Lao People’s Democratic Republic
Peace Independence Democracy Unity Prosperity

Ministry of Agriculture and Forestry
Department of Forestry

TECHNICAL REPORT
Evaluation of
Joint Forest Management Pilot Models 1 and 2
(1994-2000)

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Abbreviations, Acronyms and Currency Rates

AAC Annual Allowable Cut
CTA Chief Technical Advisor
DAFO District Agriculture and Forestry Office
DK Dong Kapho
DOF Department of Forestry
Acknowledgements

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The Evaluation Team Members

1. EXECUTIVE SUMMARY

Introduction

LSFP Joint Forest Management

The Lao-Swedish Forestry Programme (LSFP), Phase IV has been supported by the Government of Lao (GOL), through the Ministry of Agriculture and Forestry (MAF) and the Department of Forestry (DOF), and the Swedish International Development Agency. Since 1994, LSFP has provided support to the Forestry Research Centre (FRC) to develop two pilot model approaches to participatory forest management in production forests. These pilots are referred to the Joint Forest Management Model 1 and Model 2. The JFM pilot is being applied to the management of Dong Kapho Forest in eastern Savannekhet Province. It is working with 15 villages, which have a population of 5,500 people, and covers an area of 25,000 ha. These villages are located in three Districts: Xonbury (2 villages), Phine (5 villages), and Phalansay (8 villages).

Dong Kapho is being managed in accordance with a 50-year sustainable forest management plan, which covers 9,600 ha of natural forest, of which 5,900 ha. is being managed for production. The sustainable forest management plan has 3 objectives: (1) sustained yield production of valuable timber and non-timber forest products; (2) maintenance of the ecological, conservation and production capacity of the forest; and (3) involvement of the local people in the management.

JFM Model 1 and Model 2 Concepts

The Joint Forest Management test has four objectives: (1) to develop and implement a partnership between
the villages and the state for the management of Dong Kapho SPF with Villages located around the forest; (2) to implement participatory village land-use planning and land and forest allocation in villages located around Dong Kapho State Production Forest; (3) to develop and implement participatory village forests planning and management in villages located around Dong Kapho State Production Forest; and (4) to facilitate integrated village development in villages around Dong Kapho State Production Forest.

The Joint Forest Management pilot promotes sustainable forest management and improvement of rural living standards through close collaboration of villagers and government forestry field staff in participatory forest management. In 1992-93, central government staff at the National Office of Forest Inventory and Planning (NOFIP, now renamed the Forest Inventory and Planning Centre, FIPC) prepared a long-term 50-year management plan for Dong Kapho Forest. Two different arrangements for participation of villagers in the management activities are being tested. The aim was to test two approaches, then evaluate the results and decide which approach should be continued. JFM Model 1 is being tested in the NE block of the forest, whereas JFM Model 2 is being tested in the NW and S blocks.

In JFM Model 1, the village of Nathong has a management contract for a section of the forest, to manage this area in accordance with the approved management plan. In exchange for these management services, villagers are authorised to keep the net profits (benefits) from timber sales, after paying the government royalties, taxes, and other fees, as well as labour costs (whether for contracted log transport, or village forest management activities). The villagers have agreed to pay PAFO and DAFO field staff their field (food and fuel) allowances when the government staff work with the villagers on forest management activities. The remaining village benefits are used to finance village development projects, for the benefit of all village residents.

In JFM Model 2, the Provincial Agriculture and Forestry Office (PAFO) has been designated as the forest manager. Each year PAFO contracts villagers from 2 of the 14 villages to undertake logging, skid trail clearing, nursery, and enrichment planting activities. Beginning in 1998/99, the contracts were modified to specify that all 14 villages would receive some funding every year for forest protection efforts.

Pilot Model Implementation

Systems Guidelines, Manuals and Training Programmes

The Joint Forest Management activities have been supported through the development of systems guidelines and manuals, and training courses provided through various sources. The JFM test is part of the overall Lao-Swedish Forestry Programme, and has received support from different LSFP sub-programmes, including those supporting forest inventory, forestry research, land use planning and allocation, and extension.

FRC, working in collaboration with NOFIP, LSFP, and other organisations, has provided training in forest management planning, inventory techniques and mapping, and land use planning. LSFP has provided training in extension techniques, including gender issues, computer calculation of cutting regimes, and annual staff work planning. The Regional Community Forestry Training Centre (RECOFTC), Bangkok, provided training in development of a model village forest plan for 1 village. JFM had a long-term technical advisor for 3 years, through early 1999, who provided additional training in these topics, as well as on-the-job training. This advisor, for example, worked closely with 2 PAFO and 4 DAFO staff in preparing the second medium-term (5-year) management plan for Dong Kapho SPF. Some training for staff and villagers has been conducted at the Xepone regional training centre in Savannakhet, whereas other training has been conducted in the offices, villages, or within Dong Kapho SP Forest. For example, villagers received training in manual tree felling techniques, both at Xepone and within the forest. Some special studies have been conducted, such as testing the feasibility of using a small portable sawmill to make use of tree tops, branches, and stumps not currently marketed.

Systems manuals, guidelines and procedures have been developed for a number of activities, including participatory land use planning and land allocation, data collection for rapid nontimber forest product assessment, participatory village forest assessment and planning, tree marking, and management inventory, pre-logging surveys, tree marking, timber sales, and use of the computer programmes developed for forest management. As part of the LSFP model consolidation phase, all relevant training and systems materials have been consolidated for future reference and guidance.

Village Organisation
The organisation of villagers to participate in JFM activities has differed between the two models. Model 1 is being tested in a large village, Nathong, which has over 1000 inhabitants organised into seven *nouay*. The original approach was to establish Joint Forest Management Association (JFMA), comprised of two representatives (one woman and one man) from each household in the village. The JFMA activities have been managed by a JFM Board. The JFMA has had responsibilities for administration of the forest management activities (logging, forest protection). Over time, the JFM Board has become integrated into the normal village administration structure, so it no longer exists as a separate entity.

In Model 2, each village was asked to form a Village Resources Management and Development Committee (VRMDC), which is part of the overall village administration. The committee has responsibility for management of the activities undertaken for logging and forest protection, as well as the village development fund (forest protection fee). The participation of the 14 villages varies each year according to the forest management plan and the compartments to be logged: each year one village in Dong Kapho South and one in Dong Kapho North West has logging rights.

**Participatory Forest Management**

The Dong Kapho long-term forest management plan was prepared by NOFIP, which undertook the forest inventories and prepared the 50-year management plan and the initial 5-year plan. The field staff has responsibility for preparation of the subsequent 5-year plans, and has prepared the second such plan. The PAFO and DAFO staff and villagers jointly undertake the annual operational planning and implementation of activities.

In the execution of the management plan, the annual operational planning and pre-harvest inventories have found that it was necessary to reduce the projected annual harvests, due to the quality of the forest compartments. Consequently, the total harvest in the forest has been decreasing each year, from an initial 2033m$^3$ in 1994/95 down to 472m$^3$ in 1999/2000. The annual harvests are, however, projected to increase. The proposed quota for 2000/2001 is 680m$^3$.

The village involvement in forest management activities has been similar under both Models 1 and 2. Under both models, villagers are involved in the preparation of a village forest land use and extension activity plan, which encompasses forest management activities in the SPF zones. Thus villagers are involved in the boundary demarcation, participatory land use planning, pre-logging surveys, tree marking, timber bidding, logging contracts, clearing of skid trails, logging, scaling and grading of timber, seed collection, tree nurseries, and post-harvest enrichment planting in skid trails.

Recently, regeneration plots have been established in the Dong Kapho SP Forest. These plots will be monitored over time by the national Forest Research Centre (FRC). In early 1999, one village, Xienglekhhok, received outside training and support to prepare a plan for the village forest, located outside of the SPF boundaries. To date, however, this plan has not yet been finalised, or submitted to higher authorities for approval, so it is not yet effectively under implementation. This year, when outside contractors were visiting the village, looking for trees to cut to fulfil the provincial logging quota, the villagers of Xienglekhhok decided that they did not want to cut trees in their village forest. (In 13 of the other 14 villages, however, such logging has taken place, with trees being cut either in the village forest areas, or in other areas of the village, such as rice paddies.)

**Village Development**

The Model 1 village, Nathong, has had timber revenues for village development for 6 years. These funds have been used to support construction of a 4 km road from national route No. 9 to the village, 4 water pumps and bore wells, a water reservoir / fish pond, health centre, furniture for the school and JFM office, and creation of a revolving credit fund, which has been available to families for loans to acquire hand tractors, to clear land to expand paddy cultivation, or to support weaving. A recent study has shown that these investments have altered the overall economy of the village, since the road was build, there has been marketing of surplus rice and livestock, and a decreased use of non-timber forest products. (It should also be noted that this village has been a focal village for district development efforts.)

The Model 2 villages have received less funds for village development, and have been involved in JFM activities for varying periods of time. To date, integrated development plans have been prepared in two villages, Alouay Khamnoy and Xienglekhok. In Alouay Khamnoy, which has received 6 years of timber revenues, these funds have been used to build a 3-room school and school furniture. These villagers are now saving funds for planned construction of a road from the village to highway No. 9. In Xienglekhok, which was
involved for 3 years (1994/95 through 1996/97), funds have supported 2 water pumps and a 3-room school. In Dong Savan, which was involved for 1 year (1997/98), villagers plan to use funds to construct a school.

Evaluation Issues

Sustainability

The LSFP Joint Forest Management pilot models are two of the few examples of sustainable forest management currently operating in Lao PDR. The system has developed land use plans covering an area of 25,000 ha. A 50-year sustainable forest management plan (1994/95-2053/54) as been prepared for 9,600 ha. of Dong Kapho State Production Forest, of which 5,900 ha. is being managed for production.

The Evaluation Team has compared the LSFP JFM pilot models with the draft Lao national Criteria and Indicators for Sustainable Forest Management (for Forest Management Units).

The JFM approach meets the basic criteria for sustainability, in that it provides a long-term forest management plan to cover forest production and environmental issues, and provides for social participation and benefits.

The Evaluation Team does believe, however, the approach could be improved in terms of the annual execution of activities and involvement of villagers. The Model 2 rotational system of village participation does not provide equitable opportunities for all villages in terms of access to village development funds and labour. According to the current plan, one village, Alouay May, would not participate in the logging until the last ten years of the 50-year plan (years 41 to 50).

Equity Issues and Sharing of Costs and Benefits

The two models provide for different sharing of costs and benefits among villagers, DAFO and PAFO. In Model 1, the village receives the revenues from the timber sales, but pays central government royalties and other taxes, including contributions to the District Forest Development Fund and the provincial Dong Kapho Funds, contracts logging and other forest activities (to villagers, who are paid wages for their labour) and transport (to outside contractors). Funds remaining after all costs are used for village development. In 1998/99, village development funds amounted to 7 percent of the total timber sales price, or USD 627. (In earlier years, the village had received substantially more development funds, as the royalty rates had been lower, and higher volumes of timber had been harvested.) The forest management activities are not conducted by villagers alone, but in collaboration with PAFO and DAFO staff. For Model 1, the village pays the food and fuel allowances for the government field staff when they come to work with the villagers on forest management activities.

In Model 2, the PAFO receives the revenues from the timber sales, but pays central government royalties and taxes. The remaining funds are used to contribute to the District Forest Development Fund, the provincial Dong Kapho Fund, payments to villagers for labour (the Labour Development Fund), and the Provincial Fund. In Model 2, the field expenses of PAFO and DAFO are covered by the normal government per diem system. Part of the timber revenues go to a Dong Kapho Fund, which provides the forest protection fee to non-logging villages and limited support to PAFO and DAFO operations, such as provision of equipment.

Villages under Model 2 receive funds in terms of labour wages and the forest protection fee, which is used for village development. In 1998/99, the village development fund for the 2 logging villages average 4 percent of total timber sales, or US 450 per village. In 1998/99, the forest protection fees (village development funds) for 12 non-logging villages was very low.

Compatibility with Lao Policies

The Evaluation Team believes that the LSFP Joint Forest Management Model 1 and Model 2 pilots are compatible with government policy. They support the participation of local people in sustainable forest management. They also support other government policy objectives, including decentralisation, rural development, land use planning and land allocation, efforts to reduce shifting cultivation, to alleviate poverty, and to improve food security.
Recommendations

Follow-on Activities for Joint Forest Management Pilot Models 1 and 2

1. The Evaluation Team recommends that the existing joint forest management activities should be continued in Dong Kapho in Savannakhet Province. Thus, the general approach of the existing approved 50-year sustainable forest management plan should be implemented in accordance with the procedures developed, including the annual pre-harvest inventories, preparation of annual operational plans, and post-harvest assessments. As recommended below, however, the rotation of cutting among compartments needs to be reviewed and revised, in order to provide a more equitable system of participation among the 15 villages.

2. The existing collaboration and partnership between organised villagers and government field staff, particularly DAFO, should be continued in forest management, village organisation, and village development activities.

3. The current benefit-sharing arrangements need to be improved to provide adequate incentives to villagers to collaborate on participatory sustainable forest management and to provide the means (development funds) to assist villagers to diversify their possibilities for income-generation and improvement of their standards of living. Therefore, the Evaluation Team recommends that the benefit-sharing arrangements be revised and standardised for the entire forest. (It was always planned that, after the initial pilot period to test the two models, one model would be chosen for the entire forest.) As the Model 1 approach provides greater incentive for villagers to adopt a long-term perspective on forest conservation and protection, as well as providing greater resources for village development, this approach is recommended for all villages.

4. To strengthen the existing management planning approach, however, the Evaluation Team endorses the proposals to assist all villages to prepare plans for sustainable management of their village forests and other village areas outside of the state production forest, thus covering a total area of 25,000 ha. DAFO and PAFO staff should work with the villagers to develop, formally approve and implement such plans.

5. To move from a project-based approach to incorporation of these activities into the regular government structures, the Evaluation Team recommends that forest management technical units (FMTUs) be established within the PAFO and DAFO structures. Trained staff should be assigned to these units to work full-time on collaboration and support to villagers in management of these forests. Government needs to examine various alternative mechanisms for funding the operational costs of such units. All field costs (food and fuel allowances) for PAFO and DAFO staff should be funded out of the normal government budget, and/or through timber revenue funds shared with the District and Province. (The Evaluation Team recommends that the current Model 1 practice of the village paying such allowances should be discontinued.)

6. The existing models can be further developed, through efforts to support villagers to develop management plans for other categories of forest, and to develop small-scale enterprises based on forest products. Where conditions are suitable, agroforestry or establishment of tree plantations can be promoted.

7. To improve accountability, transparency, and government oversight, the villages should submit annual reports, including financial reports, to the PAFO. A system of periodic independent external financial auditing should be established.

8. Further support to village development planning is needed, especially as Government proceeds with its current process of decentralisation. Thus, district government staff can work with villagers to build upon the efforts already supported through joint forest management, to develop more comprehensive village development plans. Efforts are also needed to improve the functioning of village revolving funds, to make them more equitable.

9. The Evaluation Team believes that the basic model elements – in terms of participatory sustainable forest management, villager participation, and village development - are technically sound, and can constitute the basis for continued implementation with improvements in certain aspects. The Team recommends, however, that additional/refresher training and field guidance will be needed for both staff and villagers, in terms of both training courses, and guidance in performance of field activities, i.e., learning-by-doing.

Applicability of the model elsewhere in Lao PDR

10. The Evaluation Team believes that many of the elements developed in this pilot model would be applicable in other areas of Lao PDR, where similar forest and socio-cultural, and economic development conditions apply. Nonetheless, the Evaluation Team recommends that further work be done to improve, consolidate and expand the existing model, including standardisation and revision of the benefit-sharing for all villages and expansion of the forest management planning to cover village forests, should be undertaken first, before replicating this approach in other sites (i.e., other provinces).
2. INTRODUCTION

Lao-Swedish Forestry Programme (LSFP)

Joint Forest Management (JFM)

The Lao-Swedish Forestry Programme (LSFP), Phase IV has been supported by the Government of Lao (GOL), through the Ministry of Agriculture and Forestry (MAF) and the Department of Forestry (DOF), and the Swedish International Development Agency. This programme is scheduled to run through March 2001. The Lao-Swedish Forestry Programme is composed of a number of sub-programmes, which deal with Forestry Research, Forest Inventory, Land Use Planning, Extension, Institutional Development, and Human Resources Development.

Since 1994, LSFP has supported the Forest Research Centre’s (FRC) work to develop two pilot model approaches to participatory forest management in production forests. These pilots are referred to the Joint Forest Management Model 1 and Model 2. The JFM pilot is being applied to the management of Dong Kapho Forest in eastern Savannekhet Province. It is working with 15 villages, which have a population of 5,500 people, and covers an area of 25,000 ha. These villages are located in three Districts: Xonbury (2 villages), Phine (5 villages), and Phalansay (8 villages).

Dong Kapho is being managed in accordance with a 50-year sustainable forest management plan, which covers 9,600 ha of natural forest, of which 5,900 ha is being managed for production. In 1992-93, the forest management plan was prepared by the former National Office of Forest Inventory and Planning (NOFIP), which is now known as the Forest Inventory and Planning Centre (FIPC). A team of Lao foresters, assisted by an expatriate forestry advisor, undertook the forest inventory and prepared the management plan. In collecting information for the management plan, local villagers were consulted on their uses of the forest. As the plan was being finalised, a decision was made to involve the local population in the management of the forest.

The sustainable forest management plan has 3 objectives: (1) sustained yield production of valuable timber and non-timber forest products; (2) maintenance of the ecological, conservation and production capacity of the forest; and (3) involvement of the local people in the management.

Two different arrangements for participation of villagers in the management activities are being tested. JFM Model 1 is being tested in the NE block of the forest, whereas JFM Model 2 is being tested in the NW and S blocks.

In JFM Model 1, the village of Nathong has a management contract for a section of the forest, to manage this area in accordance with the approved management plan. In exchange for these management services, villagers are authorised to keep the net profits (benefits) from timber sales, after paying the government royalties, taxes, and other fees, as well as labour costs (whether for contracted log transport, or villager forest management activities). The villagers have agreed to pay PAFO and DAFO field staff their field (food and fuel) allowances when the government staff work with the villagers on forest management activities. The remaining village benefits are used to finance village development projects, for the benefit of all village residents.

In JFM Model 2, the Provincial Agriculture and Forestry Office (PAFO) has been designated as the forest manager. Each year PAFO contracts villagers from 2 of the 14 villages to undertake logging, skid trail clearing, nursery, and enrichment planting activities. Beginning in 1998/99, the contracts were modified to specify that all 14 villages would receive some funding every year for forest protection efforts.

Background of Evaluation

Evaluation Purpose

The Ministry of Agriculture and Forestry decided to undertake an evaluation of this pilot effort, in order to assess the concept and achievements to date of the pilot models. The aim was to determine whether or not either of these approaches to participatory forest management is sustainable or not, to determine their socio-
economic and institutional implications, including those pertaining to equity and benefit-sharing, and to assess the degree to which the pilot is compatible with government policies in a wide range of sectors. The Government also wishes to assess whether or not the models should be continued, whether they could be used elsewhere in Lao, and any possible modifications or improvements that may be needed. (The complete Terms of Reference for the Evaluation are provided in Annex 1.)

The evaluation is restricted to an assessment of the two pilot models for Joint Forest Management. It is not an evaluation of the overall Lao-Swedish Forestry Programme. The evaluation is being undertaken by the Ministry of Agriculture and Forestry. Although donor support (from the Swedish International Development Agency) has been provided to undertake this evaluation, it is not an evaluation conducted by the Government of Sweden.

Members of the Evaluation Team and Their Expertise

The Evaluation Team has six members: Mr. Xeme Samountry, Mr. Thongsoune Bounphasaisol, Mr. Thongphat Leuangkhamma, Mr. Oukham Phiathep, Dr. Sengdeune Wayakone, and Dr. Paula J. Williams.

Mr. Xeme Samoultry is the Director-General of the Department of Forestry, and previously served as the Director of the Silviculture Research Centre, Director of Provincial Agriculture and Forestry Office of Saravanh, and Project Manager for the Asian Development Bank Plantation Project. He studied forestry in Papua New Guinea and Canberra, Australia.

Mr. Thongsoune Bounphasaisol is the Director of the Division of International Cooperation and Investment in the Ministry of Agriculture and Forestry. He previously served as the Director of Forest Inventory, Silviculture Research Centre and in Forestry Planning, Finance and Cooperation. He studied forestry in Papua New Guinea and Canberra, Australia.

Mr. Thongphat Leuangkhamma is the Head of the Forest Inventory and Planning Center (FIPC), which is part of the National Agriculture and Forestry Research Institute (NAFRI). His educational training is in forest economics (former USSR), remote sensing and forest survey (the Netherlands), and forest management planning (Brisbane, Australia).

Mr. Oukham Phiathep is a Senior Programme Officer in the Department of Planning for the Ministry of Agriculture and Forestry. He previously worked on planning, finance and cooperation issues for the Department of Forestry. He studied forest economics in the former East Germany, and has prior work experience in forest inventory, survey, and watershed management.

Dr. Sengdeune Wayakone teaches forestry at Dong Dok National University Faculty of Agriculture and Forestry. His graduate training is in eco-tourism and environmental impacts assessments, with his M.Sc. research conducted in Lao PDR, and his Ph.D. at the University Putra in Malaysia. He works with the Lao-German Promotion of Forestry Education Project. He serves as the Head of Training and Model Forest and is a lecturer in forest management, environmental impact assessment, and park management.

Dr. Paula J. Williams is a community forester with expertise in participatory approaches to forest management, extension and training, institutional and policy issues, project formulation, appraisal, and evaluation. She has been working on these issues in numerous countries in Asia and Africa since 1983, after completing her Ph.D. studies in forest sociology in the U.S. Dr. Williams has previously worked in Lao PDR, participating in the Mid-Term Review of FOMACOP (April-May 1998), a Mid-Term Review of the Planning Phase for an Asian Development Bank Regional Poverty Alleviation and Environmental Management Programme (Jan.-Feb. 1999), and a Planning and Supervision Mission of FOMACOP (April-May 1999). Dr. Williams' participation in this evaluation exercise has been supported by LSFP, with funds from the Swedish International Development Agency (SIDA).

Evaluation Methodology and Limitations

This evaluation of the LSFP Joint Forest Management models is taking place during the period between 17 July and 8 September 2000, in conjunction with a parallel evaluation of another pilot model for villager involvement in sustainable management of production forests.

In accordance with its Terms of Reference, the Evaluation Team has conducted meetings with various
stakeholders, including villagers and government officials working at central, provincial, and district levels, and project staff and advisors. It has made field visits to the project area, to meet stakeholders, visit villages and the forest areas where research and logging activities have been ongoing. The Team has also consulted a wide range of documentation on the pilot model. (For more details, see Annex 2, Bibliography, and Annex 3, People Contacted.)

The field assessment of JFM activities took place from 23 July through 31 July. Mr. Oukham Phiathep, Dr. Williams and Mr. Bouahong Phanthanousy participated in the entire field trip, whereas Mr. Thongsoune Bounphasisol and Mr. Thongphat Leuangkhamma joined the field trip on 28 July. In the field visits, the team was joined by PAFO and DAFO staff, and the JFM advisor. Thus, in some of the meetings with villagers (held 29 July 2000 in Ban Nathong in Phine District in Savannakhet Province and on 30 July in Ban Khamnoy in Phalanxsay District in Savannakhet Province), the total delegation visiting the villagers numbered 15-20 members.

On 15 August, a technical meeting was held in Vientiane, at which presentations were made by project staff regarding both the technical forest management systems and the village organizing approaches.

The Evaluation Team has endeavored to use both qualitative and quantitative methods in its assessment. During the field visits, structured participatory assessments exercises were conducted with representatives of village forestry associations, project staff, and provincial authorities. The team has also used a structured approach to some of its other assessments, such as the analysis of sustainability according to draft Lao Criteria and Indicators for Sustainable Forest Management.

Due to the timing of the evaluation exercise, during the monsoon season, access to the field was difficult. This situation restricted the villages and areas in Dong Kapho Forest that could be visited.

The time available for the evaluation has limited the number of stakeholders that could be consulted. The Evaluation Team did not, for example, contact stakeholders in the private sector, such as sawmill operators or logging and transportation contractors.

As the Lao team members have ongoing other responsibilities, the time that they could allocate to the evaluation was limited. Nonetheless, the Evaluation Team has done its best under the circumstances.

3. PILOT MODEL CONCEPT

3.1 Objectives of Pilot

The overall long-term, development objective for the Lao-Swedish Forestry Programme is: Improved productivity and sustainable use of forest and agriculture land, in combination with conservation and protection of target areas.

The Joint Forest Management system promotes sustainable forest management and improvement of rural living standards through close collaboration of villagers and government forestry field staff in participatory forest management. The Joint Forest Management test has four objectives:

1. to develop and implement a partnership between the villages and the state for the management of Dong Kapho SPF with Villages located around the forest;
2. to implement participatory village land-use planning and land and forest allocation in villages located around Dong Kapho State Production Forest;
3. to develop and implement participatory village forests planning and management in villages located around Dong Kapho State Production Forest; and
4. to facilitate integrated village development in villages around Dong Kapho State Production Forest.

Joint Forest Management is testing two different pilot models – known as Model 1 and Model 2. Although both models involve joint management among the three partners – PAFO, DAFO, and the villages, the models differ in terms of which partner is given responsibility as the manager, with responsibility for ensuring that the management plan is implemented, selling the timber, paying taxes, and ensuring the distribution of the revenues according to agreed sharing of benefits. According to the revised 1998 contracts, for both models some revenues are allocated to the District forest development funds, the Dong Kapho funds, and protection fees paid to non-logging villages.
In Model 1, the concerned village is the manager, and thus receives any net profits, after paying all taxes and costs. These net profits are used for village development purposes.

In Model 2, the PAFO is the manager and the selected villages have contracts to provide labour for specific forest management activities and for forest protection. (Each year, only two out of 14 eligible villages participate in the logging activities.) The portion of the net profits remaining after all other allocations accrues to the Provincial Emergency Fund, which is to support emergency relief and provincial building maintenance.

3.2 Key Elements

Production: technical forest management

Prior to 1992, Dong Kapho State Production Forest was under the control of State Enterprise #2 and Savannekhet Province, and was heavily logged. Due to this previous logging, the 50-year sustainable forest management plan proposes a very conservative level of logging, to allow the forest to grow and improve its overall quality. Of the 9,580 ha. that comprise the forest, only 5,900 ha. have been designated as high production forest suitable for logging.

The 50-year management plan is based on a 50-year cutting cycle, and makes provision for harvesting up to 25m3/ha. on 118 ha. each year. Thus, the potential maximum annual allowable cut would be 2,950 m3.

Protection: environmental and other considerations

The Dong Kapho forest management plan is based on the assumption that harvesting of timber or non-timber forest products should not exceed growth rates, and the ecological condition of the forest should be maintained or improved. Procedures for harvesting and extraction of forest products are specified to minimize possible negative environmental impacts.

The DK forest management plan makes provision for protection of certain sites within the forest for environmental reasons. Buffer zones have been established along the banks of streams and other water courses. At the northern end of the forest, another buffer zone has been designated adjacent to Phou Xang He National Biodiversity Conservation Area and protection has been designated for a 750 ha area in DK north, close to Nam Tingnalong, for protection of wild elephant habitat. Some additional sites are being protected for cultural reasons, i.e., areas considered sacred by local villagers, such as burial grounds or sacred forests.

Participation of stakeholders

Varying degrees of stakeholder participation have occurred in the planning processes. The long-term (50-year) forest management plan and initial 10-year and 5-year plans were prepared by central government staff (National Office of Forest Inventory and Planning) in consultation with local villagers and officials (including PAFO and DAFO). The JFM staff members (PAFO and DAFO) have had responsibility for preparing the second 5-year plan.

Villagers are more involved in the preparation of the annual operational plans, where they work closely with DAFO staff on pre-logging inventories and other activities to generate the plan. The Forestry Research Centre has been involved in the operational planning.

With respect to implementation of the plans, more involvement of various stakeholders occurs. Villagers participate in different forest production activities, such as pre-logging surveys, clearing skid trails, felling trees, running tree nurseries, enrichment planting after harvests in the skid trails, post-harvest assessments, and various activities related to forest protection. Villagers are very involved in the land use planning and village development efforts.

The nature of stakeholder participation varies between the two models. In both models, one partner is designated as the "manager," responsible for organizing the work and other inputs needed for implementing the approved forest management plan. In Model 1, the village is considered to be the manager of the forest, and is contracted to implement the forest management plan. In Model 2, the Provincial Agriculture and Forestry Office (PAFO) is considered to be the manager, and the villagers are considered to be labourers, contracted to carry out specific activities.
Experience has shown that under Model 1, the villagers believe that they have a long-term interest in managing the forest sustainably, and are more conscientious of undertaking efforts to promote forest conservation and protection. Furthermore, given that they are involved on an annual basis, planned for at least 50 years, they see their partnership as a long-term commitment, and as providing a basis for village development efforts. Under Model 2, in contrast, the villagers see their participation more in the nature of short-term employment, especially if their village only has a contract for 1 or 2 years of activities, before the rotation passes to another village. Thus, although the actual activities undertaken by the villagers are similar in the two models, the degree of responsibility felt by the villagers seems to vary considerably, depending upon the degree to which they are involved in the decision-making and other aspects of forest management.

4. PILOT MODEL IMPLEMENTATION

4.1 Development of System Guidelines and Training Programmes

Implementation Progress and Achievements

The Joint Forest Management activities have been supported through the development of systems guidelines and manuals, and training courses provided through various sources. The JFM test is part of the overall activities supported by the Lao-Swedish Forestry Programme. It has received support from different LSFP sub-programmes, including those supporting forest inventory, forestry research, land use planning and allocation, and extension.

FRC, working in collaboration with NOFIP, LSFP, and other organisations, has provided training in forest management planning, inventory techniques and mapping, and land use planning. LSFP has provided training in extension techniques, including gender issues, computer calculation of cutting regimes, and annual staff work planning. The Regional Community Forestry Training Centre (RECOFTC), Bangkok, provided training in development of a model village forest plan for 1 village. JFM had a long-term technical advisor for 3 years, from January 1996 through January 1999, who provided additional training in these topics, as well as on-the-job training. This advisor, for example, worked closely with 2 PAFO and 4 DAFO staff in preparing the second medium-term (5-year) management plan for Dong Kapho SPF. Some training for staff and villagers has been conducted at the Xepone regional training centre in Savannekhet, whereas other training has been conducted in the offices, villages, or within Dong Kapho SPF Forest. For example, villagers received training in manual tree felling techniques, both at Xepone and within the forest. Some special studies have been conducted, such as testing the feasibility of using a small portable sawmill to make use of tree tops, branches, and stumps not currently marketed.

Systems manuals and guidelines have been developed for a number of activities, including participatory land use planning and land allocation, data collection for rapid non-timber forest product assessment, participatory village forest assessment and planning, tree marking, and management inventory, pre-logging surveys, tree marking, timber sales, and use of the computer programmes developed for forest management. Other manuals are currently under preparation.

Assessment of the Evaluation Team

The staff and villagers seem to have received appropriate training. In meetings with villagers, staff, and other stakeholders, however, everyone expressed the need for ongoing and refresher training.

The training programme was put together using various resources within the Lao-Swedish Forestry Programme. As the LSFP will be ending in March 2001, it is vital to identify how such ongoing training can be provided.

Certain training opportunities could have been better utilized. For example, although RECOFTC provided training and guidance in developing a model approach to preparation of plans for village forests, the model plan has never been submitted for approval, nor has the approach been replicated elsewhere.

Many procedures have been documented in the report of the technical advisor (Muraille 1999), and a subsequent component description (LSFP 2000). As part of the LSFP model consolidation phase, all relevant training and systems materials have been consolidated for future reference and guidance. If Government were to want to replicate aspects of JFM Model 1 or Model 2 in another forest, it could use these training and systems materials.
4.2 Village organization

Implementation Progress and Achievements

According to the two JFM models, the villagers have different rights, responsibilities and roles. As a result, different models of villager organization have been adopted. A contract has been signed between each participating village, the DAFO, and PAFO. Each contract specifies the rights and responsibilities of the respective partners. Two different contracts exist, one for Model 1 and one for Model 2.

Based on the results of the 1998 mid-term evaluation, the initial contracts were revised, and new contracts were adopted. These written contracts were valid through 30 September 1999. Verbal agreements were reached among the partners to continue collaboration under the same terms as the written contracts, but to await the evaluation before preparing new written contracts.

When the Evaluation Team discussed the management plan and contracts with villagers, the villagers did not clearly distinguish between these two documents. In Ban Nathong, for example, the villagers told the Evaluation Team that they have a contract for 50 years (which is actually the period for the management plan, not the contracts).

Model 1: In Dong Kapho North East, only one village is involved. The village was given a contract with full rights and responsibilities to implement the whole management plan for the management area. These rights including logging, and selling the logs and/or processing the logs and selling sawn timber. In exchange for these rights, the villagers commit themselves to protect the management area, and pay all required forest royalties and taxes. The village also pays the field (food and fuel) allowances for PAFO and DAFO staff, when they work on forest management activities.

Model 1 is being tested in a large village, Nathong, which has over 1000 inhabitants organised into seven nouay. The original approach was to establish Joint Forest Management Association (JFMA), comprised of two representatives (one woman and one man) from each household in the village. The JFMA activities have been managed by a JFM Board. The JFMA has had responsibilities for administration of the forest management activities (logging, forest protection). Over time, the JFM Board has become integrated into the normal village administration structure, so it no longer exists as a separate entity. This merging occurred because the villagers found it difficult to accept that JFM Board members were paid salaries, whereas other members of the village administration were not.

Model 2: This model is being applied with the other 14 villages. In this model, each year the Government (PAFO) hires villagers from two villages to carry out the logging. PAFO sells the logs according to the Government procedures. The villagers receive funds that are used for paying the forest workers, village administration, and village development purposes. Beginning in 1998/99, the contracts also provided for all 14 villages to receive yearly compensation for forest protection. The protection of the Management Area from fire, grazing, shifting cultivation and illegal logging and hunting is contracted out to the surrounding villages in exchange for an annual Protection Fee, which paid to a Village Fund for the common development of the villages.

In Model 2, each village was asked to form a Village Resources Management and Development Committee (VRMDC), which is part of the overall village administration. The committee has responsibility for management of the activities undertaken for logging and forest protection, as well as the village development fund (forest protection fee). The participation of the 14 villages varies each year according to the forest management plan and the compartments to be logged: each year one village in Dong Kapho South and one in Dong Kapho North West has logging rights.

In Model 2, to date only four of the 14 villages have been involved in logging operations. As the participation varies according to the technical aspects of the management plan, the length of participation is highly variable. For the first ten years of implementation, only 3 of the 5 villages in Dong Kapho North West are scheduled to participate: Xienglekhok participated for 3 years (1994, 1995, and 1996), then Dong Savanh participated for 1 year (1997), and Nalay is scheduled to participate for 6 years(1998 through 2003). Dong Bang and Nonesavang will not be part of the initial ten-year rotation.

In Dong Kapho South, only 1 of the 9 villages, Alouay-Khamnoy, has participated to date in the logging, where their participation is scheduled to run for seven years (1994 through 2000). It is planned that the logging
contract will then pass to Sale-Anot for two years (2001 and 2002), then to Alang (2003). One village, Alouy May, is not scheduled to participate in the logging activities until the fifth ten-year period, i.e., starting in year 41 (2035) of the 50-year plan. For the two villages that are located in Xonbury District, only one village (Alang) is scheduled to be involved in the final year of the first ten-year plan, so to date that district has not been participating in the logging activities.

The actual activities conducted by the villagers are discussed in Section 4.3, and the use of the revenues for village development in Section 4.4.

Assessment of the Evaluation Team

To date, only five out of 15 villages have been involved in the logging activities. Irrespective of when a village participates in the logging cycle, once a compartment is logged, it is not scheduled to be logged again for 50 years. In terms of the anticipated social benefits (employment wages and village development funds), 50 years is rather a long time period for particular village to wait for the next cutting.

To partially address this issue, the contracts were revised in 1998. In any given year, the villages that do not benefit from logging activities will now receive a portion of the funds in exchange for forest protection.

The Evaluation Team believes that the long-term rotational pattern should be reviewed and if possible revised, so that a more equitable arrangement for participation of adjacent villages can be adopted.

New written contracts should be prepared, negotiated, and signed for all villages, following the general approach used in Model 1, wherein the village is contracted to provide a set of management services, rather than being contracted merely to provide labour for certain specified activities, as is done in Model 2. The contracts should be prepared to cover at least a 5-year or 10-year period.

4.3 Participatory forest management: technical forest management and environmental issues

Implementation Progress and Achievements

Overview

The Dong Kapho long-term forest management plan was prepared by NOFIP, which undertook the forest inventories and prepared the 50-year management plan and the initial 5-year plan. The JFM field staff (DAFO and PAFO) has responsibility for preparation of the subsequent 5-year plans, and has prepared the second such plan, with assistance from the expatriate advisor. The PAFO and DAFO staff and villagers jointly undertake the annual operational planning and implementation of activities.

The annual operational planning process and pre-harvest inventories have found that it was necessary to reduce the amount of annual harvests projected in the long-term management plan. Dong Kapho previously had been heavily logged by State Enterprise Number 2 and Savannakhet Province prior to 1993. Thus, the actual timber volume in some forest compartments was less than estimated. Therefore, to meet the management plan’s sustainable harvesting criteria, less timber could be harvested than had been estimated. Consequently, the total harvest in the forest has been decreasing each year, from an initial 2033m$^3$ in 1994/95 down to 472m$^3$ in 1999/2000. The annual harvests, however, will increase as the trees grow and the forest condition is gradually improved. The annual harvests are, however, projected to increase. The proposed cut for 2000/2001 is 680m$^3$.

The villagers involvement in forest management activities has been similar under both Models 1 and 2. Under both models, villagers are involved in the preparation of a village forest land use and extension activity plan, which encompasses forest management activities in the SPF zones. Thus villagers are involved in the boundary demarcation, participatory land use planning, pre-logging surveys, tree marking, timber bidding, logging contracts, clearing of skid trials, logging, scaling and grading of timber, seed collection, tree nurseries, and post-harvest enrichment planting in skid trails.

Recently, regeneration plots have been established in the Dong Kapho SP Forest. These plots will be monitored over time by the national Forest Research Centre (FRC).
In early 1999, one village, Xienglekhok, received outside training and support to prepare a plan for the village forest, located outside of the SPF boundaries. To date, however, this plan has not yet been finalised, or submitted to higher authorities for approval, so it is not yet effectively under implementation. This year, when outside contractors were visiting the village, looking for trees to cut to fulfil the provincial logging quota, the villagers of Xienglekhok decided that they did not want to cut trees in their village forest. (In 13 of the other 14 villages, however, such logging has taken place, with trees being cut either in the village forest areas, or in other areas of the village, such as rice paddies.)

More detailed comments on some aspects of the forest management system are provided in the following sections. Some technical aspects are provided in Annex 5.

**Boundary demarcation, land use mapping and planning, and land and forest allocation**

JFM has provided training and other support to the national programme on agriculture and forest land use planning and land allocation. This is a joint activity conducted by villagers and government, primarily DAFO staff. (Details on the approach used are provided in Muraille 1999.) Between 1997 and January 1999, boundary demarcation, land use planning and land allocation had been conducted in 5 villages: Nalay, Xienglekhok, and Dong Savan in Plalansay District and Nathong and Alvay Khamnoy in Phine District. Once JFM had trained the field staff, then they were to continue the process on their own in the remaining villages.

By 2000, land use planning and land allocation has been completed for all 15 villages surrounding Dong Kapho State Production Forest (SPF) as Boundaries between villages and SPF are demarcated and properly mapped out. The land use planning and land allocation are fully carried out in accordance with the Directive 0822/MAF. The forest land has been allocated to villages for communal use, while agricultural land to individual households.

**Forest inventory techniques**

To describe the forest and providing basic forest data for the subsequent management planning, harvesting and the future monitoring of forest development, the management inventory (MI) was carried out in February-March 1993 by the National Office of Forest Inventory and Planning (NOFIP), which has recently been renamed the Forest Inventory and Planning Center (FIPC).

The inventory was based on aerial photos at scale 1:20 000 taken in February 1993. For better management planning, total volume/ha of all tree species of DBH 20+ was estimated and classified different types of production forest according to current stocking:

- Degraded production forest <75 m³/ha
- Proper production forest:
  - Low stocked 75-125 m³/ha
  - Medium stocked 125-175 m³/ha
  - Well stocked 175-225 m³/ha

Degraded production forest was not including in the management inventory. Further details on the forest inventory techniques are provided in Annex 5.

**Management planning techniques**

The 50-year management plan for Dong Kapho State Production Forest was prepared in 1993-94 by NOFIP, with assistance from an expatriate advisor. In preparing the management plan, meetings were held with all the villages around the forest, to consult with the villagers. Villagers were not, however, involved in preparation of the actual plan.

The management plan for Dong Kapho State Production Forest (DK SPF) pursues three main objectives: 1) sustained yield production of valuable timber and non-timber products; 2) maintenance of the ecological, conservation and protective capacity of forest; and 3) involvement of the local people in the management. The
production forest in DK consists of Natural High Forest (75%), Dry Dipterocarp Forest (2%) and Degraded Forest (23%). The harvesting planning, however, was made only for NHF, as there is not yet any growth yield model available in Laos for the Dry Dipterocarp Forest. The Degraded Forest was supposed to be dealt with only in terms of protection and silvicultural operation. Out of 9,580 ha. in the forest, 5,900 ha. were designated as natural high forest suitable for production (timber harvesting).

To develop a sustained yield harvesting plan with annual logging operations, three management areas were demarcated: DK north-west, DK north-east, and DK south. To attain sustained yield production, the management plan was based on compartments as a management unit.

The timber harvesting plan was devised only for NHF production forest (>75 m³/ha DBH 20+). A growth-yield model developed by Dr. Wan Razali, of the Forestry Research Institute of Malaysia, based upon research data for Malaysian forests, was used in the NHF production forest. This model allows selective logging at a cutting cycle of 50 years. The model is based on a net growth rate of commercial timber of 0.5 m³/ha/year, i.e., a yield of 50 x 0.5 = 25 m³ in a felling cycle. The model prescribes those minimum 36 healthy commercial trees per ha in DBH 30+ should be left in the residual stand, after logging, to produce min. 25 m³/ha in the next cutting cycle period. Therefore, a minimum of 45 trees per hectare are required before logging, in order to compensate for 20% of cutting damage rate.

To facilitate timber harvesting planning, possible logging volume (PLV) in the NHF production forest of each compartment and annual allowable cut (AAC) area were computed. PLV is the commercial trees of DBH 50+ cm with deduction for trees to be retained in the residual stand, resin-tapped trees and low-quality trees. The compartments are classified into PLV classes. The AAC area by dividing the total NHF production forest area by 50 (the felling cycle). The AAC area is a determining figure for the whole timber harvesting planning, while the PLV has mainly indicative value.

For practical logging operations, AAC has been calculated and the total AAC area for the whole NHF of DK was 118 ha/year. The Annual Allowable Coupe area for each MA is computed by dividing the total NHF area (5,900 ha.) by the length of the cutting cycle, i.e. 50 years. Based on the cutting cycle of 50 years, a long-term timber harvesting plan was prepared by forming five Ten-Year Allowable Coupe (TYAC) areas. Each TYAC area ten times the AAC. Compartments with high PLV were selected for harvesting during the first TYAC, while compartments with low PLV were selected for later periods. In a similar way a Five-Year Timber Harvesting Plan was worked out by selecting compartments from the first TYAC and forming the first Five Annual Coupes.

In order to provide more detailed and accurate data as a basis for deciding on the cutting regime, the pre-logging survey with 7% sampling intensity in the next 1-2 years' coupe areas was conducted by a team comprised of staff from FRC, the JFM unit, DAFO and PAFO. In the absent of clear information on natural regeneration of the SPF, planting fast-growing species in the middle of the skidding trials and enrichment planting in degraded forests was recommended.

The long-term (50-year) management plan will be revised every 10 years. More detailed, medium- and short-term planning is done through the preparation of 5-year plans and annual operational plans. The first 5-year plan was prepared by NOFIP. The second 5-year plan was prepared by the JFM staff (PAFO, DAFO, and expatriate advisor). Computer software and training has been developed to assist the staff with the necessary calculations for these plans.

**Operational planning techniques**

An important step in the harvesting planning has been the calculation of the present possible logging volume/ha (PLV) in the NHF in each compartment aiming at obtaining viable criteria for placing the compartment in order of priority for logging within the next felling cycle. As mentioned earlier, only compartments with a high PLV were selected for logging early in the plan, while a low PLV will put the compartment later in the rotation, as such compartments need a longer time to recover, to regrow to loggable stocking levels.

Considering the local people's traditional use rights to the resin-tapped trees (*Dipterocarpus alatus*), the deduction of volume of existing resin-tapped trees was made. Furthermore, the volume of low-quality trees was also deducted, as such trees are to be left in the forest for both economic and ecological reasons. In carrying out the operational planning, certain areas were identified that needed to be protected, such as the sacred forests for villagers, and such areas were excluded from logging plans.
**Tree Marking techniques**

Tree making in DK SPF is done jointly by JFM staff (DAFO) and villagers. For effective tree marking, the pre-logging survey map was enlarged into scale 1:5,000. Normally, each field team consists of 5 project staff and 2-3 local villagers. It was found in the logging site that the marking of starting points, tree marking lines, and tree to be felled was done properly. All markings were done with light-red paint (oil based). For the tree to be cut, there has been painting a line around the tree at cutting level, painting tree number on the tree at below and above cutting level.

**Timber sales**

The timber sales responsibility varies between the two models. In Model 1, the village has the right either to process and use the timber harvested, or to sell the timber. The villagers conduct the timber sales with the assistance of the DAFO and PAFO staff, in compliance with government regulations. In Model 2, the timber sales are the responsibility of the PAFO.

**Logging activities**

Logging has been contracted to villagers. Hand saws were the only major equipment used for tree harvesting. Villagers are responsible for clearing skid trails and felling the trees. The primary role of DAFO/JFM staff has been to supervise the villagers' activities.

The logging roads had previously been made during late 1980s when the DK SPF was under concession of the State Forest Enterprise number 2. Skidding trials were cut in a strip of about 2-3 meters wide.

Statistics of logged volume of timber shown that for the whole DK in the fiscal year 1994/95 the total extracted timber was about 2000 m³. This figure reduced to about 1200 m³ in the year 1996/97 and further down to about 470 m³ for the year 1999/2000. In terms of the rate of extraction per hectare, it was an average of 6.9 m³/ha in the year 1994/95 and that decreased to 1.2 m³/ha in current year.

**Table 1. Total logging volumes (m³) in Dong Kapho State Production Forest, for three management areas and for total forest.**

<table>
<thead>
<tr>
<th>Year</th>
<th>D K NorthWest (m³)</th>
<th>D K South (m³)</th>
<th>D K NorthEast (m³)</th>
<th>Total DK (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>94/95</td>
<td>824,180</td>
<td>620,228</td>
<td>589,027</td>
<td>2033,435</td>
</tr>
<tr>
<td>95/96</td>
<td>466,122</td>
<td>612,692</td>
<td>384,81</td>
<td>1463,624</td>
</tr>
<tr>
<td>96/97</td>
<td>459,941</td>
<td>466,604</td>
<td>290,19</td>
<td>1216,735</td>
</tr>
<tr>
<td>97/98</td>
<td>314,862</td>
<td>265,207</td>
<td>357,073</td>
<td>937,142</td>
</tr>
<tr>
<td>98/99</td>
<td>220,240</td>
<td>122,420</td>
<td>142,43</td>
<td>485,090</td>
</tr>
<tr>
<td>99/00</td>
<td>152,189</td>
<td>182,085</td>
<td>138,334</td>
<td>472,608</td>
</tr>
</tbody>
</table>

**Conservation and environmental protection**

Ground surveys on biodiversity, ecologically sensitive areas and other critical wild life habitats, have not yet been initiated. Nonetheless, as only 5,900 ha. meet the criteria for timber harvesting, the remaining 3680 ha., or 38% of the forest, is being managed for rehabilitation and conservation. The forest management plan specified environmental protection measures as follows:

1. Demarcation of a part of SPF as a buffer zone to Phou Xang He National Biodiversity Conservation Area;
2. Leaving 50 meter belt of protection forest (Riparian Reserves) on each side of streams and 750 ha area in DK north, close to Nam Tingnalong, for protection of wild elephant habitat; and
3. Using environmentally-sound logging methods (cutting climbers before felling, directional felling etc.).

**Protection of forests**
To achieve sustainable forest management, the protection of SPF from shifting cultivation, fire, grazing and illegal logging and hunting is a major activity for the villagers. The local people living in and around the forest are engaged in the protection through the contract between province and the respective village. Province offers various rights and economic incentives in exchange for the villagers' long-term commitments to protect the forest.

**Plans for Village Forests**

An integrated village development plan is a major activity to be performed during land use planning and land allocation exercises. The plan contains three main components: agriculture, forestry and community/social development.

Support to village communities in developing participatory village forest management plans is, however, the most recent JFM activity. Early in 1999, a team of experts from the Regional Community Forestry Training Centre (RECOFTC) in Bangkok, Thailand developed a Field Manual of Participatory Village Forest Assessment and Planning, and worked with villagers and JFM staff to prepare a model village forest plan (in Thai language) for Ban Xienglekphok. As of August 2000, however, the village forest plan had not yet been submitted to the higher authorities concerned for approval, and thus it is not yet under implementation.

**Assessment of the Evaluation Team**

The management plan is formulated based on results of a management inventory conducted in 1992 by NOFIP and all forestry operations to be undertaken are clearly determined. A growth-yield model with a cutting cycle of 50 years is used. Pre-logging inventory for the 1-2 year coupe areas was carried out.

The actual timber logging extraction rates range from 1.2 to 7.0 m$^3$/ha, which is substantially lower than it has been prescribed of maximum 25 m$^3$/ha. In the year 1999/00, for instance, the total logged volume of timber is about 470 m$^3$ for the entire forest. While it is normal that the annual operational plans and actual harvest rates will be lower than the maximum prescribed rates, the situation in Dong Kapho is more extreme – as the compartments have much less harvestable volume than had been previously estimated. In accordance with the sustainable management criteria, the harvesting levels are based upon the condition of the forest, as well as other factors. It is anticipated, however, that this situation will improve over time, as the trees grow and the forest condition improves. The proposed cut for 2000/2001 is 680m$^3$.

In the future, as the condition of the forest improves and the sustainable harvesting levels can be increased, then increased socio-economic benefits will be possible – in terms of government timber royalties and taxes, increased village employment and income in forestry operations, and increased funds available for village development. [The current breakdown of these benefits per m$^3$ of timber harvested is shown in Appendix 7, Tables 7.3a to 7.3c.]

The JFM models comprise a contractual partnership for sustainable forest management between state and villages. Villages should commit themselves to protect the SPF area.

The Evaluation Team believes, however, that the current system of rotation of compartments, which was based entirely on technical forest production criteria, does not adequately consider the social factors, i.e., the employment of villagers and generation of funds for village development.

It is also urgent that the forests located in the village territories, outside of the State Production Forest, be brought under sustainable forest management plans. This issue is particularly urgent given the amount of logging in these areas that has apparently been going on during the 1999-2000 season.

**4.4 Village development**

**Implementation Progress and Achievements**

The Model 1 village, Nathong, has had timber revenues for village development for 6 years. The level of revenues that has accrued to the village has decreased over time, due to both increases in the level of royalty and tax payments, and the decreases in amount of timber harvested. Nonetheless, the total revenues, and particularly the larger amounts available in the initial few years, have been utilised to promote significant
village development activities.

These funds have been used to support construction of a 4 km road from national route No. 9 to the village, 4 water pumps and bore wells, a water reservoir / fish pond, health centre, furniture for the school and JFM office, and creation of a revolving credit fund, which has been available to families for loans to acquire hand tractors, to clear land to expand paddy cultivation, or to support weaving.

A recent study has shown that these investments have altered the overall economy of the village: since the road was built, there has been marketing of surplus rice and livestock, and a decreased use of non-timber forest products (Skagerfält 2000). (It should also be noted that this village has been a focal village for district development efforts.)

The Model 2 villages have received fewer funds for village development, and have been involved in JFM activities for varying periods of time. To date, integrated development plans have been prepared in two villages, Alouay Khamnoy and Xienglekhok. In Alouay Khamnoy, which has received 6 years of timber revenues, these funds have been used to build a 3-room school and school furniture. These villagers are now saving funds for planned construction of a road from the village to highway No. 9. The villagers report that they have been informed by the District that they will not receive assistance from the District for the road construction, as the village has income from the timber harvest operations. In Xienglekhok, which was involved for 3 years (1994/95 through 1996/97), funds have supported 2 water pumps and a 3-room school. In Dong Savan, which was involved for 1 year (1997/98), villagers plan to use funds to construct a school.

**Assessment of the Evaluation Team**

The Evaluation Team noted that significant differences exist between Model 1 and Model 2 in terms of their promotion of village development activities. Model 1 has clear advantages over Model 2. The management plan has foreseen that the Model 1 village will be involved in forest management activities each and every year of the 50-year plan. The system for Model 2 villages, in contrast, prescribes a rotation of activities: although each of the 14 villages are involved in forest protection each year, in any given year only 2 out of the 14 villages are involved in the timber harvest and associated activities.

As a result, the Model 1 approach has resulted in greater achievements in terms of village development as well as greater protection and conservation of the forest. This observation was made by everyone with whom the Evaluation Team met – villagers, district and provincial officials, and JFM staff (DAFO and PAFO).

When the Evaluation Team visited Alouay-Khamnoy, the villagers complained that they had a Model 2 contract. They believe that they undertake the same activities as the Model 1 village, Nathong, yet receive fewer benefits. This situation was perceived by the villagers to be highly inequitable.

**5. ANALYSIS OF EVALUATION ISSUES**

**5.1 Sustainability**

The Joint Forest Management pilot model is one of the few examples of sustainable forest management currently operating in Lao PDR. The system has developed land use plans covering an area of 25,000 ha. A sustainable forest management plan has been prepared for 9,600 ha. of Dong Kapho State Production Forest, of which 5,900 ha. is being managed for production. The long-term, 50-year sustainable forest management plan (1994/95-2053/54) is divided into ten-year periods for implementation, and is updated through 5-year and annual operational plans.

**Lao and international standards for sustainable forest management**

The Evaluation Team assessed the sustainability rating based on the draft FMU Criteria and Indicators. (The detailed analysis is provided in Annex 4.) Overall, the Team concludes that the Joint Forest Management pilots are systems of sustainable forest management. The natural forests are being managed according to management plans that ensure the long-term sustainability of forest production. The plans make provision for environmental safeguards. As the plans are implemented by local villagers, in partnership with village, district and provincial officials, they are socially sustainable. The system is economically sustainable, in that government royalties and taxes are paid in a transparent manner, and the villagers are also receiving economic benefits, which provide incentives for their continued participation. The pilot systems are more
sustainable than previous practices in the pilot areas, or even ongoing practices in adjacent areas.

Ways to further enhance sustainability

The Evaluation Team does, however, see room for further improvement.

The Evaluation Team believes that the approach could be improved in terms of the annual execution of activities and involvement of villagers. The Model 2 rotational system of village participation does not provide equitable opportunities for all villages in terms of access to village development funds and labour. According to the current plan, one village, Alouay May, would not participate in the logging until the last ten years of the 50-year plan (years 41 to 50).

During the pilot period, it has been difficult for the villagers to accept the idea of having two different models (Model 1 and Model 2) existing side-by-side for the same State Production Forest. The idea was never that both models would be continued after the pilot phase. Rather, the aim was to test two approaches, then evaluate the results and decide which approach should be continued. Therefore, the Evaluation Team recommends that the government assess the feasibility of adapting the forest management plan so that the Model 1 approach could be adopted throughout the area.

5.2 Benefit-sharing and other equity issues

The two models provide for different sharing of costs and benefits among villagers, DAFO and PAFO. The exact amount of funds paid to the government in timber royalties will vary from year to year, depending upon the species harvested (as different royalty rates apply to different species).

Sharing of Revenues

The revised (1998) contracts specified the following breakdown of revenues:

For Both Models:

Royalties are paid to Central Government on the timber sales

District Forest Development Fund =

an additional amount equal to 5% royalties

Net Revenues =

Total revenue from log sales – (Royalties + labour costs for logging, road clearing, and transportation + duties + remittances to the District Forest Development Fund)

Dong Kapho Production Forest Protection Fund = 10% net revenue

Each year, 70% of the fund is to be divided among the non-logging villages
Each year, 30% of the fund is to be used to support field office expenses

For Model 1:

Dong Kapho Production Forest Protection Fund = 10% net revenue

Village administration = 10% net revenue
Village forestry operations = 20% net revenue
Village development costs = 60% net revenue

For Model 2:

Dong Kapho Production Forest Protection Fund = 10% net revenue
Dong Kapho Production Forest Improvement Fund = 30% net revenue

Provincial Forestry Fund = 60% net revenue

Model 1

In Model 1, the village receives the revenues from the timber sales, but pays central government royalties and other taxes, including contributions to the District Forest Development Fund and the provincial Dong Kapho Funds, contracts logging and other forest activities (to villagers, who are paid wages for their labour) and transport (to outside contractors). Funds remaining after all costs are used for village development. In 1998/99, village development funds amounted to 7 percent of the total timber sales price, or USD 627. (In earlier years, the village had received substantially more development funds, as the royalty rates had been lower, and higher volumes of timber had been harvested.) The forest management activities are not conducted by villagers alone, but in collaboration with PAFO and DAFO staff. For Model 1, the village pays the food and fuel allowances for the government field staff when they come to work with the villagers on forest management activities. To date, costs of training for both villagers and field staff have been covered by the Lao-Swedish Forestry Programme.

Table 2. LSFP JFM Model 1: 1998/99 Cost/Benefit-Sharing

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government royalties, taxes &amp; fees</td>
<td>73%</td>
</tr>
<tr>
<td>Transport costs</td>
<td>12%</td>
</tr>
<tr>
<td>Labour costs</td>
<td>2%</td>
</tr>
<tr>
<td>Village administration &amp; forest management</td>
<td>6%</td>
</tr>
<tr>
<td>Village development: $627 per village (based on 142 m³)</td>
<td>7%</td>
</tr>
<tr>
<td>Village pays DAFO and PAFO allowances out of forest management budget</td>
<td></td>
</tr>
</tbody>
</table>

Model 2

In Model 2, the PAFO receives the revenues from the timber sales, but pays central government royalties and taxes. The remaining funds are used to contribute to the District Forest Development Fund, the provincial Dong Kapho Fund, payments to villagers for labour (the Labour Development Fund), and the Provincial Fund. In Model 2, the field expenses of PAFO and DAFO are covered by the normal government per diem system. Part of the timber revenues go to a Dong Kapho Fund, which provides the forest protection fee to non-logging villages and limited support to PAFO and DAFO operations, such as provision of equipment.

As in Model 1, training costs for both villagers and field staff have been covered by the Lao-Swedish Forestry Programme.

Villages under Model 2 receive funds in terms of labour wages and the forest protection fee, which is used for village development. In 1998/99, the village development fund for the 2 logging villages average 4 percent of total timber sales, or US 450 per village. In 1998/99, the forest protection fees (village development funds) for 12 non-logging villages was very low.
Table 3. LSFP JFM Model 2: 1998/99 Cost/Benefit-Sharing

For 2 logging villages only:

<table>
<thead>
<tr>
<th>Cost Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government royalties, taxes &amp; fees</td>
<td>83%</td>
</tr>
<tr>
<td>Transport costs</td>
<td>10%</td>
</tr>
<tr>
<td>Labour costs</td>
<td>2%</td>
</tr>
<tr>
<td>Village administration</td>
<td>1%</td>
</tr>
<tr>
<td>Village development: $450 per village (based on 171 m$^3$)</td>
<td>4%</td>
</tr>
<tr>
<td>DAFO and PAFO cover own food and fuel allowances</td>
<td></td>
</tr>
</tbody>
</table>

Benefit-sharing within the village

For both models, within a given village, all village residents benefit from the village development projects, such as construction of a school or fish pond. Each village decides how to organise the paid labour, which seems to be equitably distributed among village residents. Women as well as men have opportunities for paid employment in forest management activities. Similarly, all village residents have opportunity for work, irrespective of their ethnicity, relative household income, or social status.

One mode of sharing benefits, however, does not seem to provide equitable opportunities for all village residents. In the Model 1 village, Nathong, a revolving credit fund has been established, which provides loans for purchase of hand tractors, hiring labour to clear paddy, or purchasing of inputs for weaving. As the loans require collateral, relatively few families have taken out such loans, and such families tend to be those who are more financially welloff than the other families. For example, 20 loans have been issued for hand tractors, which have gone to only 11 families (out of more than 200 families in the village).

As the government is interested in promoting revolving loan funds throughout the country, as a way to increase the productivity, living standards and income of individual households, this issue warrants particular attention. It may be useful to consider whether the conditions for the revolving loan fund could be restructured, such that families without collateral could nonetheless obtain loans, perhaps through a group loan guarantee.

Box 1. How much incentive is enough for villagers’ participation?

In 1999-2000, under Model 2, villagers get 70,000 kip/m$^3$ for timber harvesting activities, which includes clearing skid trails and felling the trees. In Ban Khamnoy, villagers had agreed that 30,000 kip/m$^3$ would pay labour, 10,000 kip/m$^3$ would go to village administration, and 30,000 kip/m$^3$ would go to village development.

In comparison, if an outside contractor comes into the village and cuts trees located in the village forest or in rice paddies, as part of the provincial logging quota, villagers were being paid 40,000 – 50,000 kip/m$^3$. In Ban Khamnoy, the village had agreed that 10,000 kip/m$^3$ would go to the owner of the rice paddy where the tree was cut, and the remainder would be contributed to the village development fund.

The villagers do not get much more for their labour than they receive when an outside contractor does the work. Villagers in Khamnoy stated that it was far easier just to let the contractor do the work, even if the villagers received a bit less money.

In 1999-2000, substantial logging went on in these village areas outside the State Production Forest. Reportedly, logging was conducted in 13 out of 15 villages. The reported volumes for 6 villages amounted to 3912 m$^3$. If the average amount, 652 m$^3$/village, were projected for all 13 villages, then the total amount logged outside the SPF can be estimated at 8476 m$^3$. (In comparison, a total of 472 m$^3$ was logged inside of the SPF.) (Bérénice Muraille, personal communication)

The Evaluation Team believes that the current wages paid for labour in Model 2 are insufficient to adequately motivate villagers to engage in sustainable forest management and conservation.

As the government is interested in promoting revolving loan funds throughout the country, as a way to increase the productivity, living standards and income of individual households, this issue warrants particular attention. It may be useful to consider whether the conditions for the revolving loan fund could be restructured, such that families without collateral could nonetheless obtain loans, perhaps through a group loan guarantee.
Benefit-sharing among villages

As previously noted, the existence of different models of benefit-sharing for adjacent villages has caused discontent among the villagers who receive fewer benefits, i.e., Model 2. This situation has not, however, resulted in any conflict between villages, but rather Model 2 villagers have expressed an interest in having more favourable terms in their own contracts.

Following the Mid-term Evaluation, the contracts were revised. All logging villages, under both Model 1 and Model 2, now contribute funds that provide payments to non-logging villages for forest protection. The amount of these funds, however, is very low. In 1998/99, the Dong Kapho Production Forest Protection Fund received a total of USD 261.80, of which USD 183.26 (70 percent) was to be divided among the 12 non-logging villages – resulting in a payment of only USD 15.27.

Benefit-sharing with district and provincial levels of government

For both models, a portion of the net revenues (after payment of royalties, other taxes, and labour costs) goes to the District Forest Development Fund, as well as to the Dong Kapho Funds. In Model 2, a portion of the funds also goes to the Provincial Fund. These funds are, essentially, other forms of taxes paid to government.

The system used in Model 1 whereby the villagers pay government civil servants (DAFO and PAFO) food and fuel allowances has several weaknesses. First, it is contrary to normal government procedures, wherein the government pays such allowances. Second, it creates an opportunity for abuse: villagers allege that on some occasions, government staff have arrived in the village, demanding to be paid their allowances (when they were not scheduled to work, or insisting on being paid allowances for several days of work when they may have only worked a few hours). Given the prevailing political and cultural situation in Lao PDR, villagers feel powerless to resist such demands. They have been thinking, however, that they would like to have an audit done of the expenditures, so they could see how much money has gone to this expense. Third, government staff resents having to ask the villagers for such allowances, because they perceive that the district or province is higher in the hierarchy, and thus believe that they, rather than the villagers, should be in control of the money. (Thus, neither the villagers nor the field staff have yet adopted an approach to viewing their collaboration as one in which the villagers are the clients, and the extension staff provide services to them, for which the clients should provide compensation.)

The Evaluation Team recommends that government staff allowances should be paid directly by government, rather than provided by a village. As government taxes are being paid, government should provide the necessary support in terms of field personnel and their operating expenses. If some forestry royalties or taxes can be retained locally to cover local forest management costs, and adequate financial monitoring mechanisms be put in place to ensure proper use of funds, such an arrangement would be preferable to the current situation whereby most of the taxes go to the central government treasury, and then are disbursed to the provinces and districts.

The JFM Model 1 contract had specified that an independent audit of the Nathong account would be conducted each year. The DAFO and PAFO staff of the JFM unit periodically would review the village account, in terms of checking the bills, but did not undertake an audit that provided an overview of the actual fund allocation. At one point, however, a review of the Nathong account was undertaken by a two-person team, consisting of a DOF Financial Unit staff member and the LSFP Financial Advisor. In the final model consolidation work, procedures have been specified for financial management at the village level for Model 1, which include guidelines for financial auditing.

The Evaluation Team believes that it is important to more firmly establish standards of accountability and transparency in financial management for all partners in JFM – not only the villagers, but also the DAFO and PAFO. The Evaluation Team was not able, for example, to find out exactly how some of the funds managed by the DAFO and PAFO had been used. This issue of financial accountability is a key one for establishing trust among the partners. The Evaluation Team therefore recommends that regular audits should be done to track how all forest revenue funds are being used by the different partners (villagers, DAFO, and PAFO). Such audits would improve transparency and accountability, and increase confidence among all partners that the funds were being used in compliance with negotiated agreements.

National benefits
The nation benefits from the joint forest management system, in terms of receiving royalties and taxes on the timber (and non-timber) forest products harvested. The country also benefits from improved environmental management of these natural forests, which constitute an important national asset.

5.3 Compatibility with Lao policy context

The Evaluation Team believes that the Joint Forest Management Model 1 and Model 2 pilots are compatible with government policy. They support the participation of local people in sustainable forest management. They also support other government policy objectives, including decentralisation, rural development, land use planning and land allocation, efforts to reduce shifting cultivation, to alleviate poverty, and to improve food security.

The Forestry Law clearly specifies that government may authorize others to manage forests on its behalf. In Article 7 of the Forestry Law, it is specified that the compensatory benefits, including timber, may be provided for such management. Thus, both Models 1 and 2 are in compliance with the Forestry Law. Although some government staff expressed the opinion that the Forestry Law only permits hiring of villagers as labourers, and therefore only Model 2 is in compliance with the law (see, for example, Annex 6), the Evaluation Team’s own analysis of this issue, and consultation with Ministry officials, does not support this interpretation.

In 2000, Prime Ministerial Order No. 1 provided directives for decentralisation, with the objective of strengthening already ongoing efforts to promote bottom-up participatory development. The aim is that such development will be implemented at the village level. The district level is to support such development through its planning and budgeting activities. The province is to focus on strategic planning activities.

In line with PMO No. 1, Model 1 of the Joint Forest Management approach offers a mechanism for village-level implementation of development. Although Model 2 does also involve villagers in implementation, their participation is more restricted and less effective. Such village-level activities are being supported by the district and provincial forestry field officers who have been assigned to the JFM unit for Dong Kapho Forest.

6. CONCLUSIONS & RECOMMENDATIONS

6.1 Overall assessment and conclusions

Overall, the Evaluation Team believes that the Joint Forest Management test has made valuable contributions in piloting two different models for village participation in sustainable management of natural forests in Lao PDR. The experience has shown the capabilities of villagers to form an effective partnership with DAFO and PAFO field staff to undertake a variety of activities for forest management and operational planning. A portion of the timber revenues has been used as an important catalyst for village development. The experience demonstrates that such approaches to involvement of villagers in sustainable natural resource management can yield significant benefits – in terms of improved forest conservation, more sustainable forest management, generating local employment, and promoting rural development.

The anticipated financial and associated village development benefits, however, have been less than originally projected. The forest management plan had estimated that the annual allowable cut would be up to 2950 m$^3$/year. Based upon more detailed pre-harvest inventories and the sustainable forest management criteria in the plan, however, the actual harvests have declined from approximately 2000 m$^3$ in 1994/95 to less than 500 m$^3$/yr. in the past two years. This situation is a temporary one, which should improve in future years as the forest grows and recovers from the over-exploitation that took place prior to 1993.

The comparison of the two models makes it clear that the financial and village development benefits have been more significant in the Model 1 approach, wherein villagers are contracted to be responsible for the overall management and implementation of the forest management plan, with guidance and supervision provided by the DAFO and PAFO. In this situation, the village has received significant revenues over the past 6 years, which have funded several key village development initiatives and transformed the overall economy of the village. The villagers have a long-term (50-year) perspective on their involvement in this collaborative management process, and general protection of the forest has increased.
In contrast, the Model 2 villages are involved in timber harvesting on a rotating basis, and thus their revenues fluctuate widely. Each year, only two of the 14 villages have contracts to provide labour for timber harvesting, and receives the associated wages and village development funds. Since 1998/99, the other 12 villages have received some assistance in terms of forest protection fees for village development, but the amount of funding has been very low. As a result, under Model 2 the villagers feel less commitment to sustainable management and conservation of the forest, and have limited opportunities to generate funding for village development. They perceive the situation to be unfair, and would like to have a Model 1-type of contract.

The Evaluation Team therefore believes that it is vital that the Government examine how the technical forest management plan and the contracts could be revised, so that one common approach is adopted for all the villages surrounding Dong Kapho State Production Forest. The aim of the JFM test always has been that after an initial pilot period, the two approaches would be evaluated and one approach adopted for the entire forest and all the participating villages.

The approach used in Model 1, whereby the village is contracted to function as the manager for that portion of the forest that falls within the village territory, and is responsible for the associated financial management (paying various royalties, taxes, costs, and using the balance for village development), should be adopted for all 15 villages. Nonetheless, it will be vital that Government provide adequate funding to cover the operational costs of DAFO and PAFO who work with the villagers on these activities. It is also important that Government find the means to provide ongoing training and technical support, both to villagers and to forestry staff, after the outside project (donor) funding is phased out.

6.2 Recommendations

Follow-on Activities for Joint Forest Management Pilot Models 1 and 2

1. The Evaluation Team recommends that the existing joint forest management activities should be continued in Dong Kapho in Savannakhet Province. Thus, the general approach of the existing approved 50-year sustainable forest management plan should be implemented in accordance with the procedures developed, including the annual pre-harvest inventories, preparation of annual operational plans, and post-harvest assessments. As recommended below, however, the rotation of cutting among compartments needs to be reviewed and revised, in order to provide a more equitable system of participation among the 15 villages.

2. The existing collaboration and partnership between organised villagers and government field staff, particularly DAFO, should be continued in forest management, village organisation, and village development activities.

3. The current benefit-sharing arrangements need to be improved to provide adequate incentives to villagers to collaborate on participatory sustainable forest management and to provide the means (development funds) to assist villagers to diversify their possibilities for income-generation and improvement of their standards of living. Therefore, the Evaluation Team recommends that the benefit-sharing arrangements be revised and standardised for the entire forest. (It was always planned that, after the initial pilot period to test the two models, one model would be chosen for the entire forest.) As the Model 1 approach provides greater incentive for villagers to adopt a long-term perspective on forest conservation and protection, as well as providing greater resources for village development, this approach is recommended for all villages.

4. To strengthen the existing management planning approach, however, the Evaluation Team endorses the proposals to assist all villages to prepare plans for sustainable management of their village forests and other village areas outside of the state production forest, thus covering a total area of 25,000 ha. DAFO and PAFO staff should work with the villagers to develop, formally approve and implement such plans.

5. To move from a project-based approach to incorporation of these activities into the regular government structures, the Evaluation Team recommends that forest management technical units (FMTUs) be established within the PAFO and DAFO structures. Trained staff should be assigned to these units to work full-time on collaboration and support to villagers in management of these forests. Government needs to examine various alternative mechanisms for funding the operational costs of such units. All field costs (food and fuel allowances) for PAFO and DAFO staff should be funded out of the normal government budget, and/or through timber revenue funds shared with the District and Province. (The Evaluation Team recommends that the current Model 1 practice of the village paying such allowances should be discontinued.)
6. The existing models can be further developed, through efforts to support villagers to develop management plans for other categories of forest, and to develop small-scale enterprises based on forest products. Where conditions are suitable, agroforestry or establishment of tree plantations can be promoted.

7. To improve accountability, transparency, and government oversight, the villages should submit annual reports, including financial reports, to the PAFO. A system of periodic independent external financial auditing should be established.

8. Further support to village development planning is needed, especially as Government proceeds with its current process of decentralisation. Thus, district government staff can work with villagers to build upon the efforts already supported through joint forest management, to develop more comprehensive village development plans. Efforts are also needed to improve the functioning of village revolving funds, to make them more equitable.

**Standardisation of Model Elements as PAFO and DAFO Management Procedures**

9. The Evaluation Team believes that the basic model elements – in terms of participatory sustainable forest management, villager participation, and village development - are technically sound, and can constitute the basis for continued implementation with improvements in certain aspects. The Team recommends, however, that additional / refresher training and field guidance will be needed for both staff and villagers, in terms of both training courses, and guidance in performance of field activities, i.e., learning-by-doing.

**Applicability of the model elsewhere in Lao PDR**

10. The Evaluation Team believes that many of the elements developed in this pilot model would be applicable in other areas of Lao PDR, where similar forest and socio-cultural, and economic development conditions apply. Nonetheless, the Evaluation Team recommends that further work be done to improve, consolidate and expand the existing model, including standardisation and revision of the benefit-sharing for all villages and expansion of the forest management planning to cover village forests, should be undertaken first, before replicating this approach in other sites (i.e., other provinces).