA (Plant Genetic Resources for Food and Agriculture) and C-CAB (Crop and Crop-associated biodiversity), 1.11 Enhanced enabling policy environment for the promotion of sustainable production and diversification of subsistence and industrial crops; 3.1 Improved understanding of existing NTFPs relevant to food security and sustainable livelihoods; 2.1 Improved understanding of animal genetic resources diversity in Lao PDR; 3.2 Improved understanding of human management and economic markets for NTFPs; 3.4/3.5 Strengthening policy and capacity for sustainable use of NTFPs; 3.6 National level information exchange system on NTFPs; 4.1 Improved understanding of the status of aquatic resources for food security and sustainable livelihoods; 4.2/4.3 Strengthened institutional and human capacity and management re aquatic resources; 4.4 Increased understanding of importance of aquatic resources among policy makers

Country Ownership

Country Eligibility

The Government of Lao PDR signed the 1992 Convention on Biological Diversity (CBD) in 1995 and submitted its first Biodiversity Country Report in 2004. Subsequent BCRs have been drafted but not submitted, and the most recent (4th) is under preparation. A National Biodiversity Strategy and Action Plan was completed in 2004 under the leadership of the Science, Technology and Environment Agency (now Water Resources and Environment Agency (WREA)) and with the assistance of the Ministry of Agriculture and Forestry (MAF). A process of public consultation was implemented in order to prepare the NSBAP.

Country Drivenness

Responsibility for CBD implementation was recently passed from WREA to the Department of Forestry in MAF. The CBD requires Laos to act to conserve its biodiversity. A comprehensive protected areas network was established following proper assessment and planning, in the 1990s. Lao PDR contributed to and participated enthusiastically in a massive survey of the rice diversity of the country and continues to give high priority to genetic diversity in agricultural crops and livestock. The goal of the NBSAP is to maintain the diverse biodiversity as a key to poverty alleviation and to protect the resource base of the poor.

There are problems and inconsistencies that require attention, but the country embraces the principles of biodiversity conservation for sustainable development.

Biodiversity in agriculture is of particular interest in Lao PDR and TABI is receiving a high level of support from MAF and other ministries. MAF's Department of Planning, who are the main counterpart of TABI will also execute the GEF project and support the close alignment of the two in the interests of useful results and cost-effectiveness.

Design principles and strategic considerations

- Strategic approach: take advantage of considerable body of work completed and in progress in agricultural development and biodiversity use and conservation to add the globally significant aspects in a cost-effective way. In particular join forces with the long term (planned 16 year duration) TABI programme and share information and project sites to maximize impact and avoid redundant duplication.
- Partnerships proposed, apart from the major one with TABI (and through TABI to the Centre for Development and Environment (CDE)), include Poverty and Environment Initiative (UNDP), SELNA, Sustainable Forestry and Rural Development Project (SUFORD) (World Bank and FINNIDA), Pha Tad Ke Botanic Garden³⁷, Sustainable Natural Resources Management and Productivity Enhancement Project (ADB and IFAD), IUCN, WCS, WWF, Lao Biodiversity Association (newish local CSO) and the Centre for International Migration and Development³⁸, which may be able to supply suitably qualified technical experts to work on the project.
- Establishing common understanding: all too often projects fail because there are differing expectations from the "stakeholders".
- Technical advice: ensure sound technical advice as an important part of the project's inputs
- Sustainability: provide mainly technical advice rather than funds, and only provide funds when a clear need is identified and most of the contribution, in kind or in cash, comes from the local farmers themselves.
- Training: whenever possible use training on the job and long term mentoring at all levels. District Agricultural and Forestry Officers will be matched with long term technical advisers

³⁷ <http://www.pha-tad-ke.com/english/downloads/Pha-tad-ke-pressfile.pdf>

³⁸ <http://www.cimonline.de/en/index.asp>

stationed with them in their districts. The subject matter of any training courses should be of immediate relevance to all the trainees in their work. The best way to make sure of this is for training to be mainly on the job and linked to specific tasks and outputs. The emphasis should be on institutionalizing training whenever possible – for example in the various civil service training schools.

- **Public involvement:** it is important that the public are better informed if they want to participate in local land use decisions: this requires dialogue over a long period rather than single workshops and meetings. Empowering the public with information is an essential aspect of mainstreaming. Facilitation of dialogue, and finding novel and effective ways for the target groups themselves to pass on the message within their own ranks is more important than one way information dissemination
- **Utilitarian and intrinsic values:** in pushing the utilitarian rationale for conservation, however, we must not lose sight of the intrinsic value arguments. The utilitarian justification alone will not guarantee conservation and is not sufficient to achieve success. Unless people actually want a pleasant environment with diverse species and varieties it will not happen, so public involvement is important in both the economic and aesthetic arenas.
- **Social and Environmental Assessment:** when formulating project outcomes, outputs and activities it is important to keep in mind the need to keep social and environmental impacts within acceptable limits and to give adequate consideration to biodiversity impacts.
- **Evidence based conservation:** the project should be advocating and practicing evidence-based conservation. Uncoordinated and poorly thought out interventions should be avoided.
- **Link to good GIS:** the project will need access to good GIS map-based information
- **Supply vs Demand:** local knowledge is often undervalued by development projects and project initiatives are often supply driven rather than demand driven: this project will put an emphasis on long term development of options in the district sites with TABI
- **Local aspirations:** rapid economic development should not be forced upon farmers: quality of life is vital, and aquatic food sources lost or depleted as a result of flawed agricultural and land management initiatives may well be valued more highly than increased cash income. They should be given the chance though, to decide for themselves how they want to live, and the GEF project will emphasize information and involvement so that people have the information that they need to make choices and make representations to government officials and political representatives.
- **Links and partnerships:** in some cases the project will further its objective by providing technical input regarding environmental and biodiversity impacts and sustainability to the work of other projects and programmes. (There will be partnerships with GEF too: Climate Change in Agriculture in Lao PDR, and the Small Grants Programme which could be guided by this project)
- **Incrementality:** without this GEF project, policy and its implementation related to globally significant biodiversity in agricultural landscapes will not be addressed effectively, and further depletion of both wild and domestic biodiversity will occur with implications for both global and national food security.

Project objective, outcomes, outputs/activities

The objective

To work towards routine and consistent consideration of biodiversity conservation in government and public decision making and action in the agricultural landscape. Rather than an over-ambitious goal using terms such as “ensure” the objective is realistic and the required achievements under this objective are defined as indicators of project success in the following section.

There are three outcomes or major results under the overall objective, which are also phrased as progress towards ideal states, and indicators for the outcomes in turn show the milestones that are expected to be achieved within the time frame of the project. The project structure is heavily influenced by the collaboration with the larger and longer duration TABI and in order to ensure effective attention to globally significant biodiversity the interventions of the GEF project will cut across levels of government and from cities to villages. The outcomes are cross-cutting in order for the project to act strategically at all levels to address the main barriers of policy and governance. The tools to address these barriers are information and knowledge management, evidence-based decision making, public involvement and market and other financial incentives. Specific outputs and indicative activities are described under each outcome. Focus will be vital, as the agricultural landscape is huge, and it will be easy for the project's efforts to get dissipated and diluted unless there is tight control of the scope of activities.

Outcome 1

Biodiversity conservation is better incorporated into government policies and the regulatory framework related to land management and agriculture

Under this outcome the basis will be laid for firm action on management of natural resources to keep biodiversity loss to acceptable limits following evidence-based decision making processes. Policies will be grounded in realistic regulatory and implementation frameworks. Certain sectors will be selected for detailed policy analyses and recommendations on the following: land allocation, water management (quality and quantity), farming systems, market regulation and standards, environmental and social impact assessments for large infrastructure development including dams and diversions, roads and mining. Methodology will focus on mentoring of planning and other technical staff with technical experts engaged by the project.

The outputs necessary to achieve this outcome are described below:

Output 1.1 Comprehensive analyses of information from agricultural development practice and research (including this project's experience in the field) prepared in ways for ready integration of biodiversity considerations into policies, plans³⁹ and natural resource markets and marketing

- Facilitation of experience exchange among donor funded projects and government programmes, academics (research/ NAFRI & NERI), NGO's, , and the private sector (agribusinesses). Can include tightly focused small thematic workshops and small group established to prepare the main analyses.
- Analysis and synthesis of case studies (applied research), lessons and experiences from relevant previous and current initiatives supported by donors, the Government, NGO's and the private sector, including marketing
- Brief and innovative accounts of the lessons learned in land management and agricultural development, including marketing. with respect to biodiversity conservation and local livelihoods
- Information materials prepared with different levels of detail: succinct briefs for high-level policy and decision makers and fuller, better supported accounts for technical staff involved in the formulation of policies and plans

Output 1.2 High-level policy and decision makers at national and provincial level sensitized and aware of the importance of biodiversity conservation in agricultural landscapes.

- Disseminate policy briefs to high-level policy and decision makers at national and provincial level (e.g. DG/ DDG's of relevant technical Departments/ DoP's).

³⁹ In close cooperation and complementary to TABI.

- Organize and provide briefings by resource persons during pre-sessions related to the two annual sessions of the National Assembly⁴⁰ involving the National Science Council and/ or the National Leading Committee on Rural Development and Poverty Reduction.
- Initiate and support the establishment of a 'study group' on biodiversity in agriculture and land management within the National Assembly, in the way similar to the one supported by UNDP⁴¹ so that a National Assembly study group is established and active in biodiversity conservation matters
- Integrate the conservation of biodiversity in agriculture in appropriate detail into all courses at the civil servant/political training schools (eg Tha Ngon/ Vientiane)

Output 1.3 Enhanced technical knowledge and analytical and policy formulation skills of relevant people (e.g. MAF Department of Planning staff, technical working groups such as the working group on Agriculture and Natural Resources, provincial staff)

- Provide technical expertise (e.g. on the job training/ mentoring (big emphasis on this) to analyze existing gaps and subsequently adjust policies and plans.
- Support joint learning through the inter-sectoral exchange of experiences at national and provincial level (e.g. workshops).

Output 1.4 Existing policy formulation and dialogue mechanisms at national level and selected provinces are strengthened and the private sector and the general public are increasingly involved.

- Provision of leadership and facilitation training for key people (e.g. DoP's/ Science Council and/ or Leading Committee for Rural Development and Poverty Reduction).
- Support dialogue between practice, policy and research and strengthen government – private sector linkages - promote 'communication' not only dissemination of information (e.g. workshops to discuss experiences and to formulate policy inputs).
- Support National Assembly constituency offices in provinces and members of the National Assembly to involve the general public more (e.g. using kind of 'hotline' feed back mechanism⁴² in promoting proper consideration of biodiversity in land management and agriculture. Involve Task Force that collects comments/ suggestions from people/ support the establishment of such a mechanism at provincial level).
- Work towards Lao Women's Union including biodiversity considerations into all dialogue on land management and agriculture nationwide at all levels so that people are more involved in policy debate
- Support regional exchange of experiences to learn from other countries in the region (e.g. finance attendance of key persons at relevant regional events).

Output 1.5 Draft policies prepared

- Annual sectoral plans for 2012 prepared for NLMA, WREA, MAF, MOC, and MPI bringing consideration of biodiversity conservation to a high level of priority
- 8th National Social and Economic Development Plan bringing consideration of biodiversity conservation in the agricultural landscape to a high and convincing level of priority

⁴⁰ Or for relevant committees, such as the one for Social and Cultural Affairs/ Law/ Socio-economic Planning.

⁴¹ This initiative "Joint Program for Support to an Effective Lao NA" will end in 2012 and is supported by UNDP, German Embassy and Government of Singapore. It has recently initiated the establishment of such 'study groups' (as "think tanks") to promote information exchange and dialogue related to thematic issues, whereby the participation of members of the NA is voluntarily.

⁴² People can contact and communicate with the NA Task Force free of charge by using a hotline (established with support from the UNDP initiative) - 156/ fax 021 452627 and e-mail na_session@na.gov.la.

- Changes to the regulatory framework and procedures on Environment and Social Impact Assessment to include rigorous consideration of biodiversity impacts of agricultural development and exploitation of wild species in the agricultural landscape

Outcome 2

Members of government, government staff in selected ministries, private sector agri-businesses, donor-funded development projects, and the general public increase consideration of biodiversity conservation in their day to day work and standards.

Output 2.1 Government staff in relevant sectors very clear about the importance of biodiversity conservation and sustainable management in agricultural landscapes and possess adequate technical knowledge to respond to questions, and to review proposals confidently.

- Organize and conduct inter-sectoral workshops for government staff (PAFO, NLMA, WREA) at national level and in selected provinces.
- Create awareness by teachers and students on agro-biodiversity by organizing 'guest lectures' at relevant faculties of universities and technical colleges.
- Tailor and provide information on agro-biodiversity to be integrated into teaching materials of relevant subjects and study courses at Universities.
- Tailor and provide information on agro-biodiversity to be integrated into teaching materials of relevant subjects and study courses at agriculture and forestry technical schools⁴³.
- High quality approach to biodiversity conservation incorporated into in-service training of agricultural extension officers
- Longterm mentoring of district agriculture and forestry officers

Output 2.2 The private sector, especially agri-business shows an increasing level of corporate environmental and social responsibility in their project development, promotion and marketing.

- Generate information on environmental and social impacts of agri-business (including impacts on agro-biodiversity)⁴⁴.
- Sensitize the private sector about their responsibilities by disseminating this information and facilitate exchange among the agri-business community.
- Inform the private sector on local laws and regulations, as well as on principles of biodiversity conservation and sustainable management.
- Create awareness about the importance of corporate environmental and social responsibility (e.g. using 'good examples/ best practices' from the region/ abroad).
- Elaborate and promote a voluntary 'code of conduct' including standards, based on best practices/ experiences in the region and beyond. Work with existing initiatives (eg SDC/LIWG (Land Issues Working Group) on industrial tree plantations, and to include agricultural (and NTFP?) production.

Output 2.3: Donor funded projects and programmes show increased rigour in the way that they consider and assess impact on biodiversity in their scope of activities.

- Sensitize donors about the importance of agro-biodiversity by providing information during donor round table discussions and thematic working group sessions (one established – the ANR working group). (e.g. presentations resource person, provision of information materials). Also development projects in agriculture should be required by Ministry to meet

⁴³ Cooperate with SDC to support the reform of technical colleges, initially the Luang Prabang Agriculture and Forestry College.

⁴⁴ E.g. in cooperation with the MPower network coordinated by the University of Chiang Mai (www.mpowernet.org) and NERI.

together at the Ministry at intervals for coordination of activities and incorporation of biodiversity aspects.

- Disseminate standards to monitor and measure the biodiversity conservation and management impacts in agricultural landscapes under donor-funded initiatives.
- TABI programmes adjusted as a result of working together closely in field sites (initially Phonexay and Phoukout)
- Selection of new field sites for TABI influenced by sound consideration of global biodiversity significance

Output 2.4: Biodiversity conservation considerations incorporated into existing policy implementation tools.

- Refine screening criteria as a part of Initial Environmental Examination (IEE), Environmental and Social Impact Assessment (ESIA) and Strategic Environmental Assessment (SEA)⁴⁵.
- Refine guidelines related to land based investments (e.g. incorporation of criteria/ standards for organic farming and industrial tree plantation development).
- Incorporation of biodiversity considerations into land use planning procedures in the agricultural landscape (e.g. criteria).
- Develop standards to monitor the effectiveness of biodiversity conservation and management in agricultural landscapes by donor initiatives and agri-business investments.

Output 2.5 Case studies on biodiversity in agriculture. Where additional research is required for policy and capacity development and public information

- Wild rice status and conservation priorities
- Human elephant conflicts
- Alien invasive species
- Hunting and globally threatened species
- Rodent control

Output 2.6 A public information and involvement campaign planned and implemented

- A striking, hard-hitting film publicizing the environmental threats to Lao's biodiversity and people
- Radio plays, news and debates on community radio (Xieng Khouang) in collaboration with UNDP Governance Programme.
- Assistance with public displays at Pha Tad Ke Botanic Garden, Luang Prabang
- Volunteer plant collectors engaged to collect herbarium and botanic garden specimens in collaboration with Pha Tad Ke Botanic Garden and Sud Expert
- A mobile education unit (specially state of the art audio-visually equipped vehicle) that travels the country with films and lecturers, and theatre groups to publicize the cause of biodiversity conservation in agriculture and land management and its importance for the nation
- Farmers in selected villages in Phonexay taking the lead, in collaboration with the District Agriculture and Forest Officer in choosing development options according to their economic requirements and aspirations and the conditions required for maintenance of biodiversity in the agricultural landscape

Key Indicators

Objective/Outcomes	Indicators
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⁴⁵ Based on the 'Guideline for integrating agro-biodiversity into EIA' developed by NAFRI/ FAO in 2007.

Objective To work towards routine and consistent consideration of biodiversity conservation in government and public decision making and action in the agricultural landscape.	Proportion of agricultural landscape that is (a) fallow and (b) wetland
	Number of local varieties of rice in representative areas
	Number of local varieties of vegetables grown in representative areas
	Water quality index, including occurrence of aquatic animals (established methodology from The Asia Foundation)
	Number of wild species of vertebrates in the agricultural landscape (established methodology from MIST – World Bank)
	Area of distribution of each of four wild species of rice
	Area of large-scale mono-crop rubber plantations
Outcome 1. Biodiversity conservation is better incorporated into government policies and the regulatory framework related to land management and agriculture	Number of improvements with respect to biodiversity in agriculture in the 8 th National Social and Economic Development Plan, compared with the 7 th Plan and in the next National Agricultural Strategy
	Proportion of annual plans for selected sectors at provincial level (and for Provincial Investment Plan) that include adequate consideration of biodiversity conservation in agriculture
	Proportion of petitions and call-ins to the National Assembly that reflect public concern over loss of biodiversity in agriculture as a result of government decisions and actions
Outcome 2: Members of government, government staff in selected ministries, private sector agri-businesses, donor-funded development projects, and the general public increase consideration of biodiversity conservation in their day to day work and standards.	Environmental impact assessment reports and monitoring of mitigation that meet robust criteria for procedures
	Proportion of agricultural extension officers actively promoting biodiversity conservation
	Number of ministries that have adopted improved procedures for assessment of biodiversity impacts
	Number of registered local associations promoting conservation of biodiversity in agriculture
	Number of newspaper articles per month reporting public action supporting conservation of biodiversity in agriculture
	The overall financial volume of trade in products from the agricultural landscape meeting the corporate environmental and social responsibility standards
	The proportion of agri-business operations promoted by the private sector, development projects and government that at least do no significant harm to biodiversity

Risks

Slow to reach common understanding of the project objective
Flawed ideas on what constitute sound biodiversity conservation measures
Partners pursuing narrow institutional targets rather than working together
Lack of political will to tackle fundamental problems of governance
Implementation arrangements that stymie project progress through impractical payment and reporting arrangements.

Financial modality

The GEF funds will be provided as a grant. UNDP and FAO cofinancing will be used to fund technical assistance. Other cofinance will be in kind – parallel projects.

Cost effectiveness

Strategic, with a wide range of partners. Field site expenses (research, establishment) already meet by TABI. Other partners with ongoing projects too. An arrangement will be established under which long term technical assistance available under TABI will provided linkage and continuity for short term intermittent technical assistance under the GEF project. This will allow international expertise to be incorporated into project plans and implementation at a reasonable cost in relation to the total budget. Periodic visits from the GEF chief technical adviser will set targets and standards for work in his or her absence.

CIM – no reply yet Dietmar checking

Will collaborate with WWF and WCS on community management demonstrations in Phonexay and maybe elsewhere

GEF Small Grants US\$600.000 per yr - should coopt for case studies

GEF Climate Change in Agriculture project (UNDP) 9 million USD – can share resources on some policy work/training

GEF Nam Et Phu Louey NPA project (WB) overlap in Phonexay District and a little in Phoukout

GEF Regional Wetlands Project (UNDP) Not operational but should use results

Sustainability

The policy development will be one-off and will be a product.

The training in policy development will not involve large numbers of one-off workshops. It will be

- through mentoring over a long period (6 yrs duration)
- through institutionalization into curricula and training methodology

Public involvement should "light a spark" that arouses people to start their own activities by the end of the project.

TABI expect to be continuing for 16 years (ie 9 years after the end of the GEF project) so there is time for some of the unestablished results to become established with their guidance

Work with corporate environmental and social responsibility once it has reached an agreement on standards will be tracked until the end of the project, by which time it should be self-sustaining

Donor project consideration of biodiversity should become institutionalized, including in requirements from the Ministry of Agriculture and Forestry in project development

Priorities for action in wild rice conservation, and some other aspects of biodiversity in agriculture will be described and the project will look for technical implementation funds from other sources, including government and donors (private sector, commercial, NGO, bilateral and multilateral).

Replicability

A mainstreaming project such as this one, should achieve results that are one-off if properly done. Biodiversity actions need to be replicated but the establishment in policy and implementation is the aim. Public decision making and action in the TABI field sites to be replicated elsewhere.

3. Project Results Framework

<p>This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD: Outcome 1: Improved access to land and sustainable use of natural resources Country Programme Outcome Indicators: Capacities of government at central level and in selected provinces strengthened for the conserving agrobiodiversity and mainstreaming agrobiodiversity conservation into the attainment of food security and livelihoods improvement Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one): 1. <u>Mainstreaming environmental and energy</u> OR 2. Catalyzing environmental finance OR 3. Promote climate change adaptation OR 4. Expanding access to environmental and energy services for the poor. Applicable GEF Strategic Objective and Program: <u>SO2: To Mainstream Biodiversity in Production Landscapes/Seascapes and Sectors</u> SP 4: Strengthening the Policy and Regulatory Framework for Mainstreaming Biodiversity Applicable GEF Expected Outcomes: Policy and regulatory frameworks governing sectors outside the environment sector incorporate measures to conserve and sustainably use biodiversity Applicable GEF Outcome Indicators: The degree to which policies and regulations governing sectoral activities include measures to conserve and sustainably use biodiversity as measured through the GEF tracking tool</p>				
Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Project Objective⁴⁶ To work towards routine and consistent consideration of biodiversity conservation in government and public decision making and action in the agricultural landscape.	Level determined from land use maps in selected districts nationwide	(a) does not drop below level x (b) maintained at current level or increased	TABI and other mapping,	
	Number of local varieties of rice in representative areas	Increase by at least y%	Repeats of earlier surveys, commissioned by this project if necessary	
Number of local varieties of vegetables grown in representative areas	Numbers from all available surveys in other projects/investigations	Increase by at least z%	Repeats of earlier surveys, commissioned by this project if necessary	

⁴⁶ Objective (Atlas output) monitored quarterly ERBM and annually in APR/PIR

<p>Outcome 1⁴⁷ Biodiversity conservation is better incorporated into government policies and the regulatory framework related to land management and agriculture</p>	<p>Water quality index (includes invertebrate and vertebrate diversity)</p>	<p>Score on standard aquatic quality assessment (The Asia Foundation)</p>	<p>Increase by p%</p>	<p>Repeat of assessment</p>	
	<p>Number of wild species of vertebrates in the agricultural landscape</p>	<p>Score on rapid assessment of biodiversity monitoring</p>	<p>Increase by q%</p>	<p>Repeat of monitoring</p>	
	<p>Area of distribution of each of four wild species of rice</p>	<p>Current area (from survey and from expert knowledge)</p>	<p>Any decrease less than 10%</p>	<p>Survey data</p>	
	<p>Area of large scale mono-crop rubber</p>	<p>Km²</p>	<p>Increase less than 1%</p>	<p>Local records backed up by satellite data</p>	
	<p>Number of improvements with respect to biodiversity in agriculture in the 8th National Social and Economic Development Plan, compared with the 7th Plan and in the next National Agricultural Strategy</p>	<p>Score in NSEDP (and NAS) against biodiversity criteria</p>	<p>Increase</p>	<p>Expert assessment (panel)</p>	
	<p>Proportion of annual plans for selected sectors at provincial level (and for Provincial Investment Plan) that include</p>	<p>Scores of each on biodiversity criteria</p>	<p>Annual increases</p>	<p>Expert assessment (panel)</p>	

⁴⁷ All outcomes monitored annually in the APR/PIR. It is highly recommended not to have more than 4 outcomes.

	adequate consideration of biodiversity conservation in agriculture	Proportion of petitions and call-ins to the National Assembly that reflect public concern over loss of biodiversity in agriculture as a result of government decisions and actions	Number for November 2010 (month in which project starts)	Increase	From official records via SELNA project	
Outcome 2: Members of government, government staff in selected ministries, private sector agri-businesses, donor-funded development projects, and the general public increase consideration of biodiversity conservation in their day to day	Proportion of environmental impact assessment reports and monitoring of mitigation that meet robust criteria for procedures	Proportion of agricultural extension officers actively promoting biodiversity conservation	Second half of 2010	Increase annually	Official records	
			Current proportion – random sample	Increase	Random sample of officers observed and interviewed. Interviews with farmers about what they have learned from extension officers	

work and standards.	Number of ministries that have adopted improved procedures for assessment of biodiversity impacts	Number in 2010	Annual increase	Project records
Number of registered local associations promoting conservation of biodiversity in agriculture	Number of registered local associations promoting conservation of biodiversity in agriculture	Current number (to be assessed)	Increase	Data on registration of associations
Number of newspaper articles per month reporting public action supporting conservation of biodiversity in agriculture	Number of newspaper articles per month reporting public action supporting conservation of biodiversity in agriculture	The number for first month of the project (one Lao newspaper and one English one + provincial newspapers when they exist) (probably biased as they are going to report on the project -- I would look at month 4,5 and 6 as baseline)	Increase	Press cuttings from agency or individual employed to do this
The overall financial volume of trade in products from the agricultural landscape meeting the corporate environmental and social responsibility standards	The overall financial volume of trade in products from the agricultural landscape meeting the corporate environmental and social responsibility standards	US\$ in 2010 both domestic and international trade	increase by s% and t% respectively in value	Import/Export statistics and expert assesement

	<p>The proportion of agri-business operations promoted by the private sector, development projects and government that at least do no significant harm to biodiversity</p>	<p>Number for 2010</p>	<p>Scores of each on biodiversity criteria</p>	<p>Annual increases from Y3 by 5% each year</p>	
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Total Budget and Workplan

Award ID:	<i>must be created before submission for GEF CEO approval and entered in the submission documents</i>	Project ID(s):	<i>must be created before submission for GEF CEO approval and entered in the submission documents</i>
Award Title:	Country Name Project Title		
Business Unit:	<i>must be created before submission for GEF CEO approval and entered in the submission documents</i>		
Project Title:	Country Name Project Title		
PIMS no.:	<i>must be created before submission for GEF CEO approval and entered in the submission documents</i>		
Implementing Partner (Executing Agency)	tbd		

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Total (USD)	See Budget Note:		
OUTCOME 1: Biodiversity conservation is better incorporated into government policies and the regulatory framework related to land management and agriculture	Party 1	62000 (62160) (62180)	GEF (LDCF) (SCCF) Or other donor	71200	International Consultants	\$	\$	\$	\$	\$	x		
					Local Consultants	\$	\$	\$	\$	\$	x		
					Contractual services	\$	\$	\$	\$	\$			
					etc	\$	\$	\$	\$	\$			
					sub-total GEF	\$	\$	\$	\$	\$			
					International Consultants	\$	\$	\$	\$	\$	x		
		xxxxx	Donor 2 ⁴⁸	71600 71300	Travel	Local Consultants	\$	\$	\$	\$	\$	\$	
						Etc	\$	\$	\$	\$	\$	\$	
						sub-total Donor 2	\$	\$	\$	\$	\$		
						etc							
						Local Consultants	\$	\$	\$	\$	\$	x	
						Sub-total GEF	\$	\$	\$	\$	\$		
xxxxx	Donor 2	72500 74500	Contractual services	Office Supplies	\$	\$	\$	\$	\$	\$			
				Miscellaneous	\$	\$	\$	\$	\$	\$			
					\$	\$	\$	\$	\$				
					\$	\$	\$	\$	\$				

⁴⁸ Only cash co-financing (cost sharing at project level or other trust funds) actually passing through UNDP accounts should be entered here and in Atlas. Other co-financing should NOT be shown here.

4. Management arrangements

Results of capacity assessment of implementing partner

UNDP and FAO Support Services

Collaborative arrangements with related projects

Prior obligations and prerequisites

Brief description/summary of the inputs to be provided by all partners

Audit arrangements

Agreement on intellectual property rights and use of logo on the project's deliverables

Roles and responsibilities of the parties involved in managing the project

The Project Board is responsible for making management decisions for a project in particular when guidance is required by the Project Manager. The Project Board plays a critical role in project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems with external bodies. In addition, it approves the appointment and responsibilities of the Project Manager and any delegation of its Project Assurance responsibilities. Based on the approved Annual WorkPlan, the Project Board can also consider and approve the quarterly plans (if applicable) and also approve any essential deviations from the original plans. In this case the Project Board is equivalent to the Project Steering Committee of TABI and will be responsible for guiding both TABI and this GEF project.

In order to ensure UNDP's ultimate accountability for the project results, Project Board decisions will be made in accordance to standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case consensus cannot be reached within the Board, the final decision shall rest with the UNDP Project Manager.

Potential members of the Project Board are reviewed and recommended for approval during the PAC meeting. Representatives of other stakeholders can be included in the Board as appropriate. The Board contains three distinct roles, including:

- 1) **An Executive:** individual representing the project ownership to chair the group.
 - *e.g. Representative of the Government Cooperating Agency or UNDP*
- 2) **Senior Supplier:** individual or group representing the interests of the parties concerned which provide funding for specific cost sharing projects and/or technical expertise to the project. The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project.
 - *e.g. Representative of the Implementing Partner and/or UNDP*
- 3) **Senior Beneficiary:** individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries.
 - *e.g. Representative of the Government or Civil Society.*
- 4) **The Project Assurance** role supports the Project Board Executive by carrying out objective and independent project oversight and monitoring functions. The Project Manager and Project Assurance roles should never be held by the same individual for the same project.
 - *e.g. A UNDP Staff member typically holds the Project Assurance role.*

Project Manager: The Project Manager has the authority to run the project on a day-to-day basis on behalf of the Implementing Partner within the constraints laid down by the Board. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost.

Project Support: The Project Support role provides project administration, management and technical support to the Project Manager as required by the needs of the individual project or Project Manager.

5. Monitoring Framework and Evaluation

Three UNDP corporate tools are to be used in project monitoring and evaluation:

1. [ERBM which is linked to ATLAS](#)
2. [UNDP Evaluation Resource Centre](#)

The project will be monitored through the following M&E activities. The M&E budget is provided in the table below.

Project start:

The project will be monitored through the following M&E activities. The M&E budget is provided in **Error! Reference source not found.** below. The M&E plan of the project will be closely aligned and harmonized with that of The Agrobiodiversity Initiative (TABII) (see Annex E).

It is vital that all partners understand the objective of the project and the scope of the activities that will be funded. During the first two months after the arrival of the Chief Technical Adviser (Annex C xxx) project management will work to establish as far as possible a common vision among project and donor agency staff, government counterparts, cofinancing partners, and farmers in Phonexay and Phoukout districts. Once project management is satisfied that expectations from the project are more or less in line with the project document a project workplan for the first year will be prepared. This workplan will be distributed for comment and discussed in person with the various "stakeholders", by the third month of the project. An Inception Workshop will be held between two and three months into the project to present the details of project management and implementation to

The Inception Workshop should address a number of key issues including:

- Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of UNDP CO and RCU staff vis à vis the project team. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff will be discussed again as needed.
- Assist the partners to understand capacity gaps and needs and how the project could promote capacity development to government agencies to produce project results.
- Based on the project results framework and the relevant GEF Tracking Tool if appropriate, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled.
- Discuss financial reporting procedures and obligations, and arrangements for annual audit.
- Plan and schedule Project Board meetings. Roles and responsibilities of all project organisation structures should be clarified and meetings planned. The first Project Board meeting should be held within the first 12 months following the inception workshop.
- Discuss and review project M+E framework in line with M+E framework of DANIDA.
- Review and discuss about communication strategy and gender mainstreaming strategy of the project.

Quarterly:

- Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform.
- Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Note that for UNDP GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical).
- Based on the information recorded in Atlas, a Project Progress Reports (PPR) can be generated in the Executive Snapshot.

➤ Other ATLAS logs can be used to monitor issues, lessons learned etc... The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

Annually:

➤ Annual Project Review/Project Implementation Reports (APR/PIR): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements.

The APR/PIR includes, but is not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
- Project outputs delivered per project outcome (annual).
- Lesson learned/good practice.
- AWP and other expenditure reports
- Risk and adaptive management
- ATLAS QPR
- Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

Periodic Monitoring through site visits:

UNDP CO and the UNDP RCU will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.

Mid-term of project cycle:

The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation (insert date). The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Center (ERC).

The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

End of Project:

An independent Final Evaluation will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP and GEF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC).

The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

During the last three months, the project team will prepare the Project Terminal Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

Learning and knowledge sharing:

Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation through lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects.

Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

M& E workplan and budget

Type of M&E activity	Responsible Parties	Budget (US\$)	Time frame
			<i>Evaluating project team's timeframe</i>

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Inception Workshop and Report	<ul style="list-style-type: none"> ▪ Project Manager ▪ UNDP CO, FAO Lao PDR, UNDP GEF 	US\$ 8,000	Within first two months of project start up
Measurement of Means of Verification of project results.	<ul style="list-style-type: none"> ▪ UNDP GEF RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members. 	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on <i>output and implementation</i>	<ul style="list-style-type: none"> ▪ Oversight by Project Manager ▪ Project team 	To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	<ul style="list-style-type: none"> ▪ Project manager and team ▪ UNDP CO ▪ UNDP RTA ▪ UNDP EEG ▪ FAO Lao ▪ FAO Rome 	None	Annually
Periodic status/ progress reports	<ul style="list-style-type: none"> ▪ Project manager and team 	None	Quarterly
Mid-term Evaluation	<ul style="list-style-type: none"> ▪ Project manager and team ▪ UNDP CO ▪ UNDP RCU ▪ FAO Rome ▪ FAO Lao PDR ▪ External Consultants (i.e. evaluation team) 	US\$ 40,000	At the mid-point of project implementation.
Final Evaluation	<ul style="list-style-type: none"> ▪ Project manager and team, ▪ UNDP CO ▪ UNDP RCU ▪ FAO Lao ▪ FAO Rome ▪ External Consultants (i.e. evaluation team) 	US\$ 40,000	At least three months before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> ▪ Project manager and team ▪ UNDP CO ▪ FAO Lao ▪ FAO Rome 	None	At least three months before the end of the project

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Audit	<ul style="list-style-type: none"> ▪ local consultant ▪ UNDP CO ▪ FAO Lao ▪ Project manager and team 	US\$ 2,000 per year = US\$12,000	Yearly
Visits to field sites	<ul style="list-style-type: none"> ▪ UNDP CO , FAO Lao ▪ UNDP RCU (as appropriate) ▪ Government representatives 	For GEF supported projects, paid from IA fees and operational budget	Yearly
TOTAL indicative COST Excluding project team staff time and UNDP staff and travel expenses		US\$ (+/- 5% of total budget)	

6. *Legal Context*

Standard text has been inserted in the template. It should be noted that although there is no specific statement on the responsibility for the safety and security of the executing agency in the SBAA and the supplemental provisions, the second paragraph of the inserted text should read in line with the statement as specified in SBAA and the supplemental provision, i.e. "the Parties may agree that an Executing Agency shall assume primary responsibility for execution of a project."

This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA [or other appropriate governing agreement] and all CPAP provisions apply to this document.

Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

- a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

7. *Annexes*

1. Risk Analysis.

2. Agreements

3. Terms of Reference

4. Capacity Assessment

5. National Agricultural and Forestry Research Institute

