ABOUT THIS DOCUMENT

Intended Audience of this Document

1. Policy-makers, planners and senior managers concerned with protected area management.
2. Heads of Provincial Agriculture and Forestry and Provincial Forestry Offices.
3. NBCA Heads and their Deputies.

Purpose of the Document

1. To describe LSFP’s overall approach and strategy to protected area management.
2. To describe the key components of protected area management in Lao PDR.
3. To introduce readers to a variety of methods and tools available for use by NBCA managers and staff.

Explanation of the System

In partnership with the Department of Forestry, the Lao Swedish Forestry Programme (LSFP) has been working in 4 protected areas on the development of a Participatory Protected Area Management System appropriate to the current and future needs of the Lao PDR. The system embodies 3 major components and a variety of methods, tools and case studies which are described in an inter-related series of documents as follows:
Information provided in this Document

- The goals and objectives of protected area management in Lao PDR.
- The legal framework and regulations governing protected areas in the Lao PDR.
- The major components of protected area management in the country.
- End users and target beneficiaries of the system.
- A description of the gender responsiveness of the system.
- The experience gained and major lessons learned in protected area management.

GLOSSARY OF TERMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>BIORAP</td>
<td>Rapid Biodiversity Appraisal</td>
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<tr>
<td>CUZ</td>
<td>Controlled Use Zone</td>
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<tr>
<td>DAFO</td>
<td>District Agriculture and Forestry Office</td>
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<tr>
<td>DFRC</td>
<td>Division of Forest Resource Conservation</td>
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<td>DOF</td>
<td>Department of Forestry</td>
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<td>FIPC</td>
<td>Forest Inventory and Planning Centre</td>
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<td>FOMACOP</td>
<td>Forest Management and Conservation Project</td>
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<td>GOL</td>
<td>Government of Lao PDR</td>
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<tr>
<td>ICAD</td>
<td>Integrated Conservation and Development</td>
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<td>LSFP</td>
<td>Lao Swedish Forestry Programme</td>
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<tr>
<td>LUP</td>
<td>Land Use Planning</td>
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<td>MAF</td>
<td>Ministry of Agriculture and Forestry</td>
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<tr>
<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
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<tr>
<td>MIS</td>
<td>Management Information System</td>
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<tr>
<td>NBCA</td>
<td>National Biodiversity Conservation Area</td>
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<tr>
<td>NTFP</td>
<td>Non Timber Forest Products</td>
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<tr>
<td>PA</td>
<td>Protected Area</td>
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<tr>
<td>PAFO</td>
<td>Provincial Agriculture and Forestry Office</td>
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<tr>
<td>PFO</td>
<td>Provincial Forestry Office</td>
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<tr>
<td>PXH</td>
<td>Phu Xang He</td>
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<tr>
<td>TPZ</td>
<td>Totally Protected Zone</td>
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BACKGROUND AND JUSTIFICATION

Lao PDR is one of the few remaining countries in the region which still maintains a rich endowment of forest resources and biodiversity. Laos takes the management and conservation of its natural resources very seriously and has devoted over a fifth of its total land area to biodiversity conservation under either national, provincial or district management. Quite unlike many other countries, Laos is committed to developing a partnership approach to protected area management with the local people who live in and depend on the natural resources in these areas for their daily livelihoods.

Since the early 1990’s, government policy has emphasised participatory action with villagers to develop sustainable livelihood and conservation strategies through a local partnership approach which strongly advocates people’s involvement in natural resources management and protection. In 1993 the government instituted a protected area system which currently comprises 20 National Biodiversity Conservation Areas (NBCAs) and numerous provincial and district conservation forests. The establishment of this protected area system was merely the start of a long-term process of developing a management system capable of protecting, enhancing and managing these valuable resources on a sustainable basis, for the good of the entire nation.

In partnership with the Department of Forestry, the Lao Swedish Forestry Programme (LSFP) has been working in 4 protected areas on the development of tools, methods and regulatory mechanisms for participatory NBCA management. It should be understood that LSFP’s efforts in this area are merely one contribution to a broader initiative by DoF and other donor programs towards developing a participatory protected area management system for the Lao PDR. Although these various programs have followed diverse approaches and focused on different geographical and technical areas, there is strong general agreement on the need to involve local communities in protected area management. The programmes all have their respective strengths and weaknesses, but their combined efforts have produced a broad base of knowledge and experience, which will be valuable for protected area management in Lao PDR.

In September 2000, LSFP hosted a Participatory NBCA Management Dissemination Workshop in Vientiane which brought together the Heads of all NBCAs, all major donor-funded projects, and many other protected areas stakeholders. The workshop had the objective of consolidating the broad base of knowledge on protected area management and providing a forum for the exchange of information, lessons learned and experience among all key stakeholders. Outputs from the workshop were used to finalise the Manager’s Guide to Protected Area Management in Lao PDR, which describes in detail the methods and tools considered most appropriate for implementing a participatory NBCA management system in the Laos.

Although this document primarily describes LSFP’s experience in protected area management, it also draws on the outputs of the dissemination workshop, and thus represents the combined knowledge and experience of all major stakeholders. Its goal is to assist policy makers and NBCA Heads and their staff who, together with guardian villagers, have a joint responsibility for managing the Country’s protected areas and the valuable resources they contain.

GOAL AND OBJECTIVES OF THE SYSTEM

The Participatory NBCA Management System aims to protect biodiversity values in the Lao PDR. At the same time, it recognises the development needs of both the nation as a whole, and the many Lao men, women and children who are dependent on the natural resource base for their day-to-day livelihoods. It also endorses the rights of all stakeholders to actively participate in making decisions about protected areas, but emphasises that with these rights come responsibilities for protecting and sustainably managing the natural resources they contain. Based on the foregoing, the overall goal of the Participatory NBCA Management System can be defined as:

*Jointly, with guardian villages and other stakeholders, to protect, enhance and manage protected areas and their resources in a sustainable manner, for the good of local people and the Lao Nation as a whole.*
To achieve this goal the system follows 3 distinct but closely related objectives:

1. Stabilising land use patterns in NBCAs through the participatory development of mutually acceptable forest and land use management plans.
2. Reducing the reliance of local communities on the NBCA’s natural resources by the provision of assistance for community development activities.
3. Developing co-management systems with guardian villagers by providing them with a stake in the resources they are being asked to help protect through the development of secure and sustainable resource use systems.

The Participatory NBCA Management System embodies a number of attributes which are considered critical to it successfully achieving these objectives. The system is:

**PARTICIPATORY:** It involves villagers in every step of the process and encourages them to make their own decisions for sustainable natural resource management.

**SIMPLE:** It is purposely simple to ensure access by all sectors of society including all ethnic groups, women and men, the illiterate, and those with little or no education.

**EMPOWERING:** It strengthens community organisation and capability and provides villagers with the skills and tools to solve their own problems and make improved decisions in regard to the sustainable management of natural resources.

**GENDER RESPONSIVE:** It promotes the active participation of women and men in all decisions regarding resource allocation and management by the use of gender disaggregated discussion groups to ensure that both men and women contribute to and benefit from improved natural resources conservation.

**INTER-COMMUNITY:** It promotes inter-village cooperation to solve resource use conflicts and creates linkages among villages to develop broader networks for mutual support and cooperation in both conservation and community development activities.

**HOLISTIC:** It focuses at the level of the entire ecosystem and addresses the key interactions among habitats, wildlife and people in a holistic manner.

**INTERDISCIPLINARY:** It is conducted by stakeholder teams comprising land use planners, conservationists, agriculturists, gender specialists, mass organisations and district officials who work with villagers in an interdisciplinary manner.

**INTEGRATED:** It links conservation with development in an integrated manner through two-way agreements under which villagers are compensated for curtailing certain resource use practices by government assistance with livelihood and community development activities.

**STEPWISE:** It follows a logical sequence of discrete steps with ample time for due consideration of the outcomes and implications by both villagers and NBCA staff.

**ITERATIVE:** As villagers implement activities, follow agreements and adopt new resource management practices, conditions change, new problems emerge and additional lessons are learned requiring that certain steps are repeated in light of the changed circumstances.

**THE LEGAL AND POLICY FRAMEWORK**

In 1993, 18 NBCAs were established by Prime Minister’s Decree 164, with two more being added in 1994 (Dong Phu Viang), and 1997 (Xe Sap). After several years of preparation, a comprehensive Forestry Law was promulgated in 1996, which included a number of clauses relating to NBCA management. Between them, these two legal instruments form the statutory basis for protected area management in Lao PDR.

The provisions of PM 164 confer a high level of protection on NBCAs by naming and defining the boundaries of 18 such sites with multiple protection objectives, and by prohibiting all destructive activities within them. It also provides for legal penalties for infringements and places management responsibility with MAF and the provincial authorities. Detailed regulations governing the use and management of NBCAs have been drafted.
and, after a short period of review, are expected to be promulgated as a Ministerial Decree.

The Forestry Law reaffirms Government’s commitment to participatory management by creating a framework for zoning NBCAs into totally protected (TPZ) and controlled use (CUZ) zones. This is further elaborated by Article 42 which specifies the rights of villagers to utilise the CUZ for a variety of livelihood purposes. Article 63 further provides for the development of local regulations for the management and care of forests, watersheds, wildlife, the natural environment by village authorities. Although not specifically stated, there is the implication that CUZs be jointly managed by villagers with support from the government, while TPZs remain the direct responsibility of NBCA authorities.

Current policy strongly re-emphasises Government’s commitment to a system of devolved co-management of NBCAs, as provided for under the law. Since the early 1990’s, policy has emphasised participatory action with villagers in developing sustainable livelihood and conservation strategies through a local partnership approach which strongly advocates people’s participation in natural resources management and conservation.

SYSTEM COMPONENTS

The Participatory NBCA Management System comprises three major components or methods, each associated with one of the system’s three objectives.

1. Forest and land Use Management Planning: Land use planning is taken as the logical starting point and central core of the system, beginning in a group of a few villages and slowly expanding to form a network of guardian villages who cooperate and assist each other with both conservation and local development activities.

2. Community Development and Extension: Annual shortfalls in subsistence rice, lack of alternative income sources and rapid and uncontrolled population increases are forcing villagers to rely on non-sustainable methods of hunting and forest product extraction to sustain their livelihoods. To help solve these problems, an Integrated Conservation and Development (ICAD) approach which supports farming, livelihood and community strengthening activities is a central component of the system.

3. Conservation Co-management: Conservation activities aim to provide guardian communities with a stake in the resources they are being asked to help protect. Rather than banning extractive activities entirely, the model emphasises sustainable use of resources for both subsistence and income generation. At the same time it develops roles and responsibilities for the villagers who manage these resources.

Although each of the above components is a discrete methodology in its own right, each comprises different steps, methods and tools that are inter-related and help to support each other. Consequently, they should be considered integral parts of the overall Participatory NBCA Management System rather than separate entities. A schematic representation of how they are phased and integrated is shown in Figure 1.

Figure 1. Key steps and phases in the participatory NBCA Management system
Forest and Land Use Management Planning

Forest and land use planning in NBCAs is a process of resource management with the ultimate aim of achieving a secure and sustainable system of land and resource use which meets both conservation and community livelihood needs. The rules, regulations, roles and responsibilities which it embodies are defined in formal agreements developed with communities, ratified by district authorities and monitored and supported on an ongoing basis by NBCA staff. It has the following objectives:

- Stabilising forest and land use patterns under a sustainable management system.
- Ensuring equitable access to forest and land resources for all community members and formalising land use rights within the existing legal framework.
- Establishing resource use and conservation co-management agreements with local communities.
- Developing a partnership between villages and government for the joint management of community development and conservation activities.

Although land use planning in protected areas employs a number of methods and tools which are common to standard LUP procedures, the process varies in a number of important respects. Firstly, it proceeds more slowly than the standard LUP process, and land allocation to individual families only occurs after a prolonged period of trial and review. Secondly, it includes the consideration of biodiversity and conservation values throughout the entire process. It places responsibility for some aspects of conservation management with villagers themselves. Finally, rather than working in one village at a time, it is conducted simultaneously in a number of contiguous villages, which are slowly developed into a community network for cooperative action on conservation and development. It is a phased but iterative process which proceeds through a number of discrete and logical steps as shown in Figure 2.

Figure 2. Participatory forest and land use management planning in NBCAs
Selection of priority villages

To help in the selection of initial LUP target villages, each guardian village is prioritised according to its impact on the NBCA. Location is normally dominant in determining impact, but other factors worthy of consideration include traditional land use practices, land area, population, ethnicity and forest dependency. As shown in Figure 3, villages are grouped into four classes, and if all other factors are equal for all villages, highest priority is given to type I, proceeding through types II, III to IV, respectively.

Figure 3. Classification of NBCA guardian villages into 4 categories NBCA boundary
Information gathering, boundary delineation and forest and land use zoning

Land use planning begins simultaneously in a small group of 3-4 adjacent villages with an orientation meeting, involving all the villages, to explain the process, its objectives and what it will mean for the communities involved. Securing the active engagement of women in the discussions and their input to all decisions is essential in this early phase to ensure their continued involvement throughout later stages of the process. Women’s participation is promoted by using a variety of simple tools such as gender dis-aggregated discussion groups, NTFP analysis, women’s problem group meetings, etc.

Baseline data on socio-economics, NTFP use, hunting, and wildlife is collected during this phase and used to identify, jointly with villagers, the major problems facing each community with the aim of developing a shared understanding of livelihood systems and their impact on protected area resources. Key problems are then analysed with the villagers, and plans for solving them are jointly developed.

Next, the boundaries of each village are jointly surveyed and mapped. The intervillage boundary conflicts commonly identified at this time must be completely resolved to ensure that later steps will proceed smoothly. Once boundaries are agreed to, all existing forest and land use zones in each village are surveyed and mapped with villagers. The zones are then compared with community needs through discussions with both village men and women to ensure that multiple-use considerations, such as access to NTFPs, are adequately covered. Opportunities for establishing additional zones, new forest types or changing the status of existing zones to enhance conservation values are also explored at this stage.

The development of draft forest and land use and conservation agreements is based initially on existing traditional rules which, through discussion with villagers, are fleshed out, tightened and improved upon. Emphasis here is placed on obtaining agreements which are practical and workable, even if they are not entirely optimal from a conservation standpoint. Draft agreements are not formalised with the district at this stage, but merely lay the basis for a period of trial to assess their viability.

Follow-up and networking support

Draft land use and conservation agreements are tested for a period of at least one year to assess their resilience to the annual cycle of resource use in the villages. During this period of testing, a variety of follow-up and support activities are initiated.

<table>
<thead>
<tr>
<th>Type</th>
<th>Enclave villages</th>
<th>Straddle villages</th>
<th>Adjacent villages</th>
<th>External villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>The settlement and village-use land fall entirely within the NBCA boundary.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>The settlement area is usually outside the NBCA but some village-use land falls within it.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>The settlement area and village-use land border the NBCA but do not encroach into it.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Villages and their land-use are external to the NBCA boundary, but their activities still impact on it.</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
Firstly, as testing continues in the initial group of villages, the process is slowly expanded through other adjacent communities. This process links and coordinates the efforts of all villages and, over time, integrates them into a community network of guardian villages who, with the assistance of district NBCA staff, cooperate and help each other in both resource conservation and livelihood development activities.

This networking approach has a number of advantages:

- It enables new villages to learn from other communities who have more experience of the process.
- The network has the authority to deal with infringements of one village’s regulations by villagers from another community in the network.
- By linking villages to a common cause, it empowers the network to resist threats from external sources which might be beyond the capacity of any single village on its own.
- Development initiatives can be shared and replicated through the network.
- It allows the incorporation of macro-level conservation considerations such as maintaining contiguous forest cover across a number of villages in order to maintain certain habitat types or to serve as animal migration corridors, etc.

Livelihood development activities to solve the key problems identified earlier are introduced while agreements are being tested. This helps to demonstrate a government commitment to assisting villagers in return for the traditional activities they were willing to forego under the conservation agreements. Livelihood development activities are described in detail in a later section, as are the co-management conservation activities which are also introduced at this stage.

Effective monitoring of the draft land use and conservation agreements is essential during the testing phase. This is done through regular meetings of the community network, attended and supported by NBCA and district staff. This helps to (I) solve inter-village problems, (II) share ideas on solving specific problems, (III) exchange experiences among villages, and (IV) strengthen the network. As agreements are jointly reviewed in this manner, any necessary changes are made to them and these modifications are then tested for a further period.

**Ratification of agreements and land allocation**

Once draft agreements have been shown to work satisfactorily, and villages can demonstrate that they are being followed and adhered to, they are ratified by the district authorities. It is only at this stage that formal land allocation begins. This entails surveying individual family land plots, comparing their productive potential with family subsistence needs, making any necessary redistribution among families and issuing land-use-right certificates to each household.

**Information management and on-going support**

The LUP process does not end with land allocation. The agreements are monitored and follow up support is provided to communities on an on-going basis. All data collected during the LUP process are collated and periodically updated as part of an NBCA management information system (MIS) which comprises the following major components:

1. Socio-economic information
2. Wildlife, habitat and NTFP information
3. Land use and conservation agreements
4. Maps and spatial data
5. Land allocation records
6. NBCA management plans

**Integrated Conservation and Development**

Integrated conservation and development (ICAD) is increasingly being used as a key component in participatory protected area management throughout the world. It is considered particularly appropriate for Lao PDR given the country’s commitment to a partnership approach with local communities for the co-management of protected area resources.

ICAD is not merely the provision of community development activities *per se*. Rather, it is assistance targeted at those problems which are forcing guardian village families into destructive and non-sustainable use of NBCA resources. Villages situated in and around NBCAs are among the poorest in the country due to their remote location and the rugged and difficult terrain in which they are usually located. Most families have no regular income and rely entirely on what they can grow or collect. Consequently, in times of crop failure, illness in the
family, marriage or the need to buy school books they turn to the protected area as a source of food and income.

The rationale for helping villagers with community development within an ICAD framework embodies three closely related objectives. Firstly, by helping guardian communities solve their key economic and livelihood problems, their dependence on destructive and non-sustainable extraction of resources from protected areas can be reduced. Secondly, participatory protected area management is a two-way agreement between villagers and government. In the process, villagers are asked to forego some of their traditional rights and assist with conservation activities. By compensating them with help for their development needs, government is demonstrating to villagers a commitment to their half of the agreement. Finally, through the process of livelihood development, communities become better organised and are strengthened and empowered to better manage their own affairs and development needs. This helps prepare them for the task of participatory conservation management which is more likely to succeed in cohesive, well-organised communities comprising capable people.

The ICAD process is in many ways similar to the LSFP full cycle extension system. It involves a number of sequential steps, including problem identification and analysis, activity planning, implementation and evaluation. The sequence of the steps and how they relate to each other in the overall village livelihood and community development process is summarised in Figure 4.

**Figure 4. Key steps in the integrated conservation and development process**

- **Problem identification and analysis**
  - Problems are identified jointly with villagers using problem census and rapid appraisal techniques with gender disaggregated villager groups to ensure that the key problems as perceived by both men and women are adequately covered. The problems are then prioritised using participatory ranking tools and the key problems are jointly analysed with villagers. Participatory problem analysis provides a number of benefits:
    - Villagers better understand the causes of their problems and begin to realise that solutions are within their reach.
    - Analysis helps to show the villagers how many of the problems they face on a daily basis are related to the degradation of natural resources in the NBCA.
    - The continuing involvement of villagers gives them a greater sense of ‘ownership’ of the solutions which
will eventually emerge from the process. 
- Men and women are empowered as they help each other understand the causes of the problems they face and as they begin to identify solutions to them.

The eventual output of problem identification and analysis is a set of proposed livelihood development activities which address the key problems facing each village.

**Planning development activities**

Planning ICAD activities involves working with villagers to (I) define the major objectives of the activity, (II) describe the expected outputs, (III) agree on the key implementation steps, and (IV) develop an overall plan including budgets, responsibilities and monitoring schedules.

Selecting development activities which simultaneously improve quality of life in guardian villages and also have a positive effect on conservation in the protected area is the key to successful planning. Although certainly important, the potential impact on the protected area is not the only criterion which is considered when selecting projects for implementation. Proposed projects are also screened according to a number of other criteria as follows:

- Address priority problems and needs as identified by the villagers themselves.
- Focus primarily on those problems that are forcing families into destructive patterns of resource use in the NBCA.
- Focus on the poorest of the poor or those families doing most damage to the protected area.
- Have a clear and demonstrable positive effect on resource conservation.
- Be cheap, simple to implement and give significant benefits with rapid results.

**Implementation**

Some projects can be implemented by villagers themselves using local materials and expertise; others require support from the NBCA authorities or even specialist expertise, specific materials or additional funding from an external source. Such specialist services are obtained by developing partnerships with other projects or government agencies.

The guardian village networks, described earlier, are also used for the implementation of community development activities. It is intended that, as the networks develop, they will play an increasing role in both conservation management and in the replication of development activities throughout all member communities. By this means, government support for development can be tied to conservation responsibilities and an incentive provided for communities to develop and strengthen the network which serves both development needs and conservation imperatives.

**Evaluation**

Evaluation of extension activities is conducted jointly with participating communities to determine their subsistence, economic and livelihood benefits. During this process, the ideas of villagers are sought in regard to improving the performance of the activities and to expanding the benefits to other households and villages.

During the evaluation process an attempt is also made to assess the impact of activities in three key areas. Firstly, the socio-economic impact on women, the poor and other disadvantaged groups is assessed and ameliorative action taken where necessary. Secondly, the agro-ecological impact on land use patterns, forest habitat quality and wildlife populations is assessed and acted upon, where appropriate. Finally, the impact of the development activities on the community commitment to co-management and their sense of responsibility towards conservation generally, is evaluated.

**Participatory Conservation Co-Management**

Government’s acceptance of the rights of communities to reside in protected areas, its recognition of the rights of communities to sustainable resource use in these areas and its commitment to devolved planning and participatory action with villagers, creates a unique opportunity for the development of effective systems of conservation comanagement in the Lao PDR. Indeed, given the resources and staff currently available to NBCAs, the assistance of guardian communities in co-management is essential if conservation is to be at all effective.
Under the Participatory NBCA Management System, co-management is defined as a joint responsibility for managing conservation among villagers, district officials and NBCA authorities, all of whom are key stakeholders in the natural resource base. It involves providing guardian communities with adequate incentives and a commensurate stake in the benefits of natural resources conservation. Such incentives are provided in a number of ways:

- The provision of secure and equitable land-use rights within NBCAs.
- The provision of assistance for livelihood development activities in return for community participation in conservation management.
- Support for sustainable harvesting activities in NBCAs to give guardian villagers an economic stake in the protected area's resources.
- The development of community-based eco-tourism or other activities from which villagers receive an equitable share of the economic benefits.
- Remuneration or some other form of tangible benefits to communities or Village Forestry Volunteers for their work on co-management activities.

Co-management comprises 4 inter-related components:

2. Wildlife and habitat surveys.
3. Patrolling and the monitoring of impacts on the protected area.
4. A system for the collation, storage and management of protected area information.

Conservation education and awareness

Conservation education has 3 major objectives:

1. To promote community awareness of the importance of conservation and its relationship to sustainable resource use within local livelihood systems.
2. To increase villagers' appreciation of how they will benefit from conservation.
3. To improve community understanding of their roles and responsibilities in participatory conservation co-management.

Because the majority of guardian villagers rely heavily on the natural resource base for their livelihood needs, they are usually well aware of the importance of conservation. Thus, education programs are aimed more at increasing awareness of alternatives, rather than explaining why current practices are bad for the environment. A number of tools, methods and materials are used to achieve this, including: (I) printed materials such as hand-outs, brochures and posters; (II) audio-visuals such as lectures and videos; and (III) a variety of other means such as reading books, songs and competitions.

Wildlife and habitat surveys

Comparatively speaking, very little is known about habitats and wildlife in protected areas in Lao PDR, and unfortunately, inventory work usually requires considerable expertise which has yet to be developed in NBCA staff. Consequently, current co-management systems rely heavily on obtaining this information from guardian villagers who have extensive and valuable local knowledge about wildlife and their habitats.

This participatory survey system is based on a method called BIORAP, pioneered by FOMACOP, to identify and classify habitat types based on the local knowledge and the indigenous terms used by guardian villagers. Essentially, the tool describes and maps local habitats which allows wildlife sightings and other data obtained from villagers to be conveniently monitored and recorded. Computerised data storage systems for BIORAP information have been developed and are available for use in Lao language format.

Monitoring impacts and patrolling

Negative impacts on protected areas are monitored in two ways. Firstly, through reports received from villagers, district staff or other stakeholders, and secondly, by patrolling. Patrolling has 3 major functions: (I) gathering information, (II) showing a presence in the protected area and (III) enforcing the law. Under participatory co-management, law enforcement by government staff is low key and is instead promoted as a village network responsibility. Only when impacts are serious, or are caused by powerful external elements, do NBCA and district authorities play a role in policing.

Protected area management information systems
Management information systems (MIS) have been developed for the storage and analysis of a variety of data sets, allowing the information to be tracked for monitoring purposes (Table 1). Protected area MIS are essential for the effective monitoring of management effort and the results it produces in terms of the protection of biodiversity values. As such, they are a central component of the participatory NBCA management monitoring system.

Table 1. Protected area management information system data sets

<table>
<thead>
<tr>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel</td>
<td>Staff records, job descriptions, attendance logs, field work, etc.</td>
</tr>
<tr>
<td>Equipment</td>
<td>Vehicle logs, maintenance schedules, equipment inventory, equipment loan records, etc.</td>
</tr>
<tr>
<td>Socio-economic</td>
<td>Village data, population, education, family size, income, farm size, crop yields, livestock, fisheries, etc.</td>
</tr>
<tr>
<td>Problem census</td>
<td>Problem types, priority lists, proposed solutions, etc.</td>
</tr>
<tr>
<td>Land use</td>
<td>Village boundaries, forest zones, parcel records, agreements, etc.</td>
</tr>
<tr>
<td>Spatial data</td>
<td>Maps of village boundaries, forest and land use zones, habitat types, wildlife sightings, etc.</td>
</tr>
<tr>
<td>NTFP use</td>
<td>Types, importance, location, harvest methods, abundance, etc.</td>
</tr>
<tr>
<td>Wildlife use</td>
<td>Species, importance, locations, abundance, hunting methods, etc.</td>
</tr>
<tr>
<td>Habitat/wildlife</td>
<td>Habitat types, areas, locations, local names, descriptions, etc.</td>
</tr>
<tr>
<td>Impacts</td>
<td>Type, dates, location, extent, incident reports, action, results, etc.</td>
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MAJOR LESSONS LEARNED

Forest and Land Use Management Planning

1. **Inter-village boundary conflicts** will invariably emerge in the early stages of land use planning when it is conducted jointly in a number of villages together. Experience has shown that it is important to resolve such conflicts early in the LUP process in order to avoid problems down the line and to lay a sound foundation for village network development at a later stage. Any other conflicts over such issues as water, forest, NTFP use, etc. must also be dealt with at this stage. This further demonstrates the value of conducting LUP simultaneously with a small group of villages so as to identify and deal with these conflicts in a timely fashion.

2. Because **NBCA boundaries** were defined solely on the basis of 1:100,000 scale maps without reference to the field situation, numerous conflicts with actual land use are always discovered during land use planning. During the LUP process, the NBCA boundary should be jointly reviewed with villagers and an assessment made of its appropriateness. Proposals for its revision should be mapped and recorded with the eventual aim of re-defining the entire NBCA boundary once LUP has been completed in all guardian villages. Experience suggests that proposed additions or excisions to any NBCA should be based on the results of local land use planning, and that the changes should only be gazetted after LUP has been completed in all the villages concerned.

3. Under the law, provision is made for the **zoning of NBCAs** into Totally Protected Zones (TPZ) and Controlled Use Zones (CUZ). These zones are impractical and rarely used in the field, and experience indicates that such a zoning system is inappropriate for use in the field. A more practical and useful system of zonation would be one based on the 5 forest categories provided for under the Forestry Law. Under such a system, the majority of the land area in NBCAs would fall within the Conservation Forest land category which is considered entirely compatible with conservation management needs. If this recommendation is followed, the draft NBCA regulations, which are currently based on the old system, will have to be amended accordingly.

4. If conservation issues are to be adequately incorporated into land use planning agreements, locally specific **wildlife and habitat information** must be available during LUP. A major land use planning objective in the corridor zone of PXH to maintain a contiguous forest habitat for wildlife migration between the Phu Xang He and Phu Hinno mountains was frustrated by the lack of information on the important species involved and the extent and type of corridor habitat they would require. The important lesson here is that wildlife/habitat survey
and LUP activities need to be coordinated and work in parallel in commonly agreed-to target areas.

5. It is too much to expect fully workable land use and conservation agreements from the first iteration of the LUP process. The aim should be more to raise and discuss the key issues with villagers and obtain initial draft agreements for a period of trial implementation, and later review and modification. LUP agreements developed and ratified in a single cycle have tended to be rather one-sided, with villagers stating what they will or will not do, but with no parallel commitment from government. The lesson here is the need for developing better balanced, two-way, commitments which clearly lay out both community and government responsibilities and which also link future government support to the community fulfilling their land use and conservation responsibilities.

6. The approach to gender mainstreaming in NBCA forest and land use planning has proved highly successful. By incorporating gender considerations, a more holistic assessment of resource use and human impacts on the eco-system is obtained. The use of gender dis-aggregated discussion groups promotes the consideration of issues such as the effects of population growth, women-specific resource utilisation problems, NTFP use, women’s attitudes to hunting, etc. and ensures that they are adequately incorporated within conservation and land use agreements. Potential for further improvement in this regard is constrained by the very low female to male ratios currently found in NBCA staff. By working primarily with guardian villagers, the Participatory NBCA Management System removes many of the hardships associated with NBCA field work, and the active recruitment of female staff to NBCAs should be considered as a policy priority within DoF.

7. Experience gained during the development of the Participatory NBCA Management System has shown that individual communities have insufficient authority to effectively control land-use and conservation agreement infringements when they involve people from other villages or, in particular, complete outsiders. Developing strong inter-community networks is seen as a valuable means of empowering guardian communities to give them sufficient collective authority to be able to effectively protect natural resources. Network formation is essentially an exercise in community organisation and empowerment, which is why it is so strongly emphasised in participatory NBCA management.

8. Following the development and testing of workable land use and conservation agreements, formal land allocation occurs to demonstrate government’s commitment to the agreements. Land allocation involves issuing permissive occupancy rights defined within a temporary land use certificate for each household’s agricultural land. Whether these documents will be able to be upgraded at a future date into some form of more permanent tenure, still remains to be decided. Questions remain as to what form of user-rights document is most appropriate for land within NBCAs and whether such rights should be given to individual households or issued to the community as a whole. In line with the Participatory NBCA Management System’s goal of developing a collective community responsibility for resource conservation, consideration might be given to issuing land use documents at the community level and putting the responsibility for the equitable distribution of agricultural land within the community in their own hands. By this means, land purchases by outsiders with possible environmentally unfriendly motives will be controlled. Consideration might also be given to issuing some form of formal title to the community for the various forest zones, for which they have a management responsibility, to reinforce their sense of ownership.

Integrated Conservation and Development

1. Worldwide, integrated conservation and development has had its fair share of failures, and unfortunately, it now has a bad name with some donors. However, due to GoL’s acceptance of the rights of communities to reside in protected areas, a recognition of community rights to sustainable resource use in these areas, and a policy emphasis on devolved planning, the Lao PDR offers a quite unique opportunity for successfully integrating conservation and development. The reasons for the significant success of a number ICAD activities in Lao PDR should be analysed and documented as case studies, as lessons for a worldwide audience.

2. The timing of ICAD activities is vitally important. They should be introduced at the same time that land use and conservation agreements are being developed with villagers. This demonstrates government’s role in the two-way agreements and shows a commitment to compensating villagers for the traditional activities they were willing to forego under the agreements.

3. It is important to understand that ICAD is not merely the provision of community development per se. ICAD is targeted assistance, aimed at solving those problems which are forcing guardian village families into destructive and non-sustainable resource use. Activities must have strong links with conservation but, at the same time, address priority problems and needs as identified by the villagers themselves. To be effective, they should also focus on the poorest of the poor or those families doing most damage to protected area resources. This poverty and forest-resource-reliance focus is promoted in the Participatory NBCA Management system by the use of tools such as wealth ranking, forest dependency ranking and gender dis-aggregated discussion
4. The very rapid **population growth** rates common in virtually all NBCA guardian villages throughout the country is putting increasing pressure on the resource base. Traditional hunting and gathering activities which were previously sustainable are now exceeding sustainable levels due to increasing population numbers. This issue is commonly raised by women during problem analysis in connection with health and workload problems. As a consequence, family planning programs offering information and advice are a central component of ICAD under the participatory NBCA Management System.

5. An all-too-often overlooked benefit of ICAD is its effect on **capacity-building and empowerment**. Through the process of livelihood development, ICAD increases capacity in guardian communities, which become better organised and empowered to manage their own affairs and development needs. This helps prepare them for the task of participatory conservation management which is more likely to succeed in cohesive, well-organised communities comprising capable people. Part of this empowerment process involves instilling villagers with a sense of ownership for the development activities they undertake. This is best achieved by involving villagers in all aspects of activity planning and implementation, and also by requiring them to contribute labour, material and even funding for the activities.

6. Some ICAD projects can be implemented by villagers themselves, others need the support of NBCA authorities, while yet others require specialist assistance from another source. The Participatory NBCA Management System emphasises the establishment of **development partnerships** with relevant government agencies or other projects or programs to obtain assistance in these areas. To develop such partnerships, NBCA Heads will require coordination and networking skills and sufficient standing in the development community to be able to approach other agencies for necessary assistance.

7. If done properly, **eco-tourism** has a high potential as an integrated conservation and development activity in the Lao PDR. Community-based nature tourism increases family incomes through the sale of produce, handicrafts and food, and the provision of accommodation, guide services, etc. At the same time, it demonstrates to villagers the value and importance of the protected area and gives them a vested interest in conserving these resources to maintain their source of income from eco-tourism. It can target hunters or the poorest of the poor as guides and is also gender focused; as it provides equitable opportunities for women to benefit through handicraft production and working as guides, cooks and cleaners.

8. The **community networks** developed under the Participatory NBCA Management System are also an extremely valuable tool for the expansion and replication of community development activities. As promising activities are identified, the network can be used to expand them to other villages. Eco-tourism, in particular, represents an activity which could be managed by the network by rotating tours around member villages, not only to spread the benefits, but also to reduce any negative impacts from the over-reliance of any individual village on eco-tourism.

9. The Participatory NBCA Management System makes full use of **community study tours** as a tool for ICAD. Cross visits, either to villages within the community network or further afield to other projects and programs, is used not only to replicate existing ICAD activities to other villages, but also to introduce ideas for new activities which have been pioneered elsewhere.

**Participatory Conservation Co-Management**

1. The development of a successful system of participatory NBCA management requires that both guardian communities and government take on appropriate and clearly defined roles and responsibilities for conservation and protection. In respect to **monitoring conservation agreements**, it is important that guardian communities, rather than local government, play the lead role in policing the agreements. If local government is to be perceived by villagers as an equal partner in co-management efforts, it should not have responsibility for enforcing the agreements, nor for imposing penalties for their infringement. While local government should be available to support community action in this respect, it should only step in at the request of the villages involved.

2. Conventional approaches to protected area management tend to assume that local people are the biggest threat to biodiversity conservation. Although subsistence-based hunting and gathering activities by local communities still have negative impacts on the natural resource base, participatory co-management is beginning to reduce these. However, there is a growing body of evidence to suggest that the most serious threats to both habitat degradation and wildlife destruction are now coming from **external pressures** and these can be expected to increase in the future. Empowering guardian villages to become effective partners with government in the fight against these more serious and insidious external threats is a major objective of the participatory NBCA management system.
3. If participatory conservation is to work, it is important that guardian communities are given a commensurate stake in the resources which they are being asked to protect. Such incentives might include secure land tenure rights, land tax concessions, assistance for community development, stipends for VFV’s, use of fines for village development and sustainable harvesting systems for NTFPs. Community forestry activities, in selected areas and under special provisions, might even be considered in NBCAs in order to give guardian communities a stake in conserving the area’s most valuable resource, its timber.

4. Community-based nature-tourism provides such incentives for conservation comanagement activities in two ways. Firstly, it generates income that can be used for paying stipends to VFV’s or for funding other comanagement activities. Secondly, it indirectly supports patrolling by the villagers who act as guides for tourist treks through the protected area.

5. Considerable investment in training for NBCA staff in patrolling and survey techniques has been made by LSFP and other projects in Lao PDR. Unfortunately, skills in this area are low in most NBCAs in the country and will remain so in the short to medium term. Until staff skills are upgraded and experience and confidence is gained, emphasis should be placed on obtaining wildlife and habitat monitoring information from villagers. Not only is this more cost effective in the use of staff time, villagers are generally better able to recognise and interpret the evidence of wildlife.

6. There is currently a rapid turnover rate in NBCA staff nationwide. After being trained, staff are frequently moved to other positions, often entirely unrelated to conservation and protected area management. If patrolling skills are to be upgraded and investment in such training is to be cost effective, two major reforms are required. Firstly, NBCA staff recruitment procedures need to be reviewed and modified to attract people with a genuine interest in, and a commitment, to conservation. This should also include efforts to recruit more women who, in many cases, are more likely to have the desired qualities than men. Secondly, there is a need for a commitment by government to retain dedicated staff in NBCA management positions and to reward service with a career-based promotion system with adequate incentives and opportunities for staff advancement within the protected area system.

OWNERSHIP OF THE SYSTEM

System Development

As stated earlier, development of the participatory NBCA management system has been a broad-based initiative by DoF in partnership with the Lao Swedish Forestry Programme and many other donor programs. As such, LSFP’s efforts in this area are merely one contribution to the overall goal of developing a participatory protected area management system for the Lao PDR. The LSFP Dissemination Workshop held in September 2000 brought together all protected area stakeholders with the objective of consolidating this broad base of knowledge and experience into a system appropriate for NBCA management in the Lao PDR.

The overall system has thus been developed in close association with protected area staff from the national (DFRC), provincial and district levels. As a result, it is within the capabilities of protected area managers and district staff and is relevant to the day-to-day demands they face in their normal work.

Development within LSFP has taken place entirely within the current government administrative system. As a consequence, the system is capable of being sustained within existing government structures following completion of the Project.

End Users and Target Beneficiaries

The Participatory NBCA Management System has been designed for use by NBCA Heads and NBCA staff at the provincial and district levels. While it puts protected area management primarily in the hands of NBCA staff and villagers, it is also supported by central and provincial levels through a system of devolved responsibilities, as follows:

National Level: DFRC has responsibility for communicating national policy guidelines to NBCA managers and providing specialist technical advice in support of the needs of field level staff.

Provincial Level: NBCA Heads have responsibility for coordinating activities at the level of the NBCA and for providing general technical and management support to district level staff.
**District Level:** DAFO Staff have responsibility for day-to-day protected area planning, management and monitoring, and for participatory conservation activities with NBCA guardian communities and Village Forestry Volunteers.

**Village Level:** In conjunction with NBCA district staff, Village Forestry Volunteers and guardian villagers have responsibility for the management of the parts of the NBCA over which they exercise customary rights.

The system supports the decentralisation of authority to the local level by:

- Utilising a bottom-up planning process whereby local communities are actively involved in the design and implementation of conservation activities.
- Providing local communities with an economic stake in the natural resources and thus an incentive for their sustainable management.
- Placing responsibility for day-to-day NBCA management primarily in the hands of district staff and villagers.
- Allowing national and provincial level staff to perform mainly a support and advisory function for district staff rather than a supervisory role.

**GENDER RESPONSIVENESS**

Protected area management in Lao PDR has an extremely poor staff gender balance. Although this is undoubtedly due in part to the nature of protected area fieldwork, it probably also reflects a certain level of gender bias in the appointment of NBCA staff. Parallel to this situation, it is now recognised that gender roles and perceptions in natural resources utilisation and management vary widely and offer unique opportunities for gender-oriented interventions. To overcome these inherent contradictions, the NBCA management model emphasises gender as a major component and incorporates a number of gender responsive features:

- The early stages of the system development work was conducted jointly with LSFP’s Gender and Development Unit, which provided guidance on mainstreaming gender issues in the system.
- A gender focal person with responsibility for bringing gender considerations into the mainstream of conservation management has been actively involved throughout the system development process.
- Wherever possible, gender dis-aggregated data are collected and needs assessments and problem identification exercises are conducted with separate male and female groups.
- The system incorporates a Management Information System with gender disaggregated databases for guardian village statistics.
- The livelihood development component of the system targets both men and women as beneficiaries in an equitable manner.
- Family planning awareness and support activities are included in the system’s community development activities.
- The management and development of the predominantly female activity of NTFP collection is specifically targeted in the system.
- The system comprises a number of methods which target women’s attitudes to hunting to assist in the regulation of this predominantly male activity.

**SUSTAINABILITY AND AFFORDABILITY OF THE SYSTEM**

The Participatory NBCA Management System has a number of attributes that promote its sustainability.

Firstly, it was developed under the prevailing government administrative system and can thus be sustained within the existing bureaucracy without requiring any special organisational structures which, as often happens, are lost when donor funded projects come to an end. The system was designed in close collaboration with NBCA Heads with the aim of helping them deal with the day-to-day demands of their jobs. As such, the future development and further refinement of the system is in their hands and will thus be user-oriented and demand-driven.

The limited numbers of NBCA staff that government can afford to assign to conservation obviously raises concerns in regard to the sustainable use of the system in the future. However, its participatory nature, which augments government staff effort with partnership activities with guardian villagers, goes a long way to ensuring its future sustainability.
Similarly, government funding resources for conservation are extremely limited, but the great majority of the system’s methods and tools are very cheap to use, with often the only funding requirement being staff time and per diems. In those cases where additional budget is required, such as for integrated conservation and development activities, the system emphasises a coordination and partnership approach with other projects, programs and agencies which do have the required development resources.

Perhaps the most important attribute which enhances the system’s sustainability is its simplicity. Although system development will be an ongoing process, its simple and iterative nature means that changes can be made by the end-users themselves in response to new situations and changing conditions. This adaptability greatly increases its resilience to change, thus significantly enhancing its sustainability.

**ADDITIONAL SUPPORTING DOCUMENTATION**

**General**

Anon., (2000). A Manager’s Guide to Protected Area Management in Lao PDR. Division of Forest Resource Conservation, Department of Forestry, Lao PDR.


**Land Use Planning for NBCAs**


**Integrated Conservation and Development**

Craig, I.A. (1999). Survey on the Potential for Community-based Eco-Tourism in Phu Xang He NBCA. Lao Swedish Forestry Programme, Department of Forestry, Lao PDR.


**Participatory Conservation Co-Management**


