

OUTLINE OF FOREST POLICY DEVELOPMENT IN LAO P.D.R.

Khampha CHANTHIRATH and Khamvieng XAYABOUTH
Project Manager,
The Forest Conservation and Afforestation Project,
Department of Forestry, Lao P.D.R.
Head of Environmental Education Unit,
Faculty of Agriculture and Forestry, Lao P.D.R.

I. BACKGROUND

This paper is prepared for International workshop on Forest in Asian July 21-23 1998 in Shonan city, in Japan .The contents of this paper deals with a country description; overview of forest development, the policy of forest development and multilateral support to forest development in Lao P.D.R.

II. COUNTRY DESCRIPTION

The Lao P.D.R. is fairly small mountainous and land locked country in Southeast Asia. Geographically it is situated between the altitude 14 and 22 North of the equator and it is surrounded by China, Vietnam, Cambodia, Thailand and Myanmar. It has now 4,581,258 people and area of 236,800 square kilometers, having a population density of 19.35/square kilometer (population census 1995). Thus it is one of the least densely populated and least economically development countries in Southeast Asia, with a G.D.P. per capita less than USD 200.About 58% of G.D.P. still comes from agriculture and forestry and engaging 85% of labor force. Within industry, the manufactory sub-sector consists mainly of small scale processing of agricultural and forests products.

Hydropower and wood products are the most country export earning accounting for and estimated 68% of officially recorded convertible currency earning.

The Mekong River originating in China is the life of Lao P.D.R. and traverses the country from the North to the South. It virtually drain the whole country except for a small portion of the Northeast .The alluvial and older terraces of the Mekong and its tributaries covers about 20% of the national territory. Which for the remaining parts are mountainous. Altitude between 2000-3000 m occurs in the central and the Annamite chains in the East.

Lao P.D.R. has two main climatic zones. The plains are characterized by a tropical monsoon climate. With an average annual rain fall of 1250 mm in the central part of the country and to covers 3000mm in the South .The second climatic is the mountain zone above 1000m of sea level, where annual rain fall is up to 3000mm. About 80% of rain fall from April to October and the average temperature is about 24 °C.

III. OVERVIEW OF FOREST DEVELOPMENT

Lao P.D.R is rich in natural resources, especially in natural forest resources. The total forest area is about 11.2 million hectares, comprising about 47% of the country land. The still relatively abundant forest resources of Lao P.D.R are disappearing rapidly. In 1940 the country has about 17 million hectares of forest covering about 70% of the total land. Slash and burn cultivation and uncontrolled logging are the main factors for deforestation and degradation of forestland, which again have adverse impacts on bio- diversity. Road and dam construction and illegal trading in flora and fauna are some other main threats to bio-diversity.

These problems were recognized already in 1989, when the first National Forestry conference, resulting in a National Action plan in 1991, was holding. Since the early 1990's the Government of Lao P.D.R (GOL) has done a lots to reverse the negative forest trends.

The protected area has been expanded to cover almost 14% of the total country land. New policy and legislation to support sustainable forest management have been introduced, and many important forestry projects have been implemented or initiated.

Since 1996 the new forestry law has been issued and gives a clear definition on each forest categories, such as: Regeneration forest, Degraded forest, Protection forest, Conservation forest and Production forest.

IV. FOREST POLICY DEVELOPMENT.

1. Policy on Land Allocation.

Based on the land use planning exercise, land for the different purpose will be allocated to farmers, households or community. The land allocation process is determined by the participation of the villagers to decide how the land will be distributed. The several of map in each land use type have been used for land allocation activities. The land allocation exercise will be completed with a land tenure certificate for each participant prepared by district land management and land allocation committee. The government is proceeding with its land allocation program with a view to achieving its target of effective stabilization of shifting cultivation.

2. Re-Afforestation Policy.

According to the result of forest survey conducted in 1989, to studies the changing of the forest cover for a period of 1982 - 1989, the forest area in the country was declined by about 700,000 hectares over 7 years. The major causes of this decline are from the primitive agriculture practiced system of rural people of high land area and also by uncontrolled logging in low land area. To resolve the above problems, the government has put the work of stabilization of shifting cultivation as well as control of logging high up in the list of socio-economic development programs. A satisfactory score of success has been made in this

aspect up to the present time and the government continues its commitment towards in the future. In the decree No169, it states that all-existing forest and forestland are the property of the National community, presented by the state. Tenure of the tree, natural forests and forestland was authorized by Ministry of Agriculture and Forestry, otherwise it remains the property of the state. Any tree or forest planted and maintained by individual or groups from their own resources, becomes their own property, which may be managed, used, transferred and inherited. The state also recognizes the right to the use and collection of fuel wood and non-timber forest products. The decree No 186 and forest law emphasized the promotion of the tree planting, protection, and rehabilitation of natural forest. Tree planting may be done by individual, community, and enterprise, which is local or foreign. Foreigners can hold concessions and are thus obliged to undertake joint concession with enterprise. Up to 100 hectares of land for plantation can be allocated and approved by district authorities. If they use larger tracks, they need provincial level approval. Land tax as well as resources tax will not be charged in the case of well-stocked tree plantation.

After the foundation of Lao P.D.R. in 1975, the government has strongly promoted tree planting, particularly in the recent year. The reforestation program has started to take encouraging steps with solid participation of individual, community and enterprise. This has increased the plantation area sharply in the recent year as a figure shows below.

List of plantation

Year	Area planted (ha)	Planted by
1975-85	2,425	state
1986-89	1,275	state
1990	716	state and private
1991	1,359	state and private
1992	901	state and private
1993	2,219	state and private
1994	3,798	state and private
1995	8,828	state and private
1996	11,500	state and private
Total	28,605	

3. Policy on Forest Conservation and Watershed Management

In 1996 the department of forestry has established a National Office for Nature Conservation, which now is the Center for Protected Area and Watershed

Management.

These early initiatives led to the establishment " National Bio-diversity Conservation Areas " (NBCAs, see figure 1) in 1993 through Prime Minister decree No 164 of 18.

List name of National Bio-diversity Conservation Areas			
No	NBCAs (name)	Area (ha)	Province (being located)
1	Phou Den Din	222,000	Phongsaly
2	Phou Leui	150,000	Houaphanh
3	Nam Et	170,000	Houaphanh
4	Nam Sam	70,000	Houaphanh
5	Nam Ha	69,000	Louang Namtha
6	Nam Pui	191,200	Xayabuly
7	Phou Khao Khuay	200,000	Vientiane-Bolikhamxay
8	Phou Phanang	70,000	Vientiane Mun.
9	NamKading	169,000	Bolikhamxay
10	Nakai-Nam Thern	353,200	Khammuane
11	Phou Hinpoon	150,000	Khammuane
12	Phou Hinnamno	82,000	Khammuane
13	Phou Sanghe	109,900	Savannakheth
14	Sebang Nuane	150,000	Savannakheth-Saravane
15	Phou Xieng Thong	120,000	Saravane
16	Dong Hua Sao	110,000	Champasack
17	Sepiane	240,000	Champasack-Attapeu
18	Dong Ampham	200,000	Attapeu
19	Se Sap	133,500	Saravane
20	Dong Phouvieng	53,000	Savannakheth
Total area		3,012,800	

Source: Department of Forestry, MAF

Two subsequent addition have raised the total number of NBCAs in the system to 20 covering almost 30,000 sq. km or about 12,5% of the country land area. In addition, large area has been designed as protection or conservation forest at provincial and district level, some of which are scheduled to be upgraded to NBCAs status. In total these classes of forest now cover 8 million hectares or 76%

of the recognized forest estate a large commitment by any standards . Most recently ,in 1996 the National Assembly passed the forestry law , which provides a comprehensive policy framework for all aspect of forestry including a basic for zoning of NBCAs in to "Strictly Protected" and controlled use zones . Regulations are currently being drafted to provide the necessary detail for all aspect of wildlife ,habitat and protected area management . Besides initiatives in the forestry sector, a Science Technology and Environment Organization (STENO) was established in 1993 under the Prime Minister 's Office. STENO has a mandate to provide cross-spectral co-ordination with the framework of an Environment Action plan (STENO, 1993). At the international level, one of its responsibilities is to lead participation in the conservation on Biological diversity, which Lao P.D.R. ratified in 1996. Lao P.D.R. also a signatory to the world heritage Convention, but not yet a party to CITES.

4. Wood Based Industry Policy

The Lao wood based industry is composed mainly of the sawmill industry. In1996 there were about registered 100 sawmills. The number of sawmills in 1989 was estimated at 130. Most of the sawmills are relatively small in an international context, averaging a production capacity of about 3,000 - 4,000 m3 a year in term of output. The total of the sawmill sector's capacity is estimated at about 500,000 m3, but due to the low ability in utilization annual official production has been around 250,000 m3 during the mid 1990. In addition to registered sawmills, sawn wood is being produced by pit sawing and small-scale industrial operations. The volume of these operations has been estimated at 200,000 - 250,000 m3 ,which implies that annual production of sawn wood would be about 500,000 m3 at present. There are two plywood factories with a combined capacity of 100,000 m3. There is no pulp and paper factory in Lao P.D.R.. Downstream processing is still relatively limited comprising mainly chipboard production for export and furniture factory for the domestic consumption. The forest product is one of the main sources of export revenues of the GOL. The share of the forest product export of total export has fluctuated between 30% - 40% in 1990 compared with about 10% in 1985. In 1996, the share of forest product of total export value was about 40% . The most important export product is sawn-wood, followed by logs, stumps and knobs, chipboard and plywood. In principle, there is a log export ban, but the pine species are still being export. The main sources for log export are from infrastructure clearance site such as dam, road and other construction area. So, this is means that the volume and value of annual forest export varies greatly.

5. Forest Research Development

1). Background

Before 1985 there was only limited for forest research in Lao P.D.R., although Lao society has inherited a vast knowledge of the properties and use of various indigenous plant. The more notable western inputs have been from French in forest taxonomy and ecology, wood technology (UNIDO) and some species trials for plantations by the Australian Government in 1969-75. Since 1985 the

Government of Laos (GOL) with support from Sweden (SIDA), has established field station at Nam Soung in 1985, Ban Thong Kang in 1988 and Keng Ben in 1992. Trials have been concentrated mainly on indigenous species suited to lowland Laos at Nam Soung; Teak and StyraX at Keng Ben and at Ban Thong Kang development or adaptation of improved land used technologies to reduce shifting cultivation. In 1992 the Government of Australia (ACIAR) initiated comprehensive provenance trials with Eucalypt and Acacia species at Nam Soung and StyraX at Keng Ben.

The Government of Canada (IDRC) has provided support since 1992 to rattan and bamboo studies and Laos is now a member of its network (INBAR). Minor studies have been made by NOVIB of Netherlands on non-timber forest products, which continued under an IUCN project in 1995. Government of New Zealand (GNZ) has supported studies on pine at Xiang Kwang. Laos is also a member of FAO Neem network and has established field trials of Neem at Nam Soung. In addition to the permanent trials/demonstration at field station a number of field projects have been established at different locations since 1991 that can be best described as adaptive model building operation research with in-built training functions for the Lao personnel. Examples of this are:

- Growth rate studies of natural forest.
- Thinning systems for teak plantation.
- Development of Village/State joint forest management models.
- Management systems for natural dipterocarp and pine forest.
- Development of natural forest management plan models.

Since 1996 forestry research activities in Department of Forestry are coordinated and monitored under the Forest Research Center (FRC).

2). Forestry Research Strategy up to Year 2010

A National Seminar on Forestry Research Planning took place in Vientiane 9-11 December 1996. The Representatives of almost all important forestry stakeholders attended the seminar. The participants reviewed the ongoing research and identified the strategies and priorities relevant to emerging needs in the country. Arrangements for undertaking research responsibilities and the mechanisms for improved coordination and collaboration were discussed both in the papers and by the various working groups. Through various projects and other initiatives DOF is now following up the recommendations and other outcomes from this seminar. The first thrust is to further develop the institutional capacity for forestry research in the terms of the human capacity building through short term and long term training program in the country and abroad, strengthening of information services through development of an Information Services Unit; participation in regional and international networks such as Asia-Pacific Association of Forestry Research Institution (APAFRI), TEAKNET, INBAR and International Neem Network, and finally to further develop the organizational framework for research which will include a Tree Seed Center and National

Herbarium. The second thrust is to in cooperation with the provinces and private sector maintain and undertake research in priority areas identified. As numerous issues need to be addressed it is important to priorities what is absolutely necessary. Research and development activities will be directed to:

- Improve the understanding of ecosystem processes to enable the scientific management of conservation areas;
- strengthen the knowledge base to sustain manage the natural forests and plantations;
- reduce wastage in logging and utilization and widen the range of species utilized;
- augment the capacity to manage tree resources as an integral part of farming system, especially in the upland areas.

3). Short Term and Long Term Priorities

Discussion in the previous section primarily adopts a need based approach, or what ought to be done to strengthen the science and technology base of forestry in Lao. But a need-based approach has to be adjusted to resource ability, which at least in the short term will impose serious limitations on what could be achieved.

This would require substantial improvement of the information system and the ability to screen and adapt relevant technologies to the conditions in Lao. Some of the important measures in this direction are indicated below:

Short term priorities

The short-term scenario is dominated by acute resource constraints, more particularly human resources, and although serious, to a lesser extent financial resources. Efforts in the short term should hence be directed at enhancing the efficiency of use of available resources and to build up the foundation for studies/research that would be critical in the long term. One of the thrust areas in the short term would be transfer and adapt technologies from other countries, especially from within the Region. This would require substantial improvement of information system and ability screen and adapt relevant technologies to the conditions in Lao. Some of the important measures in this direction are indicated below:

● **Strengthening information system:** This will be one of the most important elements in improving research and development capability in the short term. Knowing what already exists and obtaining relevant information help to avoid a lot of unnecessary resource consuming research.

● **Improvement of technology screening capabilities:** Once access to information improves, the main thrust should be to screen technologies relevant to Lao conditions. As discussed earlier, a large number of problems are those which require no original research efforts and appropriate solutions based on work elsewhere could be devised. A high priority should hence be given to improve technology screening and adaptation capabilities.

● **Repackaging and extension:** One of the important constraints in improving field level capabilities has been the inability to provide appropriate package of technologies. With the diversification of clients of forestry research, there is urgent need to improve extension skills. Comprehensive information has to be provided to different clients in an easily understandable form. Facilities for this have to be developed in all the major research stations/units. Extensions/ communication skills have to be improved considerably through national and regional training programs.

● **Donor coordination:** Measures indicated above are not highly resource intensive as these could be accomplished through coordinating ongoing activities under various national and regional projects and programs. Such coordination is necessary to ensure that (i) there are no duplication and overlap of effort and (ii) critical gaps does not remain unfilled. Hopefully this could be achieved through the participation of representatives of donor funded projects in the Forest Science Board.

Longterm issues

Evidently the short-term efforts are primarily directed at bridging the gap between what is already known and what is actually practiced, relying primarily on technology transfer. This is essentially on outcome of resource constrains, in particular professional skills and financial/ material resources. However, as indicated earlier, certain areas are less amenable for technology transfer and Lao will have develop necessary capability in this. Specifically this involves identification of areas where indigenous capability has to be developed, preparation of a plan of action and development of human resources to fill gaps that would become apparent in the long term. An important step in this direction has already been taken through upgrading Dong Dok Forestry Department, which will be able to produce graduate foresters. Some of these graduates will be available for research assignments, facilitating implementation of an expanded program than what is feasible now.

● **Priority areas:** Undoubtedly one area that is expected to gain prominence in the long term is the utilization of non-wood forest products, in particular development of marketable products. Unique nature of the products would limit the scope for technology transfer. Further even when technologies exist, they may not be easily accessible and transferable. Considering the diverse nature of products and the technical sophistication that required in producing high quality products, it is imperative that a long-term strategy is formulated and some of the initial steps are taken during the short term. Specifically this would require:

- (i) Product development research in collaboration with the private sector;
- (ii) Development of human resource capability, especially in forest products chemistry; and
- (iii) Establishment of processing capacity, largely through private sector initiatives with support from government.

● **Resource mobilization:** An expanded research and technology development program requires substantial initial investment, far beyond what is available now through government budget. Innovative efforts have to be developed to mobilize resources that could include:

- (i) Charging for the services provided by research units / institutions based on "user pays principle". The scope for user funded research has increased substantially due to the entry of private sector.
- (ii) Creation of a " Forest Research and Development Fund", as has been done in a number of countries and earmarking it exclusively for research and extension will significantly ease the budgetary constraints. Resources to the Fund can be mobilized through a levy or special tax on the value of logs and sawn wood exported from the country.

6. Human Resource Development

1). Current Situation

Statistic taken from the Department's Training strategy for the year 1995 to 2000 show the following breakdown by qualification:

Qualification	Number in 1995	Number in 2000
PhD	5	11
Masters Degree	2	48
Bachelor Degree	148	208
University Diploma	272	208
Forestry Technician	1288	1279

The prime effort within the current planning period is to upgrade the qualifications of the above personnel. A particular emphasis is to upgrade those undertaking Bachelors Degree to Masters level and to raise those who have a Diploma to the Degree level. The Department of Forestry is currently receiving Donor support from a number of donors, most significantly from SIDA, FINNIDA / World Bank, JICA, GTZ and the ADB. While each of these donors is funding a specific program, each contains a specific provision for Competence development/ Human Resource Development. The Sida funded Lao Swedish Forestry Program in particular is currently funding (Budget for 1997/98) 21 people who are undertaking M Sc qualifications primarily in Malaysia and Thailand, with additional specialist qualifications being undertaken in Europe.

2). Vision for The Year 2020

The vision for the Forestry sector for the year 2020 includes the following a breakdown of high level qualifications of the following order:

Qualification	Number in 2020
PhD	20
Masters Degree	100
Bachelor Degree	500
University Diploma	300
Forestry Technician	2000

The trend people's qualifications will therefore be continued. One major initiative will be upgrading of the National University of Laos that will be in a position to produce its own stream of Forestry graduates by the year 2000. In parallel to these developments, further training will take place at the local level. This will be aimed at developing trained Forestry volunteers in each village, having District staff with the relevant Forestry competence and developing Provincial subject matter specialists who are able to supply relevant competence and expertise where it is required.

All current and future Donor Projects should have been institutionalized by the year 2020 and Forestry Department staff should have absorbed jobs currently undertaken by expatriate advisors.

3) Strategies to Realize the Vision

- a. The current training infrastructure within Laos which includes the National University, Technician Training Schools and Forestry extension centers will be upgraded to ensure that their curriculums and teaching staff are able to deliver a product that is suited to the new reality. In particular this will be client focused and therefore producing trainees who are able to respond to needs at the local level.
- b. Staff will be reallocated within the department to ensure that all Provinces and Districts are adequately covered.
- c. District staff will be encouraged to support Forestry volunteers as their prime function to ensure that villagers and farmers are able to interact directly with this first line of technical support. The development of a mentoring process for Forestry volunteers will be given a high priority.
- d. Existing Donors projects and new projects will have to demonstrate the competence development aspects of their program and the relevance to the overall HRD strategy.
- e. The development of twining links between training and research institutions with the ASEAN region will be given a high priority in the next five year period as a mechanism for accelerating the rate of skills transfer.

- f. Women occupy 51% of the population and 50% of the workforce in Lao. They represent a latent talent that has not yet been fully realized. The development of a gender strategy will seek to find mechanisms to use women both as Extension staff and trainers, as well as increasing their representation within the forestry sector.
- g. English language training will continue to be given a high profile to ensure that the Forestry sector is able to access and participate in regional and international initiatives.
- h. The development of a functioning Personnel and Management Information system will be used as a tool to support the above initiatives and to monitor progress on a regular basis.

V. COUNTRY DESCRIPTION

1. Natural and Socio-Economic Condition.

- Total area 236,800 sq km.
- Population 4,581,258 (population census 1995)
- Population density 19.35
- farmers 85%
- GDP <200 USD
- GDP 58% come from agriculture

2. Geographical Condition.

- Mountainous and hill. 80%
- Altitude runs from 180-2820 m
- Mekong River traverse from North to South
- Annual rainfall from 1250-3000mm.
- Average temperature 24°C.
- Raining season April - October

3. Forest Overview.

- 1940 forest cover is about 70%
- Total forest area 11.2 about 47% of country land.
- Slash and burn are the main factor for forest degradation.
- Road and dam construction and illegal trading in fauna and flora are others main factor threat to bio-diversity and environment.
- 1989 First National forestry conference.

- 1991 National action plan

4. Main Forest Policy

- land allocation

- Re-afforestation

- Forest conservation and watershed management

- Wood based industry

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SOURCE OF TABLE

Agriculture statistics 1976-1995 (MAP,1996)

Tropical Forest Action Plan (MAP, Main report 1990)

Watershed and wildlife Conservation on NBCAs

Strategies for Forestry Research in Lao P.D.R. by Working Group on Forestry Research