

Conservation Issues in Asia

REHABILITATION OF DEGRADED FOREST ECOSYSTEMS

in Cambodia, Lao PDR, Thailand and Vietnam

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PREFACE

IUCN's programme in Southeast Asia has expanded during the past few years to become involved in a wide range of conservation and development issues. One of the areas of real concern to all governments in the region is the rapid and extensive deforestation and forest degradation that has occurred in the recent past, and in some cases is still occurring. A clear consequence of degradation is the need for various forms of rehabilitation in order to restore the productive and protective functions provided by viable forest ecosystems.

This regional overview of forest rehabilitation was conceived by IUCN's Forest Programme in collaboration with the following projects and networks:

- Sustainable Management of Resources in the Lower Mekong Basin (MRC/ GTZ)
- Forest Innovations - from theory to practice (IUCN/ WWF/GTZ)
- Working Group on Community Involvement in Forest Management (IUCN)

- Commission on Ecosystem Management (IUCN)

The ultimate purpose of this work and future IUCN initiatives, is to assist stakeholders in the lower Mekong countries to develop and implement ecologically and socio-economically sound forest rehabilitation policies and practices. The intentions of this report are to provide an overview and broad assessment of relevant forest policy and practices, and to encourage discussion among key decision-makers about preferred principles and criteria for guiding future forest rehabilitation programmes.

Under the guidance of Don Gilmour, country case studies were prepared by Mao Kosal, IUCN Cambodia, Xiong Tsechalicha, IUCN Lao PDR, Prasong Jantakad, MRC/GTZ Sustainable Management of Resources in the Lower Mekong Basin Project, Thailand and Nguyen Van San in Vietnam; these studies were the basis for subsequent national workshops. The case studies were based on discussions that took place with many government officials and NGO representatives in each of the four countries in late 1998 and 1999. In addition to their views and personal knowledge, these people provided access to many publications that have informed the reports. This was followed by a workshop in Bangkok in March 1999. Key policy makers from the region and representatives from major international research institutions and NGOs attended the workshop. The reports and the workshop proceedings have provided much of the source material for this particular regional overview.

I wish to record my thanks to the authors and to the many organisations and people who assisted with the development and implementation of this project.

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The staff of the IUCN offices in Vietnam, Lao PDR, Cambodia and Thailand (in particular Nguyen Thi Yen in Vietnam, and Mao Kosal in Cambodia) provided logistical support and back-up during the data collection phase of the study and this is also acknowledged.

Financial support to carry out the work came from several sources, including WWF International. The GTZ-MRC Project through its team leader Dr Hans Helmrich, provided not only significant financial support, but also logistical backup and encouragement. Various programmes in IUCN also contributed financially and technically, in particular the global Forest Conservation Programme and the IUCN Commission on Ecosystem Management.

Dr David Lamb of the University of Queensland, Australia, and a member of IUCN's Commission on Ecosystem Management, was a major contributor to the technical discussions of the national and regional workshops, and provided the text used in Section 4 of this report.

To all of those who contributed, sincere thanks. It is hoped that the material in this publication and the discussions and dialogue that took place during data collection and at the workshop at AIT in March 1999 will contribute to a better understanding of the processes leading to deforestation and forest degradation in the lower Mekong countries. The hope is that all countries in the region can move towards a situation where their remnant forests are being managed sustainably and their degraded forests are rehabilitated to provide a range of goods and services of benefit for the whole of society.

GLOSSARY

Degradation: a loss of forest structure, productivity and native species diversity. A degraded site might still contain trees (ie. a degraded site is not necessarily deforested) but it has lost at least some of its former ecological integrity.

Reclamation: to recover productivity at a degraded site using mostly exotic tree species. The original biodiversity is not recovered although the protective function and many of the original ecological services may be re-established.

Reforestation: the re-establishment of trees and understorey plants at a site previously occupied by forest cover.

Rehabilitation: to re-establish the productivity and some, but not necessarily all, of the plant and animal species thought to be originally present at a site. For ecological or economic reasons the new forest might also include species not originally present at the site. The protective function and many of the ecological services of the original forest may be re-established.

Restoration: to re-establish the presumed structure, productivity and species diversity of the forest originally present at a site. The ecological processes and functions of the restored forest will closely match those of the original forest.

ACRONYMS

ADB	Asian Development Bank
CIFOR	Center for International Forestry Research

DF&W	Department of Forestry and Wildlife (Cambodia)
DNCP	Department of Nature Conservation and Protection (Cambodia)
DoF	Department of Forestry (Lao PDR)
FAO	Food and Agriculture Organisation of the United Nations
FIO	Forest Industry Organisation (Thailand)
FIPI	Forest Inventory and Planning Institute (Vietnam)
FSIV	Forest Sciences Institute of Vietnam
GTZ	German Agency for Technical Cooperation
IMF	International Monetary Fund
IUCN	The World Conservation Union
MARD	Ministry of Agriculture and Rural Development (Vietnam)
MoF	Ministry of Forestry (Vietnam)
MRC	Mekong River Commission
NFAP	National Forestry Action Plan
NGO	Non Government Organisation
RFD	Royal Forest Department
SE Asia	Southeast Asia
SFE	State Forest Organisation
TFAP	Tropical Forestry Action Plan
WWF	World Wide Fund for Nature

1. EXECUTIVE SUMMARY

The four lower Mekong countries of Cambodia, Lao PDR, Thailand and Vietnam have suffered severe deforestation during the past 40 years. Precise figures are difficult to obtain, but the best estimates suggest that about 9 million ha of forest was lost between 1980 and 1990 and that forest cover is continuing to be lost at a rate of about 1.7% per annum. An additional large but unknown area of forest was degraded because of a range of human activities. Much of the deforested land has been used for agriculture, but much has also been left in a degraded condition with greatly reduced productive and protective functions. It is estimated that there are currently more than 23 million ha of bare land that was previously forested in the four countries. Much of this would be suitable for rehabilitation.

Forest policy in the four countries has shifted its focus from exploitation aimed at maximising financial returns, to sustainable management and protection. However, in Cambodia, this shift has barely begun, and the major challenge is to curtail illegal logging, and exercise effective control over concessionaires. As these policy shifts have been taking place in the forest sector, major economic transformations in the overall economies of all countries have also been occurring. The transformations have been designed to move from centrally planned to market economies. This has involved moving towards more decentralised institutional arrangements for managing resources, and in some cases more devolution of authority and responsibility. Allocation of agricultural and forest land from state control to private individuals, households, villages and groups has also been a feature of the recent changes.

A policy vision has emerged in Lao PDR and Vietnam of substantial increases in forest cover during the coming one to two decades, and this has provided the basis for long term planning in the forest sector. Lao PDR is proposing to increase forest cover in the country from the present 47% to 70% by the year 2020. Vietnam is planning to establish 5 million ha of new forest, both plantations and naturally regenerated forest, within the coming 10 years. Part of the vision is also to stabilise or reduce the area of land under shifting

cultivation, which is likely to have particular impacts on upland, generally ethnic minority, communities. In Thailand the government has signalled its intention of retaining most of the remaining forest (about 25% of the land area) as conservation or protection areas and of developing new partnerships with various stakeholder groups to rehabilitate large areas of degraded forests. Implicit within most of the programmes being planned are ideas that the outcomes should be based on:

- a sound understanding of experience of forest rehabilitation schemes compared to expectations;
- policies that prescribe principles and criteria for achieving ecologically and socio-economically sound forest rehabilitation; and,
- institutional capacity to extend and support the application of these policies and practical approaches in the field.

In most of SE Asia, each of these desirable conditions is either absent or weak. The planned forest rehabilitation programmes are new, large and involve multiple stakeholders and multiple sites. Implementing them is complex but there is little pre-existing experience and capacity. There is an urgent need to promote the development of policy, procedures and capacity that can guide rehabilitation programmes more effectively.

Most experiences in rehabilitation of degraded forest ecosystems to date relate to the development of plantations of fast growing species for industrial purposes. An analysis of these experiences suggests that there are major technical and institutional issues to be addressed if future initiatives are to be successful. An important issue common throughout the region is that of tenure, particularly as it relates to access and use rights of natural resources. Ambiguities over tenure constrain the more active involvement of local communities in rehabilitation efforts. Related to this is the need to develop rapid but robust methods (i.e. sufficiently accurate and easy to apply) for participatory land use planning and land allocation.

A challenge to be addressed in the current macro-economic context is the question of payment for the provision of ecosystem services (such as biodiversity conservation, watershed protection and carbon sequestration) by the beneficiaries to the providers. The local communities (who are likely to be the local forest managers) certainly benefit from some ecosystem services, but the major beneficiaries of the services tend to be downstream. This can provide a justification for providing some form of subsidy to encourage local communities to become involved in rehabilitation activities.

Several issues have been identified that need to be addressed to improve both policy and practice relating to forest rehabilitation. Chief among these are:

- improve techniques to characterise degraded land;
- integrate socio-economic and environmental needs into forest rehabilitation initiatives;
- incorporate forest rehabilitation into macro land use planning;
- establish approaches and procedures in each country to achieve active participation of local communities in forest rehabilitation activities (with particular emphasis on land use planning, land allocation and forest management);
- develop improved low cost, robust options for land use planning and land allocation;
- develop national level operational guidelines to translate policy into practice; and,
- carry out applied research work to improve species/site matching, particularly for indigenous species.

It would be advantageous to establish a process to take this initiative forward in a way that is relevant to each of the countries in the region, but in a way in which information and knowledge can be shared across the region.

2. APPROACH TO DATA COLLECTION

The project was initiated in late 1998 with visits to Hanoi, Phnom Penh and Vientiane, where meetings were held with key policy-makers in government, and experienced people in the foreign aid and non-government sectors. Local consultants scoured the published and grey literature to seek information on government policy and practical experiences relating to rehabilitation of degraded forest ecosystems. A draft report was prepared in early 1999 that summarised the material obtained to date. This report was used as a discussion document for a workshop held in Bangkok in March 1999. It was attended by key policy-makers from the region and by representatives from major international research institutions and NGOs, including CIFOR, WWF International and IUCN. Discussions held during the workshop added to and enriched significantly the information previously collated. Information on Thailand was added following literature searches, data analysis and a national workshop in Thailand in late 1999. This present report is a synthesis of all the information collected during the

course of the project and represents contributions from many people.

3. INTRODUCTION

The three countries of Vietnam, Lao PDR and Cambodia have shared a similar history during the past 50 years. All were colonised, suffered from devastating wars and in recent decades have been working towards building modern economies based on sustainable resource management. During these various phases, forests tended to suffer. They were easily exploited to mobilise capital for fighting wars and later for national development. The forests were also damaged by the war (defoliants, bombs and napalm fires), especially in Vietnam. Thailand has had a somewhat different history, as it was not colonised and has not suffered the devastating effects of war. Nonetheless, its forests tend to have been degraded in much the same way as occurred in the other countries in the region. In all the four countries accessible forests have been logged to maximise commercial output and short term financial gain. In addition, a great deal of illegal logging has taken place (and in some cases is still taking place). While logging does not necessarily lead to deforestation, it invariably leads to substantial degradation when it is carried out with little or no regard to long term sustainability. In many cases, logging has been followed by encroachment for agricultural expansion. A growing on populations place additional demands on forests for both subsistence and market goods. Forests are often seen as appropriate places to absorb people from overpopulated parts of the country, and at the same time increase agricultural production. Many of the upland areas of all four countries are home to a large and diversity number of ethnic minorities. Many of these people are shifting cultivators and their land use practices have also impacted on forests. Large areas of the uplands are covered by regrowth forest or, in some cases, by grassland as part of the shifting cultivation cycle.

During the past decade there has been an increasing awareness of the importance of forests not only for producing commercial timber but also for providing a much wider range of goods and services. In most countries of the region, non-timber forest products are important for both subsistence and market purposes. The role of forests in providing environmental services such as watershed protection, biodiversity conservation and carbon sequestration is also receiving increasing attention.

For some years, national and international attention has focused on the parlous state of tropical forests and on ways of improving the situation. This report provides an overview of the status of forests in the four lower Mekong countries, and on approaches being taken to rehabilitate degraded forest ecosystems in the region.

4. CONCEPTS AND DEFINITIONS FOR FOREST REHABILITATION (BY Dr. DAVID LAMB)

4.1 Methods of overcoming degradation

Degradation is a subjective term. A newly cleared area of forest might be regarded as prime agricultural land by a farmer, but as degraded wildlife habitat by a bird enthusiast. To some extent, degradation is in the eye of the beholder. On the other hand, many would agree that once-forested land that has lost both its structure and diversity and is not used in any productive way is now, in some sense, "degraded". The two main components of degradation are shown in Figure 1. One component is the proportion of the original biodiversity still present and the other is the proportion of the original structure or productivity remaining. The original undisturbed ecosystem is at point A while point B represents the same site in a degraded state. The degraded area now has less biodiversity and is at a lower level of productivity or structure. The degraded site might degrade even further, perhaps because of recurrent fires (point C) or, if not disturbed further, might gradually recover, unaided, back to point A. Circumstances under which this recovery could occur are described further below.

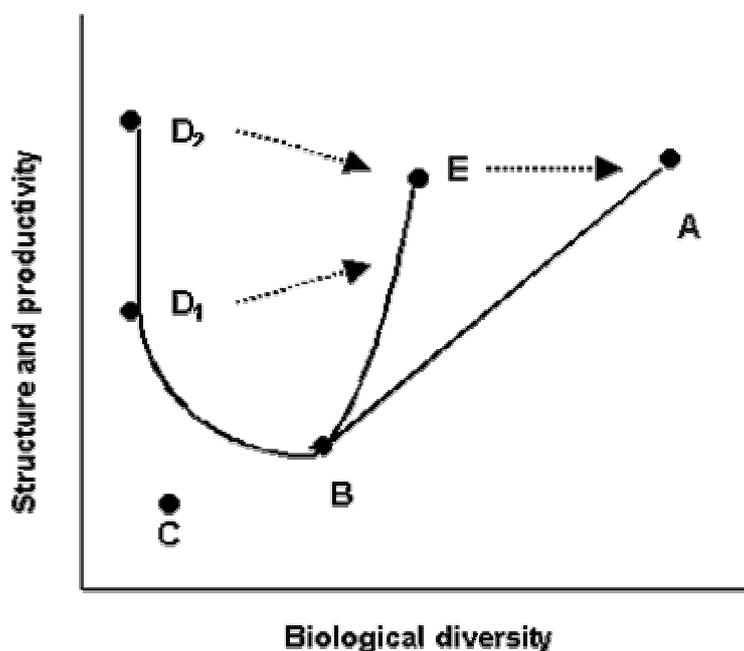
The process of recovery can be accelerated by reforestation, but there are several ways in which this might be done. Each leads to a different outcome. Restoration describes the process in which the aim of reforestation is to restore the ecosystem back to its former condition (point A) containing the original complement of plant and animal species. At this point the ecosystem will have regained its original structure and productivity and the ecological processes that sustained the system will have been re-established. (This definition may be too exclusive in some situations and the notion of "restoration" is discussed further below). Reclamation, on the other hand, attempts to restore structure and productivity but not the original biodiversity (point D). Reforestation may be carried out using a single species and that species might be an exotic tree species planted for commercial purposes. The structure and productivity may be partially regained (point D1) or even exceed that of the original ecosystem because of the use of fertilisers or other management inputs (point D2).

Between these two approaches lies a mid-way position that might best be described as Rehabilitation. This may recover the original structure and productivity but may not recover all of the original biodiversity (point E). The new ecosystem may contain a mix of native and exotic species. Over time, the new systems at D and E may gradually drift towards point A as some of the original species recolonise from intact forest nearby or they may remain in a partially restored state if no recolonisation takes place.

These three forms of reforestation are a necessary simplification of the variety of methods of reforestation that might take place on degraded lands. They differ in the degree to which biodiversity is recovered, but they also share certain common attributes. These include the fact that a new stable and productive land use have been achieved and that at least some of the ecological services and protective functions of the original forest has been recovered.

Figure 1. Various methods of reforestation after degradation. Degradation has moved the system from its original state at Point A to a degraded state at Point B. Over time the site can degrade further, C, or recover naturally to A. Reclamation via monocultures can lead the system to D₁ or D₂ depending on the productivity achieved. Rehabilitation may recover most of the structure and productivity but only part of the former biodiversity, E. Over time some of the original species from intact forest may re-colonise the forests at D and E causing them to drift back towards Point A.

Figure 1



4.2 Can restoration ever be achieved?

Some have questioned if reforestation can ever achieve complete ecological restoration and recover all the biodiversity once present at a degraded site. For example, restoration implies that the original species complement at a site is known and that this composition was static. But the original state of many long-degraded sites is often poorly known and successional development is more common than any static "climax" condition. Even without degradation, changes might have occurred to the original condition in both space and time. Changes can also occur in landscapes intensively modified by human activity such as the Mediterranean Basin. Some of the original species can be driven to extinction following deforestation and fragmentation, while some exotic species may become naturalised and be difficult to eradicate after a long period of human use. These difficulties may mean that restoration is sometimes an uncertain target that might be difficult to achieve in practice. For these and other reasons, the Society for Ecological Restoration defines ecological restoration as *"the process of assisting the recovery and management of ecological integrity. Ecological integrity includes a critical range of variability in biodiversity, ecological processes and structures, regional and historical context, and sustainable cultural practices."*

Ecological restoration may also be difficult for other reasons. In some severely degraded sites the numbers of species to be restored may be too high or the magnitude of the changes such as exposure, topsoil erosion or

increases in salinity may be so great that restoration is too difficult to achieve even if the technical means were available. The costs of attempting full restoration of the original system might simply be too high. In some situations social constraints may also apply. Some traditional land owners or managers may be unwilling to agree to restoration of degraded sites they are not currently using because it is not a goal they share or because they believe restoration might somehow lessen their rights to its future use. In such cases outside intervention to achieve restoration is unlikely to be successful.

None of these constraints mean that reforestation to improve the biodiversity across degraded landscapes is not worth attempting. Rather, they simply point to the fact that different ecological and social situations will require different approaches.

4.3 Methods of reforestation

In some situations degraded forest ecosystems can recover unaided. A well-known example is the reforestation that has occurred over the last 100 years on much of the north-eastern USA following the abandoning of some of the land previously cleared for agriculture. The former farm sites are now occupied by deciduous woodlands with a structure and diversity probably similar to that which was originally present. This same natural recovery process can be found in many other temperate and tropical forests. The rate at which such successions take place varies widely but most are usually slow. Natural recovery after degradation is not an invariable process and it only takes place under certain conditions. In all cases the disturbing agents that were the causes of degradation must have been removed and the original topsoils must have remained more-or-less intact. Furthermore, remnant communities of the original forest species must have persisted on the landscape to act as a source of propagules and colonists for the new succession.

A particular problem with such slow recovery processes is that it increases the risk that sites might be damaged again by disturbing agents such as fire or grazing that degrade the site once more (and take it back to point B or C on Figure 1). Alternatively, new land users may appear and think a site has been abandoned because they are unaware it is being reforested. More active reforestation programs may be needed to accelerate the process and overcome these risks. These programs can take a variety of forms but all require that the causes of degradation (fire, grazing, firewood collection etc.) be removed and that sites be actively protected. The subsequent reforestation process can then be carried out by direct seeding or by planting seedlings.

5. STATUS OF FORESTS IN THE LOWER MEKONG REGION

The lower Mekong countries of Cambodia, Lao PDR, Thailand and Vietnam have experienced high levels of deforestation and forest degradation during recent decades. The reasons for this are varied, but include logging (legal and illegal); expansion of agricultural activities (government sponsored and spontaneous); war; building of infrastructure such as roads and dams; and shifting cultivation. Accurate statistics are difficult to obtain but FAO estimates shown in Table 1 indicate that net deforestation is still occurring in all countries with an annual loss of about 1.7% in forest cover throughout the region (based on figures between 1990 and 1995). It should be noted that the estimates of forest cover tend to be based on aerial photographs of varying ages. Consequently the data should not be considered as up-to-date, and may be up to a decade old by the time of data publication.

Table 1. Forest cover in the lower Mekong countries

Country	Forest Cover, 1995 % of land area	Forest/Capita, 1995 ha/person	Change In Forest Cover, 1990-95 % change/annum
Cambodia	55.7	1.0	-1.6
Lao PDR	53.9	2.5	-1.2
Thailand	22.8	0.2	-2.6
Vietnam	28.0	0.1	-1.4
Regional average	40.1	0.9	-1.7

Source: FAO, 1997

Estimates for the 10 year period from 1980 to 1990 suggest that more than 9 million ha of forest was lost during that period in the four lower Mekong countries (FAO, 1995). The figures for each country are shown in Table 2.

Table 2. Changes in natural forest areas, 1980-1990

Country	Natural Forest	
	Area (1990)	Change/an. (1980-90)
	1,000 ha	
Cambodia	12,163	-131
Lao PDR	13,173	-129
Thailand	12,735	-515
Vietnam	8,312	-137
Total	46,383	-912

Source: FAO, 1995

Some sources give much higher estimates for the rate of net deforestation in some of the countries. For example, MoF, 1995a estimated that Vietnam was losing forest cover at the rate of 200,000 ha per year. Also, in Vietnam it has been estimated that tree cover occurs on only 50% of designated forest land (i.e. those lands designated as Special-use Forests, Protection Forests or Production forests). The situation is shown in Table 3.

Table 3. Categorisation of forest land in Vietnam in 1995

Forest Class	With Tree Cover 1,000 ha	Without Tree Cover 1,000 ha
Special-use forest	700	200
Protection forest	2,400	3,300
Production forest	6,200	6,200
Total	9,300	9,700

Source: MOF, 1995

The status of "forest" land without trees is shown in Table 4.

Table 4. Status of "forest" land without trees in Vietnam

Status	Area 1,000 ha
Land covered with bush (shrubs)	3,500
Land with good grass cover	3,500
Land with poor grass cover	2,500
Bare rock	200
Total	9,700

Source: MOF, 1995

A similar situation prevails in Lao PDR (Table 5) and Cambodia.

Table 5. Status of non-agricultural land in Lao PDR

Region	Total Land Area	Forest Area	Potential Forest Area		
			Bamboo	Unstocked	Grassland
Area in 1'000 ha					
North	11,312	4,513	705	4,641	549
Centre	5,737	3,179	434	923	129
South	6,630	3,945	318	872	126
Total	23,679	11,637	1,457	6,436	804

Source: National Forest Inventory, National Office of Forest Inventory and Planning, quoted in Lao-ADB Plantation Forestry Project 1995.

As Table 5 indicates, there is a total of almost 8.7 million ha of land throughout the country with the potential to be tree covered.

In Cambodia, an analysis carried out by the Land Use and Mapping Office estimated that in 1993 there were almost 2.3 million ha of shrubland (double the figure 20 years) plus 280,000 ha of "abandoned" land (Carle, 1998). The shrubland would have been high forest in decades past.

The land cover in Thailand is divided into several categories. In the Conservation Zone (Zone C) it is estimated that about 898,000 ha are in need of rehabilitation, while in the forest reserves (Zone E) it is estimated that about 1,408 million ha are in need of rehabilitation (S. Sukwong pers.com.). Thus, the total area with the immediate potential for rehabilitation is about 2,306, million ha.

Table 6 summarises the area of land that would be potentially available for some form of rehabilitation.

Table 6. Area of land potentially available for rehabilitation

Country	Area of Land Potentially Available for Rehabilitation 1,000 ha
Cambodia	2,600
Lao PDR	8,700
Thailand	2,306
Vietnam	9,700
Total	23,306

In addition to the land indicated in Table 6, there would be a vast area of forest that has been degraded, but not to the extent of being classified as shrubland or bare land.

While there may be some debate over the accuracy of these figures, it is clear that irrespective of the precise numbers, there is an enormous area of land with some potential for rehabilitation. Of course, this does not imply that all of this land which is potentially available is unused, unclaimed or totally unproductive. Much of it would be providing subsistence products such as fuel wood, charcoal, building material and non-timber forest products. The interaction between local communities and the forest land in their immediate vicinity is discussed in more detail in a later section.

6. RECENT EVOLUTION OF FOREST POLICY

There has been a somewhat similar evolution of policy for forest land in each of the four countries, although differing situations in each country means that they are at different positions on the evolutionary path. This evolution needs to be seen in the context of the shifts in economic policy that are driving development. Perhaps the most important of these is the transition from centrally planned to market economies. Concomitant with this has been a move towards decentralisation and devolution of authority for land management from central government to lower levels of government, to communities and other groups and to individual households. This has been translated into national programmes aimed at allocating land (particularly agricultural land, but increasingly also forest land) to individual households and to organisations that include (in some of the countries) the military and police. Communities are not excluded from the land and forest allocation process, but progress in allocation of forest land to communities has been slow. Furthermore, there is little evidence of serious commitment to real devolution of power, even though most outside observers see community involvement as one of the keys to achieving long term sustainable forest management (e.g. Poffenberger, 1998). A summary of the key points for each country follows, and more details are given in Appendices 1 to 4.

6.1 Cambodia

Following independence in 1953, the first Forest Law, the Code Forestier 1961, was developed. This attempted to set a basis for forest classification, with management focused primarily on forest exploitation. Approximately one-third of the country was covered by a forest inventory by 1957 and the forest areas were classified into 173 forest reserves and six wildlife protection areas. These covered 3.9 and 2.2 million hectares respectively (Ashwell, 1996). There was no consideration within the Code of the rights of local communities. This law had serious shortcomings and was never really implemented. In addition, the Code was essentially ignored during the Khmer Rouge period from 1975 to 1979.

The current regulations governing forest land allocation and forest management are complex, inconsistent and unenforceable--an unclear legal framework has made enforcement by forestry and other officials difficult if not impossible (IUCN, 1998). More importantly, the country has been in a state of political and social turmoil for 25 years, and control over forests by powerful figures has been one of the ways of raising funds to retain power. Allocation of access and use rights by those who can assert control has been a major mechanism of commanding political allegiance. This has made any rational approach to land management extremely difficult to achieve.

As political stability is slowly being attained there are possibilities that more equitable and sustainable approaches to forest land management may become possible. The government, with the support of several donors, is currently engaged in a thorough review of forest policy. Among the papers commissioned for the review are some which deal explicitly with rehabilitation of degraded forests (Carle, 1998), land allocation (Butterfield, 1998a) and the role of local communities in forest management (Butterfield, 1998b). A forest law was drafted in 1998 and submitted to the Council of Ministers, although it was subsequently withdrawn pending decisions on the outcome of a major forest policy review finalised at the end of 1998.

Senior members of the government acknowledge that there are currently three critical issues to resolve in relation to forest policy in Cambodia. These are:

- How to arrest the illegal log trade?
- How to orient concessionaires to move towards sustainable forest management?
- How to rehabilitate degraded and deforested land?

The international community has been putting pressure on the Cambodian government for some years to exercise control over its forest lands to reduce the rampant unsustainable exploitation (see, for example, Global Witness, 1998). The IMF has made future financial support conditional on making progress in this area. The more responsible members of the timber industry support this approach as they see their long-term investments producing a reasonable return only if this is done (Henry Kong, pers. com.).

Clearly, little real progress can be expected on such aspects as forest rehabilitation and land allocation until the major issues related to exercising the rule of law over the forests are resolved. Useful experiences, generally small scale, on working with provincial authorities and local communities are being gained through the intervention of NGOs (Concern, 1998). Some attempts are also being made by a few progressive logging companies to engage meaningfully with local communities. These could be the building blocks for future larger

scale programmes.

6.2 Lao PDR

Prior to 1975 the development and implementation of forest policy was limited primarily due to the on-going war. The forestry sector was focused on the commercial extraction of wood for export, and there tended to be very little regulation. Other activities at this time were directed towards establishing species trials, partial forest reconnaissance and training in forestry techniques.

After 1975, efforts were concentrated on reorganising the economy. Since 1976 the government has demonstrated an interest in stopping shifting cultivation by encouraging upland communities to adopt sedentary agricultural practices. These efforts have met with only limited success, although government efforts to stabilise or reduce the area of land under shifting cultivation have recently intensified. During this period, nine State Forest Enterprises were established to undertake a combined responsibility for logging operations and forest management. However, the major focus became the maximum exploitation of timber, and little or no effort was made to ensure that sustainable management practices were implemented.

The year 1989 was something of a turning point for the forestry sector, following the holding of the first National Forestry Conference. It marked a shift from exploitation-based forestry to the "preservation, planting and development of forests" (Resolution of the First National Forestry Conference, 1989). It was acknowledged that deforestation and forest degradation had reached a critical stage, and that forest restoration, preservation and reforestation were seen as matters of necessity and urgency. Three strategic directions were laid down by the conference. These were:

- preserve the extent of present forests;
- implement the rational use of forests and forest resources; and
- carry out the restoration, preservation and development of forests in connection with the need of cereal production to encourage the permanent settlement of the 1.5 million people then engaged in slash and burn farming.

This strategic focus provided the basis for the development of the Tropical Forestry Action Plan for Lao PDR (TFAP). Subsequently, a series of decrees was promulgated aimed at giving a legal basis for the implementation of these directions. Among the programmes emanating from the TFAP was one which promoted plantation forestry. The objective is to rehabilitate and reforest unstocked forest land as well as denuded or eroded land. It is perceived that the private sector (individual farmers, communities and companies) will play a much greater role in these activities.

A recent development has been a decision to allocate forest land to individuals and communities to carry out sustainable forest management. In the case of communities, the approval to harvest non-timber forest products is considered to be an incentive to manage and improve the allocated land. However, important trials are also being implemented to test the involvement of communities in commercial timber harvesting and related management activities. Many of these new directions are embraced in a new Forestry Law, adopted in 1996, which signified a move towards the comprehensive management and utilisation of forest resources, including the legal provision for reforestation.

6.3 Thailand

The history of Thai forestry can be divided into four stages:

- i. Mid-1890s to early 1930s. This is referred to as the stage of exploitation with the RFD being established in 1892 to regulate forest exploitation, particularly in the northern teak forests. During this time, commercial logging commenced.
- ii. 1930s to early 1960s. This stage is called the forest exploitation and management period when logging became an important economic activity. During this time, the Forest Industries Organisation (FIO) was established.
- iii. 1960s to 1980s. This is the stage when forest exploitation peaked and declined. During this period, export-oriented agriculture expanded rapidly, and national economic development gained momentum. Forest management was also introduced but achieved only limited success; and
- iv. Late 1980s to the present. The forest declined to a point where the nation decided that the remaining

forest should be kept for conservation rather than further exploitation.

Timber from Thailand, particularly teak, has long been a valuable export commodity on the world market. Records show that in 1927 there were 32 forest concessions in force, mainly operated by European companies, and that these yielded 1.5 million teak trees (Tai-Usa 1992).

For more than a century, Thai forestry operated in the form of a partnership aimed at producing commercial timber. The first partnership was between the feudal chiefs and logging concessionaires in the 1880s. However, it soon became evident that exploitation was not well controlled, and King Rama V established the Royal Forest Department in 1892 to exercise some control. This started the second partnership, between the State and logging concessionaires. The RFD was mandated to oversee timber harvesting and regularise tax revenues. Perhaps the most far reaching change was the vesting of all forest land in the King. During more recent times the Department has been involved in establishing a regulatory framework to define forest management procedures and practices, with the aim of ensuring that the forest was managed sustainably. However, in reality, the industry maintained the major control over forest operations, with the result that the forests were rapidly over-cut and became degraded.

Forest conservation became a more explicit part of management in the 1960s with the establishment of the first National Park. This marked the beginning of an era where conservation and protective functions of the forests began to assume greater significance. This era culminated in some respects with the issuance of a Royal Decree in January 1989 terminating timber concessions in the uplands. This was in response to severe flooding and consequent loss of life that were presumed to have been linked to industrial timber harvesting. Strong public pressure played a significant role in influencing these official actions, and demonstrated the increasingly powerful role being played by civil society in national resource management decision making.

A fundamental problem with both the partnerships described above, was that the large number of people who lived in and around the forests, and who depended on the forests for subsistence and other purposes, were largely excluded from participation¹. Local people were alienated from the process and were considered to be illegal encroachers. During the past 20 years the relationship between the RFD and the citizens of Thailand could be characterised as divisive - "...strong links to an authoritative establishment and arbitrary enforcement of laws have resulted in alienation of the populace and NGOs by RFD" (IUCN 1996)².

The Government has embarked on a series of initiatives to encourage protection of the remaining forests and to encourage private sector involvement in the development of plantations. Several groups have become involved in establishing fast growing species, generally eucalypts, to meet pulpwood demands.

Natural forests have declined dramatically in both area and quality throughout this century, and it has become clear that other forms of partnership will be necessary if forest degradation is to be halted and reversed. At the present time there is vigorous debate within the bureaucracy and civil society about the nature of the partnership needed to ensure that Thailand's forests are managed in a sustainable and equitable fashion.

Mingsarn *et al.* (1995) reported that the perception of environmental degradation by many of the Thai conservation NGOs (generally urban based) is similar to that of the government and academics. Deforestation, water use, urban and industrial pollution are all priority issues for these NGOs, as they are for government agencies. However, the two groups have different views on the possible causes of these problems and on the approaches needed to solve them. Conservation NGOs have focused on forest conservation as one of their major concerns. They also attempt to draw the government's attention to the negative impacts of infrastructure development, such as dam construction, on forest and watershed ecology as well as on the forced eviction of rural communities from forest reserves.

Meanwhile, development NGOs tend to emphasise community forestry as a potential answer to forest conservation problems and as an important tool to achieve sustainable land use and rural development (Mingsarn *et al.* 1995). Some NGOs have strongly resisted commercial plantation schemes while the government sees commercial plantations as part of the solution to address the shortage of industrial wood products caused by deforestation and forest degradation.

6.4 Vietnam

Following the French departure from Vietnam in 1954, several significant changes took place that had long-lasting effects on the way in which forests were perceived and managed. Agricultural land was placed into cooperatives, and most forestland was nationalised and put under the management of cooperatives and state

units (later to become State Forest Enterprises). The emphasis was on forest logging for financial benefit and to create land for cropping. Forest policy was to "serve as a basis for the development of agriculture" (MoF, 1991).

Central planning strengthened in the north after 1965 due to the intensified war effort in the south, although local authorities were given more authority over forest management in 1968. The emphasis remained on increasing industrial production from forests and serving agricultural needs, including providing watershed protection. This emphasis was given more attention with an Act on Forest Protection in 1975, which introduced regulations regarding exploitation (including swidden agriculture), replanting and protection. A Department of Fixed Cultivation and Sedentarisation was set up in 1968 to stop swidden agriculture and resettle shifting agriculturists (and later, farmers from the heavily populated deltas).

After the end of the war, considerable emphasis was placed on increasing production. This resulted in severe over-exploitation of the forests, because production quotas were set based on state needs rather than the productive capacity of the forests.

By the mid 1980s it was becoming recognised that the natural environment had degraded to such an extent that it was officially observed that "growing of industrial crops in monoculture and rotational extensive cropping systems did not protect the forest vegetation" (MoF, 1985). Protection activities began to receive much more attention.

The economic crisis in the early 1980s led to a major policy reform by the mid-1980s. This renovation of policy, "*doi moi*", has been marked by a transition from a centrally planned to a market economy; a reduction in the role of government, particularly in production and trade and decentralisation of planning and decision making to provinces and districts. Agriculture has been decollectivised and most agricultural land has been allocated to farmers. This resulted in a dramatic increase in agricultural production. Agro-forestry was also heavily promoted. During the 1980s, State Forest Enterprises became more involved in expanding forest plantations, but their subsidies were cut.

FAO sponsored a thorough review of the forest sector in the early 1990s that led to the development of a National Forestry Action Plan (NFAP). Among the guiding principles of the NFAP were increased decentralisation and people's participation; restructuring of institutions dealing with forestry to make them more supportive of local initiatives; environmental protection and increasing the incomes of people living in forest areas. A series of laws and decrees, directions, regulations, guidelines and circulars has been passed to attempt to operationalise the policies outlined in the NFAP.

Government decisions have also been taken to accelerate the transfer of public forest land to individuals, farmer households, communes and other social groups (including the military and police) in an attempt to encourage the planting of commercial fast growing tree crops.

6.5 Summary of policy evolution

The forest policy focus in most countries in the region has shifted dramatically during the past few decades. The earlier emphasis was on state control aimed at maximising production of industrial timber and using forest land as a land bank for expanding agriculture. This has shifted (or is shifting) towards an emphasis on decentralisation and devolution of authority; some private and communal control; and a focus on sustaining and restoring the resource base to provide a range of forest goods and services. Forest conservation has become important, and has resulted in the widespread establishment of protected area networks. The evolution of policy in the forest sector has been part of the much wider economic transition sweeping through the region. It has also been driven in part by national and international attention given to the rapid degradation that is taking place in the region's forests.

The growing interest in involving local communities in forest management is a reflection of the fact that central governments, acting alone, cannot resolve forest problems, particularly at a time when state institutions are in decline. It is probably also a reflection of the fact that most of the easily extracted wealth has been taken from the forests, leaving behind a degraded resource.

It is inevitable that dramatic policy changes such as those that have taken place during recent decades will cause tensions and uncertainties within the bureaucracy as well as among the general population. The government in most countries is composed largely of ethnic groups from the lowlands who influence the shape of policy. However, most forests are in the uplands which are peopled by ethnic minorities who have their own

customs and traditions for forest management. Reconciling these different points of view is one of the challenges still to be met.

7. VISION FOR THE FUTURE

The growing realization, both nationally and internationally, of the scale and extent of deforestation and forest degradation in the region has focused attention in most countries on forest policy to stabilise and restore forests. This has resulted in conscious attempts to articulate a vision of what the forest landscape will look like in the future. This has benefits at both political and policy levels, and can assist in carrying the government's message to the population.

In Cambodia, this process has barely begun because of the overwhelming task faced by the government of gaining effective control over the nation's forests and their management. However, following the elections in July 1998, the Co-Prime Minister acknowledged that the forests of Cambodia had been devastated more seriously in the previous four years than in the past thousand years of Cambodian history. He stated that failure of forest policy was a major weakness of the first term of government, and implementation of an effective forest policy was of the utmost importance.

In 1997, the government of Lao PDR produced a Vision 2020 (Sawathvong, 1998), in which a policy goal was outlined to increase the level of forest cover in the country from the present 47% to 70% by the year 2020. One of the seven strategic priorities outlined in the vision statement is the allocation of land to rural families and enterprises for afforestation. Thus, approximately 2 million ha of degraded forest is expected to be rehabilitated and 0.5 million ha are targeted for reforestation (Kingsada, 1998). The approach proposed to implement this programme will depend on the extensive involvement of small farmers planting on their own land rather than large companies planting large contiguous areas. It is expected that at least 40% of the species to be planted will be teak and other native species.

The government of Thailand cancelled logging concessions in natural forests in 1989, partly in response to the fact that the forest administration had lost effective control over logging. This action was also interpreted as a signal that forest conservation and protection were more important to the Kingdom than industrial wood production. The cancellation was made permanent in 1992 and state forest administration has moved from wood harvesting to conservation forestry. The 7th Five-Year Plan (1992–1996) proposed that 25% of the Kingdom should be protected as conservation forest (i.e. virtually all of the remaining forest). The 8th Five-Year Plan (1996-2001) reinforced this shift with guidelines that emphasise protection of the remaining forest and the promotion of forest rehabilitation and reforestation.

In the early 1990s, the Government of Vietnam outlined a programme to "regreen the barren hills", in recognition of the need to reverse the alarming trends in loss of forest cover. This was formalised as Decree 327/CT in 1992, and laid the basis for a radically different approach to forest establishment and management. It was perceived that large areas of new forests would be established throughout the country by contracting farmers and others to plant and maintain trees—mainly fast growing exotics.

The 327 programme has evolved into a new structure—the Five Million Hectare Programme, which commenced in 1998. This builds on the experience of the 327 programme, and the contractual basis of carrying out the work (planting, tending, protecting, etc.) remains the same. It envisages the establishment of 5 million ha of forest between 1998 and 2010 to increase the forest cover to 43% (from the present 28%). One significant change is the targeting of 1 million ha for rehabilitation by natural regeneration. Two of the stated objectives are to protect the environment and maintain and develop biological diversity.

A summary of the vision emerging from the governments of Cambodia, Lao PDR and Vietnam can be obtained from Table 7 which represents the views of the participants at a workshop in Bangkok in March 1999.

Table 7. Characteristics of future rehabilitated forested landscapes in Cambodia, Lao PDR and Vietnam.

Country	Characteristics of Rehabilitated Forested Landscapes				
	Species	Productivity	Mix of products	Landscape patterns	Management control
Cambodia	Indigenous, multi-	Increased timber	Mixed products	Agro-forestry	Local communities

(short term)	purpose	Nitrogen fixing		mosaic production	(with land use rights and government incentives)
Lao PDR (to year 2020)	Indigenous and exotic species, fast and slow growing	Increased timber production for household use and industry	Mixed products and environmental services	Mosaic of agriculture and forests	Joint management, private sector involvement (with technical and policy support from government)
Vietnam (to year 2010)	Indigenous and exotic species	Increased timber production	Timber, agricultural products, NTFPs	Mosaic of small, scattered patches of forest in an agricultural landscape	Small land holders (following a process of land allocation)

Source: Discussions at the consultative workshop held in Bangkok, March 1999.

8. PEOPLE AND FORESTS

The shift towards decentralisation and devolution of authority that characterises the policy transformations currently taking place, brings into sharp focus the interactions between rural communities, the government and forests. All countries in the region have large populations of rural people living in close proximity to the forests and dependent on them for subsistence, and commercial purposes. Many of these communities had long-standing and close association with the forests and, until after the Second World War, resource management in the remoter regions was left largely in their hands. In many cases, there were local institutional arrangements which defined access and use rights to the forest. Nationalisation of the forests legally disenfranchised these people, but in many cases they retained usufruct rights "extra-legally". However, as state control spread, local communities came into closer contact with government functionaries. Tensions increased, particularly where upland land use practices did not conform to those of lowland (mainly ethnic majority) farmers. There was little appreciation by government functionaries of the importance of forests to local communities in terms of food security, income, nutrition, employment, energy sources and overall community well being. The large-scale exploitation of commercial timber from the forests during the past few decades brought few benefits to upland communities, who became even more marginalised from mainstream development.

The current emphasis on rehabilitation of degraded forests provides opportunities to build new relationships between governments and local communities based on collaboration rather than confrontation. However, this will require significant changes in attitudes and working relationships, as well as a continuing evolution of policy. Progress is likely to be slow, partly because of entrenched attitudes in the bureaucracy embedded in a past view of the world. Nonetheless, there seems to be an inevitability about the general direction of policy, with governments throughout the region (and indeed the world) devolving more rights and responsibilities to various actors in civil society.

9. EXPERIENCES IN REHABILITATION OF DEGRADED FOREST ECOSYSTEMS

All countries in the Lower Mekong region have some experience in establishing plantations, mainly with an emphasis on industrial wood production. However, there is little experience (with the possible exception of Thailand and Vietnam) in planning for and managing operations on the scale being proposed. In addition, there is little experience in forest restoration or watershed rehabilitation, with the exception of Thailand.

In Cambodia, during the period from 1915 to 1972 supplementary plantings were carried out in natural forests at the rate of 300-400 ha per year to assist in the replenishment of valuable tree species in logged areas. Some plantation establishment was also carried out. The main species used were *Tectona* and deciduous species, and the total area planted was about 5,470 ha. In the period 1985 to 1997, a further 2,000 ha of fast growing species (*Acacia*, *Eucalyptus*, *Tectona* and *Pinus*) were planted. There are no records of survival or growth rates of these plantings although anecdotal reports suggest that cutting and fire have destroyed many of them (Carle, 1998). Forest concessionaires are not required to carry out any rehabilitation work as they pay a reforestation tax to the government for this purpose, although the government does not carry out any such activities. During recent years some valuable experiences have been obtained with small holder and

community rehabilitation efforts--generally with the support of international agencies and NGO groups (Burgess, 1998; Fox, 1997). There is growing interest in focusing on community participation for future rehabilitation activities, including inside recently established protected areas (Swift, 1998).

Tree planting, mainly with Teak, began in Lao PDR as early as the 1930s, although records (along with most of the trees) from that period have not survived. From 1975 the Department of Forestry started systematic species trials; in 1990, small scale production plantations were established; and from 1993 plantation forestry has involved the investment of the private sector. A survey in 1990 indicated that the actual plantation area in the country was 2,900 ha, whereas official figures suggested that 6,250 ha had been established. The discrepancy is accounted for by double-counting during replanting, and including areas that were too poor in quality to qualify as effective plantations. Among the reasons cited for poor performance were poor maintenance and lack of thinning (Forest Inventory and Management Office, 1991).

For some time there has been a major policy focus on rehabilitating degraded upland watersheds. The activities have concentrated on the watersheds of Nam Ngum in Vientiane and Xieng Khouang Provinces. The emphasis has been on rehabilitation and protection of young fallow areas through community participation. Planting has consisted of a mix of high value native and fast growing exotic species. In the Nam Ngum watershed, non-timber plant species are also being considered for planting to provide a future resource of non-timber forest products. These efforts are still in the pilot stage and it is too early to judge their effectiveness.

The first reforestation trial in Thailand was initiated in 1916 in Phrae Province by using direct seeding, although there seem to be no records of the results. Larger scale efforts date from the 1960s and have been concentrated on degraded forest land both inside and outside conservation forests. The major objective of activities outside conservation forests has been to produce an industrial crop for the wood processing industry. Activities inside conservation forests have aimed primarily at rehabilitating the protective function of the forest. The emphasis in many of the programmes has been to create "protective" forest cover for watershed protection. However, because of the view of RFD staff about the legitimacy of people residing inside forest reserves, local people's needs are not considered in most of these programmes, regardless of how important the forest is to supporting local livelihoods³. Consequently, many activities (particularly in the past) tended to be very top down in planning and implementation and excluded local people from any meaningful role. In addition, most reforestation projects use monocultures, particularly pines, in watershed areas, and these have limited value for local people. Eucalypts have also been promoted throughout the country for industrial plantations and in some cases as agro forestry crops. These also have limited value to local people.

In 1996, the Northern Farmer Network in the eight provinces of upper northern Thailand made plans to initiate forest rehabilitation and forest protection which they called the "50 million tree ordination". About 100 community forests have been selected as sites for planting 50 million trees under this programme, covering an area of 25,600 ha. However, it is too early to judge the effectiveness of this initiative.

In the 1993 change of government policy on reforestation, emphasis was directed towards supporting farmers to plant trees on their own land. This programme aimed to reduce the conflict with local people over land use rights, to reduce forest encroachment and to increase the production of economically useful trees. The programme provided cash incentives for up to five years for farmers to plant and protect trees. The total incentive amounted to 3,000 Baht per rai per year. However, uncertainties over the allocation of benefits from the forest limited the interest of farmers in the scheme. It seems to have been viewed by farmers as a wage labour scheme to plant trees for the government.

In 1994, a major reforestation programme was activated in recognition of the Royal Golden Jubilee. The programme's total targets was allocated to various parts of Thailand as follow: North, 531,286 ha (65.4%); North east, 159,838 ha (19.7%); Central, 83,704 ha (10.30%) and South, 38,036 ha (4.7%). As with many other similar programmes, the major emphasis was directed to the northern region.

Promising approaches have been developed by the Forest Restoration Research Unit at Chiang Mai University to rehabilitate degraded forest ecosystems by using strategic plantings of natural species (Elliott et al. 1998). Emphasis is given to careful matching of species to the site, producing robust seedlings and working in partnership with local communities. Examples are given of using low-density "framework" plantings to minimise costs while maximising impact. The approach is useful in degraded watersheds and protected areas where increasing biodiversity and improving environmental services are important considerations.

In Vietnam, prior to 1954, the French carried out small-scale tests of a number of exotic and indigenous species. However, concentrated planting by forest enterprises and agricultural cooperatives began in 1955. By 1975 the total area planted was 219,000 ha, but the area successfully established was less than 40%. Planting was ad hoc and little attention was given to matching species with sites. Among the more successful efforts was the use of *Casuarina equisetifolia* for stabilising moving sands along the coast.

In the period 1975-1986 forest enterprises became widely established and the objectives of planting (economic or protective) became more clearly defined. However, in general, low levels of inputs were used and the success rates were low — 40% to 50% (Nguyen Ngoc Lung, 1994). The total area planted during this period was 1,054,000 ha, but over-harvesting, illegal cutting and shifting cultivation caused substantial losses.

Since 1986, improved planting and site matching techniques and improved integration of forestry operations into rural development have resulted in improved success rates. Also important has been the process of land allocation for forest activities, although the rate at which this is being achieved is variable throughout the country. In the eight years from 1986 to 1993, a further 1,015 million ha were established, with an estimated survival rate of 70% (Nguyen Ngoc Lung, 1994).

During the past 40 years, the government has put great emphasis on multi-purpose tree planting around villages, schools, public offices and in home gardens. This has had a major impact and has added significantly to the availability of fruit, wood and fuel for local people. It is estimated that 2.64 billion scattered trees have been planted of which 25% are timber trees. It is not known how many of these trees have survived.

Estimates made in 1993 indicate that about 674,000 ha of plantation forests have survived, and most of these are exotic monocultures for industrial purposes. The average growth rate is put at about 8 cu m per ha per annum (MoF, 1995b). These plantations have been established on about 6% of the bare land, leaving 94% without forest cover. In addition, most of the planting has taken place close to population centres, transport and markets, and rarely in critical areas such as remote degraded watersheds. The Forest Sciences Institute of Vietnam provides research backing for rehabilitation activities, but lacks funds for long-term trials.

10. LESSONS LEARNED

The experiences in Vietnam have been the most thoroughly studied, due to the long running and extensive programmes in that country. While conditions vary from country to country, the Vietnam experiences are probably relevant to a greater or lesser extent in all countries in the region. Nguyen Ngoc Lung (1994) provides an analysis of the past 40 years of experiences in Vietnam and made the following major point: the crucial factors in good plantations are always selection of suitable species; quality of seed and seedlings and planting technique.

In addition to these technical aspects, there are institutional and social aspects that are perhaps even more important to long-term success. To cite an example of the institutional blockages is that the Forest Science Institute of Vietnam has prepared lists of species (proven and promising) for different ecological zones in the country, but no seed supply network exists to collect and deliver quality seeds to different regions.

Programmes in Vietnam (particularly the 327 programme) have been heavily top down and very bureaucratic. Further, much of the funding has been used to prop up inefficient state enterprises to the detriment of improved field practices. Most of the directives about forest rehabilitation come from central and provincial governments and are based on "central views" of problems and solutions. These frequently ignore the social reality of poor rural households and the network of informal use rights that often characterise the relationships between people and forests, particularly among ethnic minorities in the remoter areas.

The land allocation process for forest land in Vietnam has largely stalled in the remote areas, in particular where ethnic minorities are concerned. This may be because of the different "world views" of central planners and ethnic minorities concerning the legitimate use of forest land, particularly relating to shifting cultivation.

In Cambodia, the allocation of logging concessions and the declaration of protected areas have both disrupted traditional use rights and practices. Local communities are largely disenfranchised and can not invest time or effort in long-term forest activities until tenure and use rights issues are addressed.

In Thailand, the Watershed Management Division of the RFD has been working on upland watershed rehabilitation for the past three decades, and has accumulated valuable experience during this time. Among the major lessons that have come from these three decades of experience are the importance of:

- involving a wide range of stakeholders in both planning and implementation for watershed rehabilitation;
- clarifying the critical role of access and use rights of watershed resources; and
- ensuring equitable sharing of benefits and costs.

In Lao PDR, similar issues are present. Ambiguities over tenure (in particular regarding access and use rights)

have created difficulties in dealing with those communities living in areas with degraded forests, particularly in the remoter regions. An integral part of this dilemma is the uncertainty that prevails regarding shifting cultivation. The government is attempting to ban or at least curtail the practice, but there are no viable livelihood alternatives so far proven that shifting cultivators can adopt with confidence. Land allocation and community-level land use planning are currently being trialed throughout the country, but progress is inevitably slow. Many communities are impoverished, and their primary concern is with food security. Any attempts to deal with forest degradation in the upland areas need to integrate rehabilitation activities with overall development.

Few definitive data are available in Lao PDR regarding species /site /soil interactions, but DoF (1997) has developed a list of species and provenances that are considered suitable for different regions and end products. However, as with the situation in Vietnam, there is currently no institutional mechanism to organise the collection and distribution of quality seed.

11. ISSUES FOR THE FUTURE

A number of issues emerged from the previous discussion and from the consultative workshop in March 1999, that are common across the region. These will need to be addressed if the vision being articulated for a substantial increase in the quantity and quality of forest in the landscape is to be realised.

11.1 Commitment to forest rehabilitation

All countries have a strong desire to reverse forest loss and degradation. This desire needs to be acted upon by addressing a range of policy, institutional and technical issues that are constraining progress. The number of issues and the size of the task is large, requiring the commitment of key policy makers to share and explain with a wide audience what they think should be done, both inside and outside the country. This will depend on the development of a communication programme and network involving numerous interest groups so that they can share ideas and work towards a common agenda for change.

11.2 Supportive, responsive and innovative policies

The policy settings will need to change regularly, based on implementation experience. Thus there will be a constant need for testing and refining policies in the field in a series of "policy experiments" with the results influencing the policy dialogue at various levels so that changes, when they come, are based on the realities of experiences in the field. Institutions will also need to adapt to the changes and develop a culture that is open and flexible to cope with such a situation.

Among the most crucial policy issues are those related to tenure and equity, particularly regarding access and use rights of natural resources. An integral part of this issue, particularly in upland regions, is the question of shifting cultivation. It is unlikely that any real progress can be made in the uplands until this package of issues is addressed and resolved. Experience elsewhere suggests that resolution will only come by engaging the key interest groups in a participative and constructive dialogue and with a commitment to an equitable outcome. Forest rehabilitation has to be seen in the context of integrated rural development, particularly in the case of those communities depending on shifting cultivation.

Another policy issue for the future is the valuation of forests for the provision of environmental services (such as biodiversity conservation, watershed protection, carbon sequestration) and developing and testing mechanisms for making transfer payments from the beneficiaries of the services to the providers.

11.3 Integrating economic, social and environmental objectives

One of the big challenges for the future is to develop policy and practical approaches to achieving ecologically sustainable forest management by integrating economic, social and environmental values into forest management. In the majority of cases, economic considerations dominate decision-making. This has given rise to the situation where activities such as forest rehabilitation (generally through plantation establishment) are driven by economic arguments, and ecological values are addressed by establishing protected areas. In this model, the economic and ecological elements are kept separate. It is increasingly recognised that conservation objectives can not be achieved solely by establishing protected area networks (Kanowski et al., 1999).

An effective way of addressing the ecological and social objectives of forest management is to carry out land use planning on a landscape scale and involve a wide range of stakeholders in the debate. However, this

requires a significant increase in the capacity of both government field staff and communities to carry out such planning.

Local communities are likely to integrate the locally relevant non-monetary values of forests in planning and management if they are empowered to do so. However, where external, possibly downstream, values are considered to be important for local forest management, there needs to be some sort of incentive to encourage local planning and management to incorporate these values.

11.4 Technical improvement

There are many technical constraints that have inhibited previous rehabilitation efforts. These will all need to be addressed as part of a comprehensive programme implemented through decentralised structures and with the active involvement of key stakeholders and interest groups. Among the most pressing technical issues are:

- species-site matching;
- quality of seeds and seedlings;
- techniques for low cost natural regeneration;
- good post-establishment silviculture (particularly tending and protection) ; and
- locally appropriate and sustainable harvesting systems.

11.5 Flexible and adaptive institutions

All countries in the region are going through major institutional changes that are caused, in part, by the shift from centrally planned to market economies. This, and the concomitant imperatives of decentralisation and devolution of authority and responsibility, also calls into question the relevance of many institutions and the way they function. The modern world requires institutions that are responsive to the needs of client groups (including rural farmers), and that can adapt readily to changing conditions and policies. Many resource management institutions in the region do not possess the characteristics needed to fit them for the changes that are taking place. The process of change is a difficult one, and institutions need to be supported as they go through the transformation.

11.6 Adequate resources

It is clear that the resources needed to implement forest rehabilitation programmes of the scale planned will not be available from normal government budgets alone. Private and public investors (including local farmers operating on loans) are being sought for commercially viable plantation schemes. More difficult to fund are the large-scale rehabilitation and restoration efforts that will be needed to achieve the vision. This may need consideration of innovative and low cost funding mechanisms as discussed in Section 11.2.

12. SUMMARY OF MAJOR BLOCKAGES TO PROGRESS

Discussions during the March 1999 workshop identified several areas that were impeding progress in initiating or scaling-up rehabilitation initiatives. It was felt that by using the institutions already present in the countries, improved progress could be made, although some external support might be needed. Networking throughout the region would help to transfer local experiences across national borders and assist with learning. A summary of the major results of these discussions is given in Table 8.

Table 8. Major activities needed to speed up rehabilitation efforts

Activities /Actions Needed to Improve Progress	Ways Forward	National/Regional Institutions with Appropriate Capacity
Improved characterisation of degraded land	Collate information currently available in each country	FIPI; FSIV (Vietnam) DoF (Lao PDR) DF&W; DNCP (Cambodia) GTZ-MRC (Regional networking and facilitation)
Integrate socio-economic and environmental needs into forest rehabilitation initiatives	Collate information currently available in each country	FIPI; FSIV (Vietnam) DoF (Lao PDR) DF&W; DNCP (Cambodia)

		GTZ-MRC (Regional networking and facilitation)
Incorporate forest rehabilitation into macro land use planning	Through existing projects in the various countries by constantly raising relevant issues	Forest Departments IUCN (Regional networking and facilitation)
Develop approaches and procedures in each country to achieve active participation of local communities in forest rehabilitation activities (with particular emphasis on land use planning, land allocation and forest management)	Develop small pilot sites for case studies and demonstrations	Existing projects FSIV (Vietnam) GTZ-MRC/IUCN (Regional networking and facilitation)
Develop improved low cost, robust options for land use planning and land allocation	Carry out national-level field testing of various options	Existing projects GTZ-MRC (Regional networking and facilitation)
Develop national level operational guidelines to translate policy into practice	Establish national level working groups	Forest Departments, facilitated through GTZ-MRC/CIFOR, or interested donor
Carry out applied research work to improve species/site matching, particularly for indigenous species	Support to existing research capacity in Forest Departments and universities	National research centres (facilitated by CIFOR)

Note: The information in the right hand column of this Table relates specifically to institutions in Cambodia, Lao PDR and Vietnam, and does not include mention of relevant Thai institutions. However, the Table as a whole (particularly columns 1 and 2) is relevant to Thailand.

13. CONCLUSIONS

A panel discussion during the final session of the March workshop drew together many of the issues that are relevant to the discussion of rehabilitation of degraded forest ecosystems across the region. A synthesis of the major points raised in this discussion provides the basis of these concluding comments.

Forest management context

The present time is one of significant change in almost all areas affecting resource management. In particular, globalisation and changes in the macro-economic environment are forcing national governments to adopt changed roles, with increasing emphasis on decentralisation and devolution of authority and responsibility for management of natural resources. In spite of the rapidly changing context it is a time to move from talk to action.

Vision for forested landscapes

The trend of deforestation and forest degradation in the region will be halted and reversed and there will be a significant increase in the area and quality of forest (particularly in Lao PDR and Vietnam in the coming decade). The vision articulated for the future forested landscapes is one of a mosaic of agriculture and forest patches, with all land being productive and well managed, and contributing to secure rural livelihoods. Natural regeneration will be encouraged as much as possible, and the use of indigenous species in plantations will be fostered. Overall, this will lead to an improvement in the provision of ecosystem services.

Delivery systems necessary to achieve the vision

Achievement of the vision will depend on:

- developing improved policy and practices for land use planning and land allocation involving the active participation of all stakeholders, so that security of tenure (and of any investment) is guaranteed;
- linking policy development with grass roots implementation so that experiences from the field can inform policy;
- provision of appropriate technical measures for applying to rehabilitation projects, particularly related to species-site matching and provision of high quality seeds and seedlings; and
- Developing policy settings and institutional arrangements to empower small holders to become involved

in forest management (putting people at the centre of forest management).

Support mechanisms to attain the vision

The changes envisioned will need to be supported in a number of ways. In particular, natural resource management agencies will need to become more flexible and innovative as they move from their traditional role of control over forests to devolution of that control, and building partnerships with a range of stakeholders. There will be a great need for capacity building to fit government and other stakeholders for their new roles. Changes will take place at different rates in different countries, and there is value in exchanging experiences between countries to enhance learning.

14. APPENDICES

Appendix I

Evolution of Forest Policy in Cambodia

The first forestry law after independence was the Code Forestier passed in 1961. It was focused primarily on exploitation, made no acknowledgement of the rights of local communities, and had little real impact on the way in which forests were managed.

The period from 1970 to 1990 was one of anarchy where, among other things, there was a deliberate attempt to eradicate the written word and conventional institutions. As a consequence, the previous legal infrastructure and institutional knowledge was lost, and there is currently a lack of mature and experienced managers in the country (MacAndrews, 1998).

Forest concessions have been allocated over 39% of Cambodia's land area, although concession agreements are poorly drafted and full of loopholes that allow concessionaires to bypass conditions. Government staff have little capacity to enforce concession agreements. In addition to the legal concession agreements there is a system of *ad hoc* "collection permits" that often overlap concession areas. It has been estimated that these permits accounted for more than 90% of the log production in 1997. They are generally given as part of the patronage system that maintains political support for powerful people. All of this contributes to a situation where the current forest law has been described as "...complex, inconsistent and unenforceable-an unclear legal framework has made enforcement by forestry and other officials difficult, if not impossible" (Vathana, 1998).

In 1993, over 18% of the country was declared as protected areas, although there was no functional management structure to implement the mandate. Many of the areas have people living in them and most have been, and continue to be, impacted by logging and other activities which are detrimental to protected area objectives. Many also require rehabilitation to restore their biodiversity.

Local communities face major constraints in exercising any effective control over forests in their immediate vicinity, as they have no legal mandate. Forest concessions are often given over land that includes villages, thus removing from local communities any sense of responsibility for forest management. As a result, forests tend to be treated as open access resources. Several international NGOs have been gaining valuable experience in working with local communities in rehabilitating degraded forest land following the negotiation of agreements with provincial authorities on access and use rights (Concern, 1998). It is widely acknowledged that community involvement in forest management will need to be a key part of future forest policy and practice.

Although there is currently no comprehensive statement of Cambodia's forest policy, the strategic plan prepared by the Ministry of Agriculture, Forestry and Fisheries in 1997 does give some indication of official intentions. It states that the aim of forest policy is to manage the forest resources to maximise economic benefit while ensuring ecological sustainability, community development and habitat protection for native fauna and flora. The sub-programmes listed to support these aims are:

- sustainable forest management;
- reforestation and rehabilitation of degraded areas;
- community forestry including community forest management;
- wood processing; and
- wildlife and protected area management.

Beginning in 1997, a series of four major studies was undertaken with international support to begin the process of reforming forest policy and improving the practice of forestry. These studies covered the topics of:

- forest concession management
- legal counsel
- log monitoring and enforcement
- forest policy reform

Most of the studies were completed by the end of 1998, and ADB has agreed to support the redrafting of a new forest law based on their results. It is likely that the draft law will include a section on community forestry. Among the strategies emanating from the forest policy review is one that focuses on small holder reforestation.

Appendix II

Evolution of forest policy in Lao PDR

(Adapted from Tsechalicha 1999)

1960 - 75

The scope of forestry policy development prior to 1975 was limited. This was due primarily to the long period of war in the country. The 1960 - 1975 period can be characterised as the period of trial plots, partial forest reconnaissance surveys and training in forestry techniques, even though re-afforestation plans were also envisaged (USAID Mission to Laos 1970; Ovington, 1972, 1973). The main feature of the forestry sector was the commercial extraction of wood for export, which in many cases could not be regulated. Efforts to stop slash-and-burn agriculture in remote areas were only partially addressed. The most important development was the establishment of the Lao-Australian Reforestation Project (LARP) in the late 1960s – early 1970s. Forestry activities under this project continued until 1975 and forest plantation sites were established in five provinces (Champassak, Savannakhet, Luang Prabang, Sayaburi and Vientiane Provinces) (Lao-ADB Plantation Forestry Project, 1995). The project involved research, training of Lao personnel and later the establishment of two demonstration nurseries in the country (USAID Mission to Laos, 1970). Also, at this time a Forestry Training Centre was established in Vientiane, at Dong Dok, with the support from the Australian Government.

1975-89

The early part of this period included the reorganisation of the national economy after the war. Since 1976, it has been a priority of the Lao Government to stop shifting cultivation by gradually settling shifting cultivators into areas of sedentary agriculture. As part of this process, the favoured methods to meet the need of the settled people include "clearing or rehabilitation of wet rice fields, intensification of agriculture on favourable land, and planting of fruit trees" (Souvanthong, 1995). One of the forestry-related decrees and regulations promulgated during this period was Decree No.74 on Forest Management (1979). Another important feature of this period was the formation of nine State Forestry Enterprises (SFEs) (DoF, n.d.) in the country to undertake a combined responsibility for logging operations and forest management. In 1980, in an attempt to encourage and promote tree planting and forest plantation movements, the Government declared 1st June as National Tree Planting Day. This has been continuously followed ever since with widespread community participation in tree planting every year.

During the Fourth Party Congress in 1986, a restriction on shifting cultivation and forest clearance for farming and a plan to "arrange" fixed occupations for some 277,000 families of shifting cultivators then engaged in this kind of farming were raised in the agenda (Souvanthong, 1995). One of the strategies proposed to address this issue was the integration of upland cultivation with reforestation (agro-forestry). However, according to Souvanthong, this "ambitious resettlement plan" was never implemented. Severe deforestation, primarily for shifting agriculture and forest fires had still been prevalent and continued at the rate of 300,000 ha per year and 100,000 ha per year respectively (TFAP, 1990). The need for gradual stabilisation of shifting cultivation in the country was highlighted in the Tropical Forestry Action Plan and in other subsequent forestry policy documents.

1989-98

This period signifies the most important phase in forestry policy evolution in Lao PDR. In 1989, the first National Forestry Conference was convened to review and assess the forestry situation and to outline the measures for action towards forest management and protection of the environment. It led to change from exploitation-based forestry "preservation, planting and development of forests" (Resolution of the First National Forestry Conference, 1989). It was acknowledged that the destruction of forests was reaching a critical phase and forest "restoration, preservation and reforestation" were seen as a matter of necessity and urgency. As a response to this urgency, three strategic directives were laid down by the conference:

1. preserve the extent of present forests;
2. rational use of forest and forest resources;
3. restoration, preservation and development of forests in connection with the needs in cereals; permanent settlement of 1.5 million people (60% of the total population) then engaged in slash-and-burn farming till year 2000.

Four urgent measures were adopted:

- forestry policy development on restoration, preservation, reforestation, forest development and rational use of forest resources;
- institutional strengthening within forestry sector at all levels;
- budget allocation for forestry development and settlement needs;
- Training and capacity building for forestry personnel.

The needs for afforestation were stated, according to which, courses on afforestation, forest preservation and natural restoration must be organised. The conference effectively laid down the basis for the formulation of the Tropical Forestry Action Plan for Lao PDR. Shortly after the conference Decree 117/CCM (October 1989) on the Management, Use of Forest and Forest Land was adopted.

In 1990, the Tropical Forestry Action Plan for Lao PDR was produced and this has served as a guiding document for the forestry sector. It reinforces the urgency of addressing the forestry issues. In 1997, the Department of Forestry drafted the forestry sector "Vision 2020" composed of seven strategic frameworks, one of which covers land allocation for afforestation. Recently, a number of special key policies were formulated by the Department of Forestry and are currently pending approval by the Government, including one on plantation development. The main purpose of this strategy is to define the plantation areas and tree species to be planted (Sawathvong, 1998). Other special key regulations concerning natural resource utilisation that were to be approved during 1998 are (Ibid.):

- regulation on Planting and Rehabilitating Forests.
- regulation on Exploitation of Forest Product and Forest Industry
- regulation on the Rights and Obligations of Forest and Forest Land Users

Several other forestry and plantation related decrees were issued, including Decree 67/PM (1991) on Logging Ban; Decree 169/PM (1993) on the Management of Forest and Forest Land; Decree 186/PM (1994) on the Allocation of Land and Forest Land for Tree Plantation and Forest Protection. The most important step in the development of forest policy legislation was the adoption of the Forestry Law in 1996. The law signifies a move towards comprehensive management and utilisation of forest resources, including the legal provision for reforestation.

Appendix III

Evolution of forest policy in Thailand

(Adapted from Jantakad and Gilmour 1999)

A series of Royal Orders, Decrees and Acts of Parliament have been used to define forest policy in Thailand, with the focus changing as the priorities for forest management changed. The following time-line gives an historical perspective of the Thai forestry legislation:

- 1874, a Royal order was issued to collect tax on the export of timber;
- 1897, a Royal Order was issued to regulate cutting in teak forests;
- 1913, the Forest Conservation Act was passed during the time of King Rama VI;
- 1938, the Forest Protection and Reservation Act was passed to categorise forest as protected forest or reserved forest;
- 1941, the Forest Act was passed, which provided the most comprehensive coverage of forest law. It has been amended several times, but remains the basis of forest law. It regulates forestry related activities on all lands that are not under private ownership and prohibits the felling of certain species of trees whether they are on private or public lands;
- 1960 the Wildlife Protection and Preservation Act was passed;
- 1961 the National Park Act was passed;
- 1964, the National Reserve Forest Act was passed with the intention of slowing deforestation by including forest into the National Forest Reserves system. A target was established to set aside 50% of the country's land area as forest;
- 1975, the Enhancement and Conservation of Environment Quality Act was passed;
- 1992, the Forest Plantation Act was passed.

There are other major pieces of legislation that impinge on the forest sector. The most important of these are:

- The land code of 1954 is a major law governing the acquisition of land by private individuals, the acquisition of land title deeds, legal procedures regarding land rights, etc;
- The Agricultural Land Consolidation Act of 1974 is intended to provide land development for agricultural purposes through the consolidation of multiple parcels of land;
- The Agricultural Land Reform Act of 1975 is concerned with the allocation of state-held land (which the state had purchased) to agricultural workers or to those who intend to pursue agricultural occupation;
- The Land Development Act of 1983 authorises the committee on land development and the Department of Land Development to undertake any activity related to improving the efficiency or quality of land including soil and water conservation.

A National Forest Policy was drawn up and adopted by cabinet in 1985, in an attempt to unify forest policy in the country and to place forestry within the context of overall national development. The process of preparing the policy was thorough and detailed, with extensive public hearings and input. Reforestation and afforestation were seen as important initiatives to supply future wood needs. This part of the policy encouraged the private sector to become involved in tree planting projects for both domestic and export supply. Emphasis was placed on a partnership with the private sector. However, the private sector was interpreted to mean concessionaires and business people rather than rural people.

Although the forest policy was adopted by cabinet in 1985, it is widely considered that it did not give adequate attention to three crucial areas. These are:

- deforestation, with all its negative impacts, continued because its root causes were not addressed;
- the Kingdom's household and industrial wood demand was not met in a sustainable manner; and
- the conflict over forest land use by many "illegal" occupants of state forest land remained unresolved, thereby accelerating land degradation and maintaining social tension.

Since 1985, forest policy has been overtaken by events that have dictated shifts in policy directions. The 1989 cancellation of logging concessions in natural forests was partly in response to the fact that forest administration had lost effective control over logging. This was also interpreted as a signal that forest conservation and protection were more important to the Kingdom than industrial wood production. The cancellation was made permanent in 1992 and state forest administration has moved from wood harvesting to conservation forestry. The 7th Five-Year Plan (1992–1996) proposed that 25% of the Kingdom should be protected as conservation forest (i.e. virtually all of the remaining forest).

In the early 1990s another major forest policy planning exercise was commenced. The Thai Forest Sector Master Plan was a wide-ranging exercise, but was largely driven by outside technical experts, and seems to have had little national ownership. In addition, the process and outcomes have been severely criticised by NGOs (both inside and outside the country) on three basic counts (IUCN 1996):

- the plan did not pay sufficient attention to broader sectoral issues;

- the plan was not sufficiently attuned to changing societal interests in forest management, particularly the shift from an emphasis on exploitation to one on conservation;
- the process used to develop policy positions was too technically driven and lacked effective participation of key stakeholders.

As a result of these shortcomings the plan has never been implemented.

To address deforestation problems, RFD has been working with different programmes in land settlement, agro-forestry, reforestation and land entitlements in reserve forest areas. These activities are supplemented by other site-specific projects in watershed conservation in highland agriculture, mini-watershed development, and village woodlot programmes. The main objectives of these programmes are to:

- encourage tree planting on large to medium scales;
- increase forest plantation areas to compensate for the loss of national forest land;
- organise forest and forest margin populations to include appropriate agricultural technology; and
- increase the domestic production for the improvement of the people's living condition.

The reforestation programme of RFD seeks to solve the problem of timber shortages and degradation of forest land, and help to address rural poverty. The programme has the following main objectives:

- **Economic.** Planting forest for economic benefit to produce income in various ways such as from logs, fuel wood, posts or wood pulp;
- **Conservation.** Planting forest for protection means that there is no direct economic return but instead watershed areas are protected and soil erosion is prevented;
- **Social.** Planting forests can give direct and indirect social benefits especially in rural areas where people's lives are bound to the forest. This is based on the assumption that if people in or nearby the forest areas have secure work and income besides having land to farm, then the problems of forest destruction will be gradually reduced.

Responsibilities for reforestation within RFD held by **the Reforestation Office**. The objectives of this office are: plan and coordinate for reforestation; promote and support reforestation on all land tenures; co-implement or support other agencies and partners concerning to reforestation

To accomplish these objectives, the Reforestation Office comprises 4 divisions:

- **State Reforestation Division:** responsible for reforestation on state forest areas;
- **Private Reforestation Division:** responsible for promoting private sector reforestation;
- **Forest Nursery Division:** responsible for supplying non-commercial tree seedlings for internal RFD and public demands.
- **Community Forestry Division:** responsible for the development and promotion community based forest management

Within this Office, there is "The Reforestation campaign in commemoration Office". Some of its activities are mentioned on Page 40.

In addition to the Reforestation Office, the Watershed Management Division, is involved in the restoration of watersheds.

NGOs play an important role in Thai society, and many of them are actively involved in rehabilitation activities, often as part of a wider agenda. NGOs include people's organisations, temples and schools. The forestry related concerns of this sector are mainly:

- social action involving community forestry;
- advocacy of local people's rights; and
- conservation and improvement of the environment.

The 8th NSED Five Year Plan (1996-2001) outlines proposed activities for the forest sector and is probably the best indicator of the current focus of policy. A summary of relevant sections covers:

Private and Land Reform Lands

- i. Encourage people's participation in reforestation & forest management
- ii. "Economic zone": support loans and crop insurance for "reforestation" with fast growing species on 800,000 ha
- iii. Support the private sector to develop forest plantations on 160,000 ha

Conservation Forest

- i. Continue and extend demarcation of boundaries
- ii. Promote management by community forestry in buffer zones
- iii. Provide loans for farmers in buffer zones for agro-forestry

It is clear that participation of local communities is seen as a major method of implementing policy and of ensuring sustainability. There is also a strong emphasis on activities aimed at rehabilitating degraded forests. This focus is reinforced in the implementation guidelines for the 8th Plan (1996-2001), which emphasise:

- i. Protection of the remaining forest
- ii. Forest rehabilitation and promotion of reforestation
- iii. Administration and research development

The growing interest in community involvement in forest management led to the drafting of a Community Forestry Bill in 1996. However, there is considerable opposition from various sections of society to allowing communities to live in and use forests, and the legislation has not yet been passed by Parliament.

The new Constitution of Thailand (1997) also places considerable emphasis on the rights of rural people in participating actively in the management and use of natural resources. Key clauses in the Constitution are:

Section 3: Rights and freedom of the Thai people

Clause No. 46: Communities shall have the right to preserve and restore the traditional culture, knowledge and local fine arts of their local community and of the nation, and participate in the management, maintenance, preservation and utilisation of natural resources and the environment in a balanced way as provided by law.

Clause No. 56: The human right to participate with the state and community for maintenance and utilisation of natural resources and biodiversity and protect and promote the quality of environment for better living and better quality of life. This right must be covered by law.

Section 5: Basic policy guideline for the state

Clause No. 79: The state shall promote and encourage public participation in the preservation, maintenance and balanced exploitation of natural resources and biological diversity and in the promotion, maintenance and protection of the quality of the environment in accordance with development principles.

These principles enshrined in the Constitution give the clearest indication to date of the direction that future resource management is likely to take, and may provide an added stimulus to passing a Community Forestry Bill.

Appendix IV

Evolution of forest policy in Vietnam

(Adapted from Nguyen Van San 1999)

Forest rehabilitation policies and activities need to be understood in the context of the role of forestry and agriculture in the context of the country's overall socio-economic development.

1954-65

Along with the establishment of agricultural cooperatives, most forests were nationalised and put under the management of cooperatives and state units. Cooperative management for forest production concentrated on

forest logging to sell wood and create land for cropping. Until 1961 the Department of Forestry of the Ministry of Agriculture was responsible for forest production. This had to be carried out in a diversified manner. The improvement of forest production include the strengthening of the production organisation, its management, as well as the expansion of the number and area covered by state lumber yards (later to be called State or Regional Forestry Enterprises).

The function of forest policy was to "serve as a basis for the development of agriculture" and this was the rationale for combining agricultural production with forest production. The activities in the forestry sector should, among other things, to "suitably" guide the cultivation on burnt-out clearings (swidden agriculture) in order to stop "deforestation". It was perceived that swidden agriculture could be replaced by other modes of production, in particular by state and cooperative forest production. The administrative organisation responsible for the realisation of these aims and objectives was the General Department of Forestry which fell under the authority of the Government Council (MoF, 1991).

1965-76

The administrative framework in the period 1965-76 was characterised by a centrally planned system in the Democratic Republic of Vietnam and an intensified war effort in southern region. The agricultural policy emphasised the 'cooperativisation' of production in the uplands. Agricultural production should be intensified, and both food and 'industrial' crop production was to be increased, with an emphasis on irrigated rice production.

Forestry policy concentrated, as in the previous period, on increasing production, and was oriented towards serving the agricultural (watershed protection) and industrial production while increasing the production of timber and non-timber forest products.

Timber exploitation was restricted, however, by the lack of infrastructure and labour. Inadequate storage facilities for harvested logs resulted in large losses due to fungus and insects. In 1968, local authorities were given more authority over the management of forests (MoF, 1991), and the General Department of Forestry in Hanoi became more of an advisory body. Major wood industries were transferred to the General Department of Forestry at that time. A parallel organisation of "People's Forestry Protection Units" was built on provincial and district levels (MoF, 1991).

Forestry activities were carried out in the state sector and under the authority of the People's Committee at local levels. The national supervision over forestry production was strengthened by means of institution building, as well as the promulgation of the first law on forestry in 1975 (Act on Forest Protection 1975). This Act included forest management regulations regarding exploitation (including swidden agriculture), replanting and protection against diseases and forest fire. The strengthening of forest management was intended to play an important role in upland development (Nguyen Khac Vien, 1975). The General Department of Forestry was upgraded and became the Ministry of Forestry in 1976 (MoF, 1991).

1976-86

After the end of the second Indochina War in 1975 policy and administration was based on the concept of "Collective mastery". The administrative autonomy of Autonomous Zones was cancelled. Agricultural policy stressed the development of large-scale production units, as well as the production of surplus cash crops. Attempts were made to stimulate production in both the collective and state sectors. New approaches were tried, such as the allocation of land for agricultural and forestry "stabilised" production and agro-forestry.

In 1976, the Ministry of Forestry was established and subsequently directed forestry production in this period. The goal of forest policy was to increase production and support national defence. The greatest part of forestry production was under state control, and this resulted in over exploitation, because production quotas was set based on state needs rather than the productive capacity of the forests (MoF, 1991). The goal of achieving surplus production of cash crops was predominant during the first decade of the Socialist Republic and also in the forestry sector. However, by the mid-1980s Ministry of Forestry officials were changing their position. The natural environment had degraded to such an extent that it was officially observed that "growing of industrial crops in monoculture and rotational extensive cropping systems did not protect the forest vegetation (MoF, 1985). Subsequently, forest management emphasised protective activities more than previously. The role of forestry production was not restricted to the construction of a socialist economy. Since most designated forest land was situated in mountain regions where most of the ethnic minorities lived, forest policy planners also began to consider policies for ethnic minorities. In particular, solidarity between the ethnic groups was addressed in the forestry policy guideline No. 29-CT-/TU/1984: on strengthening forest and land allocation, forest construction and the organisation of agro-forestry (MoF, 1984).

1986-90

The economic crisis of 1979-1980 and the severe inflation in 1986, as the result of the centrally planned economy, led to the Sixth Party Congress in 1986 committing to a reform policy. However, it was not until 1989 that real renovation became firmly established.

Since 1989, the Government has initiated a process to move from a centrally planned to a market driven economy-the policy commonly known as "doi moi". The main components of this policy are: a transition to a market economy; a reduction in the role of the government (particularly in production and trade); decentralisation of planning and decision making to provinces and districts; and a stable macro-economic environment. A number of key actions have been taken as a part of this process, including the liberalisation of prices and markets; unification of exchange rates and a devaluation of the currency; and control of fiscal imbalances. The results of the reform process have been good, with the economy growing at around 8% per annum, reduced inflation, increased exports and imports, greater foreign investment, reform of public institutions and macro-economic stability.

The process of structural transformation has been extended to agriculture. The government has decollectivised agriculture and allocated most agricultural lands to the farmers with leases of 20-50 years. The cooperative system was reformed to become more of a service function. At the same time marketing, has been liberalised. These steps resulted in a rapid increase in agricultural production. In particular, rice production has risen rapidly and Vietnam is now a major rice exporting country.

In this period the objectives of forest policy included, among other things, an expansion of forest plantations by SFEs, other organisations as well as households (SPC/UNDP, 1990). The strategy towards the year 2000 outlined a continuation of several programmes. The main ones concerned re-forestation and exploitation or what was often called 'rational utilisation' of forest resources. The expansion of the processing industry was closely related to the programme concerning the promotion of forest product exports. The programme concerning the protection of forests in the upland region addressed mainly watershed management (Forestry Sector Review, 1991). This programme was a follow-up to the 1975 Forestry Act and was further elaborated by the 1986 regulations concerning forest protection (Decision No. 1171/QD 1987). Another major forestry programme concerned training and education which was linked to the national forest research and extension programme (MoF, 1991).

Some officials maintained their position regarding centrally planned production (MoF, 1987). However, the changes in economic management following the Sixth Party Congress in 1986 stimulated further reorganisations in forestry production which had been the subject of discussion in the forestry branch during the 1980s (Bui Vu Minh, *et al.*, 1986; Decision No. 801/QD-1987). Major changes occurred in the management of SFEs. The state sector was given more financial self reliance, which meant that subsidies were cut. In general, attention shifted from forestry production by state and collective units to plantations carried out by Forestry Enterprise workers' households and other households under contract to the Forestry Enterprise.

In 1991, a functionary of the Ministry of Forestry called the new political orientation 'social forestry'. Social forestry development in the administrative framework of that time meant the stimulation of forest production by means of land allocation to other branches, ministries (since 1983) and to cooperatives, schools, the military, and households (since 1986) (Pham Dinh Huan, 1991). Officially, it was perceived that implementation was hampered by "technical restrictions" (To Dinh Mai, 1987).

Agro-forestry was one of the most promoted cultivation models in this period (Guideline No. 24/1984; Nguyen Ngoc Binh, 1985; MoF, 1987; Fingleton, 1990). It was officially recognised that forests provided indispensable material for the daily life of the local people but forest resources also are an important source for the "development of socialism", to "serve the nation" and the national economy (Le Hong Tam and Nguyen Quoc Hung, 1991; To Dinh Mai 1991).

1991 to the present

In line with the overall reform programme, the government has also been taking steps to restructure and transform the forestry sector. The National Forestry Action Plan was formulated in close collaboration with the international donor community. The process started in 1989 when Vietnam applied for participation in the FAO sponsored Tropical Forestry Action Plan. The first step in this process was to undertake a forest sector review that was completed in 1991, in the form of a National Forestry Action Plan (NFAP). The review process was important in that it brought together Vietnamese and international experts, provided a series of reports about the state of forestry in Vietnam and put in place the guiding principles for forestry development. These were decentralisation and peoples participation; restructuring of institutions dealing with forestry to make them supportive of local activities; environmental protection; and increasing output and incomes of people living in

forest areas. The action plan also provided a list of projects for which finance was required.

The NFAP was complemented by a series of laws and decrees (passed by the National Assembly or the Government), directives (issued by the Prime Minister), and regulations, guidelines or circulars (issued by the concerned Ministries). Provinces sometimes also issue specific guidelines to implement directives, regulations and guidelines from the central government, which aim to put in place a development programme for the forestry sector.

The 1990s has been significant for the recognition given to the extent to which forest have been degraded, and for policy and practical attempts to address this. Along with the government emphasis on decentralisation, this is creating a significant shift in the power structure regarding forests. The 327 programme (which started in 1992) was the first large-scale attempt to involve households and other organisations directly in forest establishment activities in terms of sharing in the costs and benefits. Most of the efforts were focused on conventional plantation establishment using exotic species (mainly eucalypts and acacias) in order to increase the economic production from the land by "regreening the barren hills". The programme was not universally successful, and many of the funds were used to support inefficient state bureaucracies. However, valuable experiences were gained. The 327 programme has now evolved into the 5 million ha programme which is designed to establish 5 million ha of forest between 1998 and 2010. If successful, this will increase the forest cover in the country from the present 28% to 43%. The programme has also targeted 1 million ha for rehabilitation by natural regeneration in order to protect the environment and maintain and develop biological diversity.

Notes

¹Participation as used here refers to a process where the key local stakeholders participate actively in reaching decisions about forest management, in particular in sharing the associated costs and benefits

²Following the coup d'etat in 1991, the Internal Security Operations Command began implementing khor for kor, a massive programme of forced resettlement of families living in National Forest Reserves. The programme was eventually halted by popular protests.

³In spite of this general approach in the RFD, the Watershed Management Division has been evolving towards paying greater attention to satisfying the needs of local people.

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