Report of the First Phase Strategic Research

Forest Conservation

March 2001

Institute for Global Environmental Strategies

Preface

In recent years, the world's forests have been affected by over-harvesting, overgrazing, pests and diseases, high global temperatures, floods, droughts, storms, air pollution and forest fires, as well as economic crises, leading to a decrease in the world's forest cover. The forests of Asia, in particular, have been strongly affected by these phenomena. A number of initiatives have suggested forest policy reforms, and the need for the sustainable management of forests has been widely recognized and encouraged. However, implementation of these reforms at the local level has been inadequate. What is clearly needed is the effectively participation of local people in forest planning and management, as well as in protected area management, in each area.

The IGES Forest Conservation Project, launched in April 1998, has carried out research activities on forest strategies, including policy analysis and field studies. This comprehensive report of the Project gives an overview of the research activities of the Project in its first phase of three years. Since viable forest strategies work best when based on the involvement of local people, this report is addressed to stakeholders in the communities of the relevant countries, including local people and authorities, community-based organizations, experts, national agencies and international institutions.

Section 2.2.a provides case analyses of major causes of forest loss and degradation and examines necessary countermeasures, especially legal and administrative measures, and economic and political measures. Based on these case analyses, the Project reaffirmed the importance and usefulness of participatory measures for sustainable forest management. Such participatory measures can improve the processes for the development of management plans and economic policies, and the implementation of laws and regulations.

Section 2.2.c provides a set of specific policy recommendations for local participation, based on field research activities for several individual countries in the Asian region. Section 2.2.d suggests a series of supportive measures for the effective application and implementation of forest management. Originally, the first phase plan included research to identify and clarify a set of international guidelines for sustainable forest management that could be a base for international negotiations. However based on recommendations received, it was decided that research in the second phase of this Project would focus on the domestic level. Accordingly, the research activities of the third year and the results of the first phase have also been shifted to the domestic sphere.

In the second phase of research, the Project will develop and propose detailed guidelines and measures, based on the first phase recommendations, for three target countries—Indonesia, Laos and the Russian Far East—at both the local and national levels.

CONTENTS

Outline of the Project

1. Project name Forest Conservation Project

2. Project period April 1998 – March 2001

3. Project members

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Khampha Chanthirath, FORCAP, Lao P.D.R.

4. Project Expenses (yen)

Total project cost：	**218,707,813**	
FY1998:	74,338,156	(actual)
FY1999:	74,618,657	(actual)
FY2000:	69,751,000	(budgeted amount)

5. Summary of the Report

During its first phase of research the IGES Forest Conservation Project attempted to identify principles and measures for sustainable forest management (SFM) based on experiences in the Asia-Pacific region. Extensive studies were carried out within a framework of four interrelated sub-teams by in-house research staff, visiting researchers and many

outside collaborators. Based on diverse research activities, including four international workshops and three local policy dialogues, the Project reached many useful conclusions related to each sub-team. The structural analysis confirmed that the root causes of forest destruction include “the insufficient base of local participation and community rights” and “impact of market forces under an incomplete market system,” as well as the “forest development paradigm with an industrial emphasis,” and “economic/political instability.” The participatory forest management policy sub-team categorized existing participatory forest management styles into several types based on their main actors, legal status of forest land and activities. The team made policy recommendations based on their examination of internal and external constraints on participation. The Timber Trade policy sub-team conducted time-series economic analyses of the timber trade in the Asian market, and collected data for space equivalent analysis of the timber trade. The Legal/Administrative sub-team focused on international legal measures related to SFM, international processes for policy dialogue on forest issues, and domestic legal/administrative measures relating to participatory forest management. The sub-team elaborated the principles and measures for sustainable forest management with special reference to local participation in SFM, in cooperation with other sub-teams. With respect to project implementation the Project has successfully constructed valuable networks with researchers, NGOs, local communities, and government officials.

6. Keywords

Sustainable forest management (SFM), conservation strategy, policy recommendation, deforestation and forest degradation, underlying causes, timber trade policy, local people participatory forest management, legal and administrative measures, Asia-Pacific region, field study, country study, policy study.

1. Introduction

Forests are important not only for the production of timber, but also for other important functions such as the conservation of biodiversity, the supply of water and the prevention of global warming. However, natural characteristics of forests differ with location. Even for forests with the same natural characteristics, the desirable management methods vary from place to place because local people have different perceptions and uses of forests. In addition, some countries put a high priority on the production and export of timber, making it difficult to conduct scientific and objective discussions of alternative policies and actions based on common global criteria.

Forest conservation was one of the key issues at the United Nations Conference on Environment and Development (Earth Summit) in 1992. Although the conference adopted the Forest Principles and Agenda 21, which called for actions to prevent deforestation, it failed to conclude a Forest Convention. After the conference, a number of international initiatives emerged, such as the Intergovernmental Panel on Forests (IPF), the World Commission on Forests and Sustainable Development (WCFSD) and others, in order to find ways to halt deforestation worldwide and the degradation of all types of forest lands. At the Special Session of the General Assembly of the United Nations to Review and Appraise the Implementation of Agenda 21, held in June 1997, it was agreed that work should be continued in order to reach an international consensus on forest conservation. The task of shaping concrete actions by the international community was given to the Intergovernmental Forum on Forests (IFF). The work of the IFF was later mandated to the United Nations Forums on Forests (UNFF) by decision of the ECOSOC and the General Assembly of the United Nations. Work continues in order to find international solutions to forest problems, which are critical matters for all human societies.

In the past, most of the debates regarding various aspects of forests tended to focus on the forest sector and the direct causes of deforestation and forest degradation. These debates failed to address the cross-sectoral aspects or the underlying causes (such as the connection between forests and societies) which are linked with them. Non-governmental organizations (NGOs) took the initiative on one of the most pressing agendas, and started a research project on the underlying causes of deforestation and forest degradation after the UN Special Session. The IFF organized a global workshop on this matter in early 1999. In addition to the case studies that were conducted by some governments and an international NGO research team, the IGES FC team presented its research findings to the intergovernmental processes. It appears that collaboration between NGOs and governments is expected to play an important role in the UNFF.

The International Tropical Timber Agreement (ITTA), revised in 1994, sets out in its basic objectives a goal that was to have been achieved by the year 2000—tropical timber traded internationally should only come from sustainably managed forests. International cooperation was expected to facilitate the achievement of this goal in developing countries. In 1995, criteria and indicators for the sustainable management of temperate and boreal forests were adopted. However, these agreements only set out general obligations and guidelines. Actual methods for domestic implementation were not specified.

2. Research outputs on four aspects of forest conservation strategies

2.1 Objectives and targets

As explained above, forest conservation is one of the key issues in the world today, and the development of a strategy for sustainable forest management is most urgently needed. This research project seeks to prepare a strategy for the conservation and sustainable management of forests in Asia and the Pacific region. It also aims to propose and conduct preliminary research on necessary supporting legal measures and policies, as well as basic elements to be included in a global forest strategy which would be proposed as the result of the second phase, based on analysis and examination of forests in other regions, including boreal forests.

For that purpose, both domestic and international aspects of forest issues need to be analyzed. In particular, existing conditions and obstacles preventing the resolution of forest issues should be examined at the local production level as well as the domestic and international trade levels. It is also necessary to study the underlying causes of deforestation and forest degradation.

At the local production level, it has been widely recognized that forest management should be based on participation by local people. This research project proposed a management system for local forests as a local "commons," based on local people, as well as a system for the management of forests as national commons, based on supervision and participation by the general public of each country. Because such management systems should be supported by sustainable utilization of non-timber forest products (NTFPs), this project examined the utilization of NTFPs and proposed the ways they can be sustainably produced and utilized.

At the trade level, this project used econometrics—the use of statistical data to study economic problems—to analyze and examine the timber trade. It proposed control measures necessary for ensuring that exported timber comes only from sustainably managed forests. It also examined timber certification and labeling systems, ways to restrict consumption at the domestic and international levels, and other measures.

In order to avoid any duplication of work in this field, results and information of research activities on forest conservation should be collected as often as possible. To clarify the underlying causes of deforestation and forest degradation, the dependence of local societies on the timber trade in different countries should be analyzed from a historical perspective, with the goal of proposing forest conservation strategy. For participatory management systems, theoretical analysis and examination were carried out from the perspectives of various fields of social sciences. In order to discover effective policies and actions, on-site research was conducted on such issues as land ownership and traditional forest utilization, relevant legal systems and administrative institutions, decision-making processes of local communities, the role of village meetings, and forestry systems in the Asia and the Pacific region. Field research was also carried out on desirable ways to utilize forest products, and the use of forests for recreation and tourism, paying special attention to equitable sharing of the benefits derived from forests. The roles of environmental and social impact assessment procedures were also examined, based on actual cases.

This Project was organized into sub-task groups focusing on four sub-themes: structural analysis, timber trade, participatory management, and legal and administrative measures (Figure 1). The sub-team on Structural Analysis of Regional Forest Destruction and the Underlying Causes of Deforestation and Degradation identified the relationship between the region's deforestation and the degradation of forest land, and processes of social change (or the impact of the main streams of human activities) which affect forest areas and land use. The sub-team also provided recommendations on the ongoing IFF processes, in particular, the discussions on the "underlying causes of deforestation and degradation of forests." This sub-team also clarified what kind of changes would be necessary in the relevant societies, and made a number of policy recommendations.

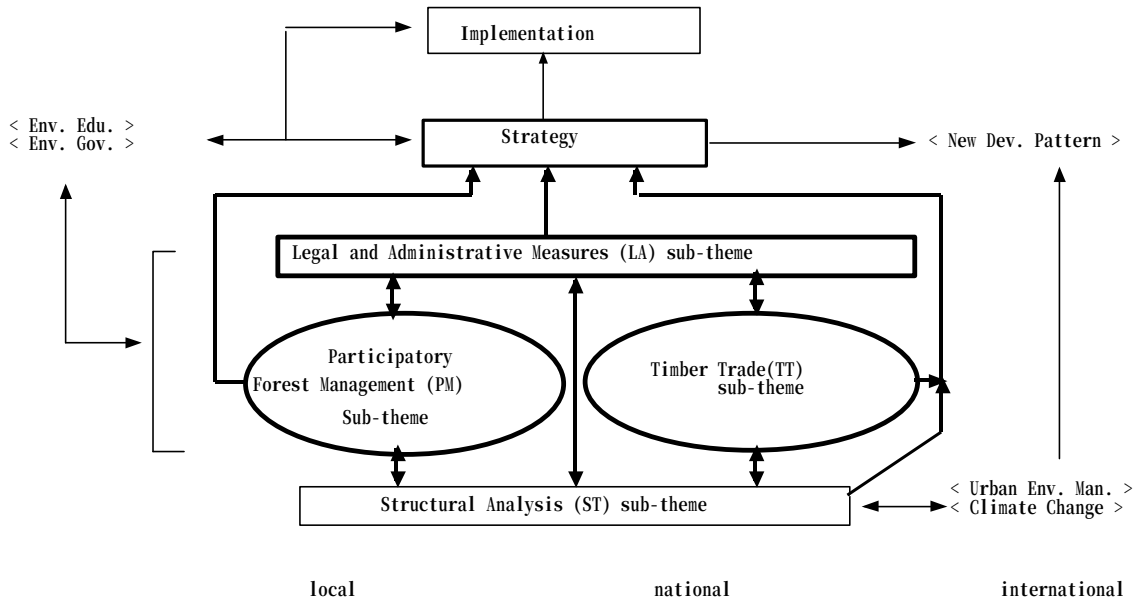


Figure 1. Project on Forest Conservation

The sub-team on Timber Trade Policy to Support Sustainable Forest Management studied the effects of timber trade policy on forest resources and forest management in order to create desirable timber trade schemes to support sustainable forest management. For that purpose, this sub-team researched the structure of the timber trade, build an econometric model to describe timber trade structure, and evaluated the effects of timber trade policies on social welfare. The project also evaluated the effects of timber trade policies on forest resources, and proposed strategic policies for the trade of forest-based products, to support sustainable forest management.

The sub-team on Participatory Forest Management presented and specified feasible strategies to facilitate participatory forest management systems. This sub-team carried out field research on forest utilization by forest dwellers in selected local areas, analyzed their economic, social, and cultural characteristics, examined participatory forest management plans from the view point of local people and proposed alternative national forest management policies.

The sub-team on Legal and Administrative Supporting Measures for Sustainable Forest Management identified legal principles to ensure, facilitate, assist, support, promote and accelerate the sustainable management of forest areas, based on an analysis of international treaties related to forest management, referring to Asia-Pacific perspectives and philosophy. Moreover, this sub-group conducted research and analysis to build a theoretical base for proposing the guidelines at the level of international society in the second phase of IGES research. Relevant domestic laws and regulations were examined, attaching importance to the actual results of their application, in order to identify and develop legal and other measures based on substantive and social justice. This sub-team also examined environmental impact assessment procedures and proposed supporting measures for law enforcement and administration. Based on the research, this sub-team made recommendations for the legal and administrative aspects of forest management.

This sub-team also clarified legal and administrative measures for sustainable forest management and effective participation of local people. These measures are necessary for the implementation of the actions recommended by the four sub-teams in legal and administrative systems related to forest management.

2.2 Outline of research results

a. Research on underlying causes of forest loss in the Asia-Pacific[1]

(a) Introduction

The forests in the Asia-Pacific region account for a quarter of the world's forest area. Forests in the region range from tropical and temperate to boreal forests, and contain rich forest resources and biodiversity. However, they are facing a serious crisis with accelerated forest loss (deforestation and the degradation). Consequently, the region has lost almost 95 percent of its frontier forests. The amount of deforestation in the region during the 1980s was smaller than that in Africa and Latin America; however, the region lost almost a million hectares in the period, and had the highest rate of annual changes of forest and other wooded land (-0.6 percent per year). This rate is similar to that of Latin America (-0.5 percent per year). As for boreal forests in the region, the degradation has rapidly worsened.

During the last decade, especially after the Earth Summit in 1992, forest loss in many regions has received strong attention and led to many initiatives by governments and intergovernmental agencies. However, most efforts have failed to achieve effective results. Many researchers and experts have analyzed the possible explanations why these recent activities have failed to progress. There seems to be broad agreement that these initiatives have focused too much attention on the proximate causes of forest loss, and have largely ignored the underlying causes of these problems.

Forest loss is sometimes caused by natural factors. However, forest loss stemming from various kinds of human activities has been increasing during the last thirty years. In this study we will deal with forest loss directly or indirectly caused by human activities.

In this paper, the term "forest loss" means not only the decline of forest land area (through replacement or deforestation) but also the decline of the forest quality (modification or the degradation of the forest), including tree health, ecosystems, and biodiversity. The term "deforestation" describes the complete, long-term removal of tree cover. In a definition from the FAO publication, "Forest resources assessment 1990: Tropical countries," the term deforestation refers to change of land use with depletion of tree crown cover to less than 10 percent. Changes within the forest class (from closed to open forest) which negatively affect the stand or site and, in particular, lower the production capacity are termed forest "degradation." Many activities modifying forests can be accurately described as forest degradation. In the ECE/FAO publication, "The Forest Resource of the Temperate Zone," the term "replacement" and "modification" are used in place of "deforestation" and "degradation." The term "replacement" means replacement of natural forest or other wooded land by another land use. The term "forest modification" refers to modifications that may be regressive (degradation) or progressive (recovery or enhancement).

The frequency and intensity of human intervention determines the degree of human impact on forest loss. Continued forest uses such as the repeated over-harvesting of resources may lead to significant damage. Extreme degradation can, of course, lead to total forest replacement. Thus we should consider how to use forest resources in a sustainable way to prevent serious forest degradation. In this context we need to grasp the relation between the degradation/replacement of forest and deforestation/modification, that is, the process of forest loss.

Forest loss can be attributed to many different causes or factors. Some causes operate directly on the forest itself and are often easily recognizable in the field. These causes are referred to as "direct causes" (E/CN.17/IPF/1996/2). Behind these direct causes may lie a whole sequence of causes, each more indirect or remote than the one which precedes it. These causes are referred to as "underlying causes" (E/CN.17/IPF/1996/2).

[1] This part is drafted by Dr. YAMANE Masanobu in cooperation with the following collaborators of the sub-team: Mr. MATSUMOTO Satoru (Mekong Watch Japan), Mr. NOGUCHI Eiichiro (Friends of Earth Japan), Dr. KAKIZAWA Hiroaki (Hokkaido Univ.), Dr. INOUE Makoto (The Univ. Tokyo), SEKI Yoshiki (Waseda Univ.), Ms. OKAMOTO Sachie (Japan Indonesia NGO Network), Dr. SASAKI Shiro (National Ethnology Museum), Mr. TAGUCHI Hiromi (The Univ. Tokyo), Mr. NAKAI Takafumi (ROTOBO), Dr. MORIMOTO Kazuo (Archaeological Institute of Chiba Pref.), Mr. CHANTHIRATH, Khanpha (FORCAP Lao P.D.R.), Dr. LU Wenming (Chinese Academy of Forestry), Mr. Joshua Peter NEWELL (Friends of Earth Japan), Dr. Alexander SHEINGAUZ (Economic Research Institute, Russia), Ms. Mia SISCAWATI (Indonesian Institute for Forest and Environment, Indonesia) and Dr. Philip HIRSCH (Univ. Sydney, Australia).

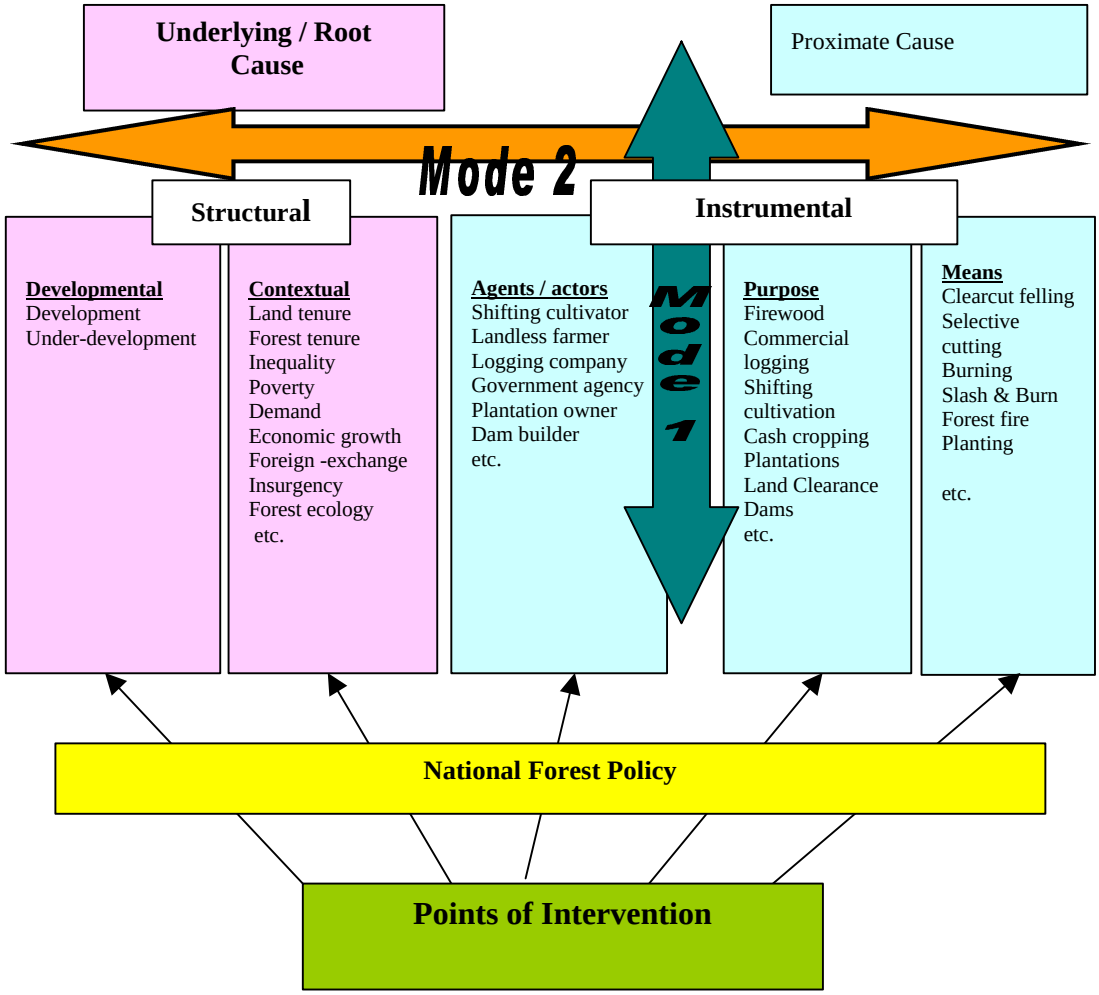
(b) Methodology

The Structural Analysis of Forest Loss team focused mainly on the underlying causes of recent forest loss (UCFL) in the Asia-Pacific region. The underlying causes, as well as major proximate causes, were sorted by identifying common elements among target regions, as well as uniqueness elements of the countries and sub-regions. In other words, the team tried to identify a credible chain of causation of forest loss. This procedure provided a clear picture of the structural context of recent forest loss and desirable directions for overcoming forest loss in the Asia-Pacific region.

For the purposes of this study, two approaches were employed in the team's research activities: country studies and active collaboration in the UC/NGOs Asian Process of the Intergovernmental Forum on Forests.

With respect to the first approach, the Project conducted country studies consisting of investigations into the underlying causes, data collection and studies of international linkages of forest resource use from the perspective of underlying causes. Target study areas which were investigated were the insular Southeast Asian sub-region, Indonesia and the Philippines. For the Mekong River Basin region, Thailand, Lao P.D.R., Vietnam and Cambodia were selected. In Northeast Asia, the emphasis was on studies in the southern part of the Russian Far East, but preliminary studies for China were also carried out. For these target areas, members of four research groups for country studies collected information through available literature and workshops, as well as by carrying out field studies.

As a main analytical framework, the team employed an explanatory model of forest loss proposed by Hirsch (2000) which was developed based on existing studies addressing the causes of forest loss. This model is a schematic representation of the ways and modes of explaining deforestation (Figure 2). The diagram shows the different ways in which more immediate causes are framed in terms of means, purposes and agents or key actors in the process of deforestation or the degradation of forests. Demonstrating the relationships between the means and purposes of forest loss makes it easier to identify the key actors in forest loss. For example, in terms of the commercial logging of timber, which has been pointed out as a leading cause of tropical forest loss, many studies revealed the different roles of such actors as foreign timber importing companies, government and military, and concession holders, etc. The diagram shows how underlying causes can be identified with reference to contextual and developmental factors. Contextual factors include such economic and social factors as land/forest tenure, inequality, poverty, demand, economic growth, foreign exchange, and insurgency. In addition, physical conditions of the forest ecology such as soil, climate, and geography are also significant contextual factors. For example, some tree species and agricultural products grow in specific conditions, leading to forest development. In developing countries, traditional forest use was often destroyed due to economic developments such as the transition to a market economy. On the other hand, in underdeveloped areas, serious forest destruction due to over harvesting of firewood and overgrazing is widely observed. These are examples of "developmental factors."



Source: Modified from diagram proposed by Hirsch (2000)

Figure 2. Explanatory Modes of Underlying Causes of Forest Loss

In the second approach, the team co-organized several Asian regional meetings within the IFF-UC/NGO initiative that were aimed at international policy dialogue. The IFF organized a global workshop on this matter in January 1999, in addition to case studies, which were conducted by governments and international NGO research teams. Mr. Yoichi Kuroda, the Asian regional focal point for this work, collaborated with Ms. Mia Siscawati (Indonesia) and attended a series of meetings at several large conferences. IGES also co-organized a preliminary meeting for the Asia Regional Workshop and the IFF-UC/NGO Asia Regional Meeting with the goal of effectively implementing the discussion results through the IFF process.

(c) Proximate Causes of Forest Loss in the Asia-Pacific Region

i. Means

Proximate causes in the target areas, which were identified by the team, are listed in Table 1. Sorting out these causes in terms of means, it is obvious that deforestation and the degradation of forest have progressed through various processes such as logging, burning, forest fire, and physical extraction.

Much of the forest loss in the target areas generally started with logging of primeval forests. The logging caused degradation of forests, but is not connected directly with the major deforestation. Often logging is only the first stage of forest loss. Most logging operations target valuable timber for commercial purposes. In the pre-stage of forest conversion in every tropical country factors such as settlement programs, agricultural farm development (in many

tropical countries), hydropower development (in Lao P.D.R.), mining (in Indonesia), settlement (in all tropical countries), and many extensive large-scale logging operations were observed.

After logging, forestlands are degraded or deforested via three processes: the absence of management, planting of tree plantations, and conversion to other uses. When logging sites are not managed, the forestland of both tropical and boreal zones progresses into secondary forest and finally, usually more than one or two hundred years later (if allowed), into climax forest with almost the same structure as the original forest. However, cut-over land in tropical forests in the target study areas quite frequently experienced an invasion of settlers who came along with the road for the logging operation. Settlers began slash and burn agriculture or non-traditional swidden farming (shifting cultivation). Forests, where non-traditional swidden farming was conducted often turned into unproductive land due to the ecological properties of tropical forest soils, the vulnerability of soil to erosion, meteorological factors and other causes. Without careful fire control, forest fires occurred frequently, and as a consequence, forests occasionally transformed into grasslands or barren lands. In this sense, the increase of non-traditional swidden farming that originated from natural forest extraction is a key proximate cause of deforestation.

In many cases where cut-over areas were planted with seedlings after logging, large-scale tree plantings of fast-growing species for industrial purposes was promoted in many cases. Since forest conversion projects largely degrade the ecological and production functions of a forest, industrial tree plantings are activities that can lead to further forest degradation.

There are many activities that can occur when a cut-over area is converted to other land uses. One activity common among tropical countries is reclamation of land for paddy fields or croplands. These developments have preceded and been tightly connected with settlement policies. In the Mekong River Basin, the physical destruction due to regional and internal wars contributed greatly to forest loss. In Lao P.D.R. during the Second Indochina War, large forests were bombed along the Ho Chi Minh Trail and in Vietnam, the United States Air Force had a deliberate policy of destroying forest cover by chemical defoliation.[2]

Table 1. Recent major proximate causes of forest loss in the target areas addressed

Area	Recent Major Causes
Philippines	Export-oriented unsustainable commercial logging, the failure of industrial plantations, frequent forest fires caused by local people, mining operations, forest conversion for agricultural expansion, upland farming, and government projects such as dams, land clearing for the landless.
Indonesia	Export-oriented unsustainable commercial logging, logging for domestic plywood industry, transmigration projects and paddy field development projects, non-traditional shifting cultivation, industrial tree plantations, frequent large-scale forest fires and oil-palm plantation development.
Thailand	Logging, forest clearance for cash crops, shifting cultivation, rubber plantations, shrimp farming, land zoning and expansion of protected areas.
Lao PDR	Direct and indirect impacts of the Second Indochina War, land clearance for rice self-sufficiency, shifting cultivation, hydropower development and commercial logging.
Vietnam	Direct and indirect impacts of the Second Indochina War, land clearance for rice self-sufficiency, in-country migration, coffee plantations, shifting cultivation, financial resources for the military from logging.
Cambodia	Land clearing for crops, logging under the protection of powerful people and the military.
Southern Russian Far East	Export-oriented unsustainable commercial logging and large-scale forest fires.

(Note: The structural contexts of the underlined causes were analyzed by this Project.)

[2] According to Mr. Xeme Samoutry, Director General Department of Forestry, Lao P.D.R. (Xeme 2001), the Indochina War and bombing by U.S. forces resulted in tens of thousands of refugees, and destruction of forests by bombs themselves and by the refugees. Vast areas still remain barren and unexploded ordnances (UXOs) prevent access to rehabilitation of them or management of existing forests.

When the schematic diagram described above is used to explain the processes of forest loss in the target areas, we can point out that the process of forest destruction in the southern part of the Russian Far East, for example, is rather simple. The forest loss in the southern part of the Russian Far East progressed through a combination of unsustainable commercial logging and frequent forest fires. By contrast, tropical forest countries in the southeast region experienced more complex processes. Thailand and the Philippines, which experienced serious forest loss in the past, have gone through most of processes shown in the diagram. Indonesia also has passed through almost all the processes for forest loss, excluding destruction by war. As for Lao P.D.R. and Cambodia, the move from logging to planting has not been established in earnest, but all other routes are identified.

ii. Purposes

These means of forest development mentioned above often depended on the purpose of local use such as commercial logging, conversion to cash crops or plantations, industrial plantations, land clearance for rice self-sufficiency, shifting cultivation, land clearing for migration, and hydropower development.

Forests in the all target areas have played important roles in the local economy. Forests often were a base of the local social structure and environment and the basis of the livelihood of indigenous peoples. Forests have been extracted for local/household purposes, but the impact is rather low compared with commercial logging.

In the target areas commercial logging of primary forests has been conducted widely both in tropical, temporal and boreal areas. This is because timber resources are a key natural resource for foreign exchange and timber extraction is one easy means to acquire it. In many cases commercial logging is conducted through the allocation of a logging concession by paying a forest-use charge to the national treasury. However, many past timber extractions were financial sources for powerful people and members of the military with tight connections to domestic and/or foreign forest industries because forests are usually state-owned and managed by government authority. Commercial timber harvest operations often have been undertaken in a large-scale and extensive way in order to gain enormous profits. These operations have favored special groups, without any consultation with local people. In many cases in the Philippines, fires resulting from arson originated in land conflicts between local people and concession holders or logging companies. In Indonesia, commercial logging were conducted to produce materials for the domestic plywood industry after the exportation of raw logs was banned. In the southern part of the Russian Far East, local forest management bodies often harvested timber illegally, in the name of forest management or pest control, to compensate for serious budget shortfalls. Extensive commercial logging had strong connections directly or indirectly with forest fires due to the drop in forest humidity after logging, the careless handling of fire by logging workers and the increased number of small fires started by citizens.

Plantation developments such as rubber (in Thailand), coffee (in Vietnam) and oil palm (in Indonesia) have also brought large-scale forest conversions. Additionally, the conversion of forest lands to commercial ranches (in the Philippines) and shrimp farms (in Thailand) is also identified as a major proximate cause. Since land clearing in these activities often employs low-cost intentional burning, escaped fires frequently cause forest fires (in the Philippines and Indonesia). As a result, vast grassland and unproductive lands appeared due to repeatedly occurring forest fires. In the target areas forest conversion was closely connected with commercial timber extraction and various kinds of loopholes and illegal acts were widely observed. In many cases, since the company’s real objective is to use the wood, the company abandons the site after logging. The common feature of these forest conversions is that products from the newly developed land are aimed at acquiring foreign currency, supported by strong demand in consumer countries

Industrial tree plantations were promoted actively when natural forest resources were depleted (in the Philippines and Indonesia). Large companies proceeded forcibly with industrial tree plantations in the Philippines, without consulting with local people and stakeholders. As a result, forest fires started by local people due to land conflicts occurred frequently. For land clearing on project sites in Indonesia, low-cost intentional burning was employed broadly, and frequently caused forest fires even after an official circular prohibiting burning was circulated. In short, forest conversion projects become a key proximate cause leading to deforestation if the procedures and controls are

inappropriate.

Land Clearance for Rice Self-sufficiency has grown in Indonesia, Lao P.D.R. and Vietnam since 1975 along with the notable population increases of these countries. There is a shared feature, which is that this activity has been prompted by national policy in each country.

Shifting cultivation is often pointed out as a leading proximate cause of forest loss in tropical areas. However, many studies revealed that shifting cultivation has been a traditional way of forest use in tropical forests and never destroyed forests. These activities have only recently been viewed as questionable, for example, since the 1960s in Thailand, and after 1975 in Vietnam. In general, increasing population pressure or competition with other land use due to social and economic development has made traditional shifting cultivation transform in an unsustainable way, leading forest loss (e.g., Lao P.D.R.).

Not only governmental programs of in-country colonization and settlement but also spontaneous settlements due to population pressure or competition for land use, have prompted this cause. In the Philippines, the clearing and settlement program continued until 1978. It is estimated that 1.2 million persons in total moved to Mindanao from other islands from 1948 to 1960. In Indonesia, the “Transmigration” program started in 1983 and continues today. More than 724,000 hectares were estimated to have been converted from 1994 to 1997 (Inoue, 1998). In the Mekong River Basin, in-country migration, which was planned as government policy, resulted in forest clearing became serious for the first time since the Second Indochina war.

In the Mekong River Basin, many large-scale dams were constructed, leading to the extraction of vast forests. In Lao P.D.R., hydropower development started with construction of the Nam Ngum Dam in the 1960s, while development accelerated in the 1990s. Often logging concessions were granted to clear the sites planned for dam development. Such permission is said to provide favorable opportunities for extensive timber extraction.

iii. Actors

There are various kind of domestic agents involved in activities leading to forest loss: actors such as central and local governments, domestic logging companies and industry, military authorities, powerful people and local people. At the same time, foreign agents and actors such as timber importing countries, foreign capital from importing countries, and foreign aid institutions also play crucial roles.

The roles of governments vary between target areas but they can be classified according to their functions: planners and executors of economic development policies; planners of forest policies; and bodies responsible for forest management. In terms of the design and implementation of economic development policy, all central governments promoted timber logging as a major means of acquiring foreign exchange and recognized forestland as a source to be converted for agriculture and other land uses, which then progressed to forest conversion projects. Such large-scale forest development programs were done with a top-down approach and pushed forward forcibly without consultation with local people and other stakeholders, because in many cases the forests are owned by the state. Governments in these countries have strong authority. Besides forcible forest development, governments also promoted a set of policies aimed at industrialization and transition to a market economy. As forest policy planners, natural resource policies aimed at extracting valuable wood were promoted in every area. In these policies of forest exploitation the logging operations were extensive, yet reforestation programs were not included. The governments wielded enormous power in the allocation of logging concessions. When natural forest resources became depleted, many governments aggressively promoted large-scale industrial tree plantations. These forest policies were frequently implemented forcibly under a top-down approach without environmental impact assessments (EIA), social impact assessments or consultations with affected parties, in particular the local communities and local authorities. As bodies responsible for forest management, governments often fail because they allow corruption and the violation of rules. Insufficiencies in management of resources are common indirect causes of forest loss in the target areas. The concrete effect of the inability of governments to manage their forests appears in logging concessions (in the Philippines, Indonesia and others) forest

conversion projects (Indonesia), and illegal logging (in Indonesia, Cambodia and the southern part of the Russian Far East).

Domestic logging companies/industry, connected tightly with the government, military authority and power people, have played a leading role in forest loss in many places. In many cases, logging companies conduct forest extractions through the allocation of logging concession by paying forest-use charges to the national treasury. Large forestry concessions to companies were allocated in a very opaque way, while proper monitoring and control by forestry administrative bodies was quite limited. Many logging companies employed a "cut-irresponsibly-and-get-out" strategy, which became the most efficient way to maximize their profits (the Philippines (Seki, 2000), Indonesia, the southern part of the Russian Far East). Even in forest conversion projects such as oil palm plantations in Indonesia, in many cases the company's real objective was forest extraction, leaving many cut-over areas abandoned after logging (Okamoto, 2000).

In Indonesia, the military authority had strong power to allocate logging concessions, and they promoted natural forest extraction because of their tight connections with the domestic forest industry, Chinese merchant capital and foreign capital from timber importing countries. In Vietnam (Hirsch, 2000) and Cambodia (Bottomley, 2000), the forest has been legally and illegally exploited as a financial resource by the military. These activities were identified as the most serious causes of forest loss in the area.

Powerful People are also key domestic actors. In the Philippines, in the past, members of Congress established forest policies and forest regulatory systems that enabled logging companies to obtain enormous profits (Seki, 2000). Many of the politicians were concession holders profiting from logging at the same time that they held political positions. In Indonesia, powerful people such as Chinese merchants, who were closely connected to government and military authorities, proceeded with natural forest extraction and established a domestic plywood industry and oil palm plantation developments, leading to large scale forest loss from the 1970s to the present (Araya, 1998; Siscawati, 2000).

Local people have played a very significant role in the occurrence of forest fires through not only non-traditional swidden farming but also through local conflicts and the careless handling of small fires. However, they seem to be passive actors affecting various social and economical underlying causes. In terms of the increase of non-traditional shifting cultivation, various factors involved are identified in our studies, such as poverty and population increases in rural areas, political instability, in-country migration (internal colonization), timber extraction from land, clearance of community forests, and others. Local people are the major culprits of arson, causing frequent forest fires as a result of land conflicts (in the Philippines (Seki, 2000)). In the southern part of the Russian Far East, citizen's and local people's careless handling of small fires (such as bonfires) and cigarettes have greatly contributed to recent large-scale fires (Yamane, 2000).

Many studies have indicated that foreign actors such as importing countries and foreign capital have played significant roles in forest destruction because if the strong demand for forest products in consumer countries. The extraction of teak is a typical example and Lao cypress forest extraction in Lao P.D.R. (Yamane and Chanthirath, 2000) is a special case. Moreover, it is difficult to talk about forest development in the Philippines and Indonesia without mentioning the strong demand for timber in importing countries, Japan in particular, and the contribution of Japanese investors (Kuroda, 2000). It is well known that Japanese investors have extracted valuable timber resources, depleted them and then shifted production to another country, one after another. When the supply of tropical raw logs decreased greatly or faced import restrictions, the Japanese plywood industry shifted from tropical countries to Russia as a source of timber. The rapid increase of demand in consumer countries has contributed greatly to the recent expansion of forest conversion projects aimed at industrial plantations in the Philippines (Seki, 2000) and in Indonesia (Siscawati, 2000b). In terms of drastic increases in oil palm plantation development in Indonesia, the strong demand in importing countries has been boosted by corporate image strategies claiming that vegetable oils are good for the environment and health (Okamoto, 2000). Besides these cases, intervention in adjoining countries, such as policy changes leading to a decrease of domestic timber production under strong wood consumption (in China for example (Lu, 2000)), has accelerated forest development in timber supplier countries. The effects of such intervention were found in the recent increase in border

timber trade from Russia to China (Yamane and Lu, 2000) and from Lao P.D.R. and Cambodia to China and Thailand (Hirsch, 2000). Such regional trade will be more active in the near and middle term.

Many NGOs have already pointed out that foreign aid institutions have played a negative role leading to forest loss in developing countries. Our studies confirmed two causes leading to forest loss: "structural adjustment programs" and "individual project support." Both in Indonesia (Okamoto, 2000) and the southern part of the Russian Far East (Sheingauz, 2000a), the "structural adjustment programs" by the International Monetary Fund and the World Bank forcibly pushed ahead hasty economic policy reforms, including forest policy reforms. Our study of oil palm plantation developments indicates that the "improved" policies still contain various defects, which bring about still more forest destruction (Okamoto, 2000). Studies in the southern part of the Russian Far East also showed that structural adjustment programs have led to serious economic crises and consequently deterioration of the forestry sector, leading to an acceleration of forest loss (Yamane, 2000). In terms of individual project support, the case of international aid for industrial tree plantations in the Philippines is interesting (Seki, 2000). After the Aquino government came to power, developed countries provided "environmental aid" and the introduction of participatory forest policy was connected with this funding. On continental Southeast Asia, "The Greater Mekong Sub-regional Cooperation Program," promoted by the Asian Development Bank along with support from many bilateral and multilateral agencies, also belongs to this category. This project prompted large-scale infrastructure development (Hirsch, 2000) and the expansion of regional road networks increasing the rate of log extraction and, more generally, encouraging settlement and land clearance for cash crops. Hydropower projects prompted under the same program are encouraging further forest clearance. The Market Development Program promoted by the Mekong program also put pressure on forest products previously used mainly for local subsistence purposes. In more than a few cases, foreign aid programs for natural resource extraction such as mining functioned indirectly to promote forest destruction.

(d) UCFL Country Studies

The results of structural analysis on six leading proximate causes of forest loss from country studies areas, which were conducted according to the analytical framework mentioned earlier, are as follows.

As cases of unsustainable logging for foreign exchange, we have many observations from such places as the Philippines, the southern part of the Russian Far East, and the Mekong Basin (Thailand, Vietnam, Cambodia and Lao P.D.R.). Clear felling and wasteful and/or intensive selective felling are major means of foreign exchange and financial sources of the military and forest authorities. In these cases, many domestic and foreign actors are mutually related. Logging companies, central government authorities, the military, powerful people, concession owners and local forest management authorities are the domestic actors. Foreign actors include import and/or consumer countries and development assistance from timber-importing countries.

In the Philippines, the demand from importing countries such as Japan for tropical timber increased. As a result the country became a key log supplier. The sharp increase in log exports made timber exports a main source for the acquisition of foreign currency. Along with these trends, the government established a logging concession system, which enabled logging companies to obtain enormous profits and to employ "cut-and-run" strategies. The close relations between the Congress, the army and the bureaucrats enabled them to accumulate wealth, as has already been pointed out. The intensive market demands of timber import countries (especially Japan), and market forces, under the insufficient legal and administrative base, have been identified as leading underlying causes of the use of "cut-and-run" strategies.

In the southern part of the Russian Far East, logging operations in the region are quite extensive and wasteful, seeking to harvest high quality logs. This is why there are very few wood-processing facilities for low quality wood. Unreasonable pricing of timber has amplified the extensive and wasteful logging. Insufficient controls on the violation of rules were also an underlying factor. Under the current economic situation, the devaluation of the ruble has created favorable conditions for exports because logging is now the easiest way to acquire foreign currencies, especially from the Asia-Pacific region. Recently, the timber exports to China have been increasing at a rapid pace due to the reduction

of domestic timber production after China's launch of the Natural Forest Protection Program. With respect to UCFL, the increase in unsustainable (wasteful) commercial logging was mainly due to such internal and external "market forces" as the demand for foreign currency and the increased timber demand of the Asia-Pacific region, especially Japan and China. Various underlying causes of widespread unsustainable logging operations— originating from such ultimate causes as "economic and political instability" after the collapse of Soviet Union, and economic crises in 1998, and an "insufficient legal and administrative base" for sustainable forest resource use—are closely and mutually connected.

In Thailand, commercial logging started with British teak concessions in northern part of the country early in the twentieth century, though the period of intensive logging lasted from the 1960s until the closure of the forest concessions in 1989. Until 1989, logging concessions covered large parts of the forest area that lay outside national parks and wildlife sanctuaries. Concern over the effects of legal and illegal logging led to a logging ban in 1989, after disastrous floods in southern Thailand led to heavy losses of life. These floods were attributed in part to the clearing of land for timber.

In Vietnam, economic reforms since 1986 have encouraged the military to secure its own sources of finance from logging, mainly in the central highlands. Relations with Cambodia and Laos also give the military an advantage in timber exploitation and trade in border areas.

In Cambodia, over the last thirty years forest resources have been exploited intensively, especially during the post-UNCTAC period since 1993. Most of the country's forests are under concession licenses, including the heavily forested provinces. Logging under the protection of powerful people and the military is dominant throughout the country. Log production reached its highest level in 1997, at 4.3 million cubic meters (7 million hectares in area). Illegal timber felling accounted for at least 92 percent of the total production.

In Lao P.D.R., the exploitation of Lao cypress is one of the leading causes of the degradation of primary forests.[3] Lao cypress has been logged and exported, mainly for export to Japan, since the 1980s, without any effective conservation measures. The exploitation of the Lao cypress has undoubtedly been aggravated in recent years, and several Lao cypress habitats are on the verge of depletion. If Lao cypress logging is conducted at the same pace in the same unsustainable way the Lao cypress is likely to be extinct in less than a hundred years.

With respect to UCFL in the Mekong River Basin, the power of the military in the political structures of countries due to continuing war and political rivalry (*political instability*) is a recent leading underlying cause. In addition, trade to increase the amount of foreign exchange, demonstrated by the strong regional demand of Thailand and Vietnam (*market forces*), and a lack of funds, institutional capacity and willpower on the part of central and local-level authorities (*insufficient legal and administrative base*) has fueled this situation. In Lao P.D.R. the degradation of Lao cypress forests have various underlying causes of both domestic and foreign origin. However, the strong demand and consumption of Lao cypress in Japan appear to be the ultimate cause. The *insufficient legal and administrative base* has allowed the unsustainable resource exploitation.

In conclusion, commercial logging in the areas of this study has been caused by such internal and external market forces as the demand for foreign currency and the increase of timber demand in consumer countries. Various underlying causes of widespread unsustainable logging operations—originating in such underlying causes as *economic and political instability*, *insufficient legal and administrative base* and *economic and forest development policy*—are closely and mutually connected, and have encouraged unsustainable logging operations.

The *failure of industrial plantations* with large-scale reforestation of fast-growing tree species in the Philippines is a very instructive case. Foreign aid institutions played significant roles, along with domestic actors such as governmental

[3] According to Mr. Xeme Samoutry, Director General Department of Forestry, Lao P.D.R. (Xeme 2001), in the Prime Minister's Decree No. 10 on Control of Forest Operation and Timber Business, 4 October 2000, logging of five species including Lao cypress is banned along with other provisions ordering strict enforcement of regulations concerning harvesting and sales of logs in general.

forest authorities and local people. The largest forest-related project, the Contract Reforestation Program (CRP), was controlled by the central government, based on the principle of state control of plantations. However, large-scale restrictions on local people's access to land intensified land conflicts, and the enormous flow of project funds spread corruption, leading to the non-payment of contract fees to plantation workers. At the same time, the Department of Environment and Natural Resources (DENR) promoted the government-managed CRP and Industrial Forest Management Agreements (IFMAs), and leased several thousand hectares to one company. When an unbroken area of several thousand hectares is granted to one company, it is almost impossible to avoid conflicts with local people's land use. It is not surprising that, as with the CRP, the IFMAs have not produced good reforestation results. The failure of industrial plantations stemmed from the defects in forest policy that used a top-down project to establish large areas for plantation lands, while disregarding forest use by local people. Moreover, the shortage of good governance is thought to have led to a lack of appropriate control over the projects. In the background, the behavioral patterns of authorities leading to the centralization of power and profit seeking, conspicuous since the Marcos-era, were still prevalent. In conclusion, an *insufficient legal and administrative base*, which disregarded forest use by local people, led to the failure of industrial plantations in the Philippines.

Frequent (large-scale) forest fires are one of the recent significant proximate causes of forest loss in the Asia-Pacific region. The cases of the Philippines, Indonesia, and the southern part of the Russian Far East will be discussed and analyzed below. Local people have played a prominent role, along with logging companies and local forest management authorities.

In the Philippines, the development of logged land for agricultural use was not legally sanctioned; nevertheless, logged land is often used for commercial ranching. Pasture fires were a common means to clear forests for commercial ranching. As a result of repeated fires, secondary forests were converted to grasslands covered with herbs such as cogon (*Imperata cylindrica*), and vast grasslands have emerged in the country. The fires from pasture burning spread beyond the limits of the commercial pastures and over a wide area of the surrounding second-growth forests, with a devastating effect on the forests. In the Philippines, conflict over public forest use between the government and local people was a major secondary cause of frequent forest fires. In many cases, local people, angry about having their access to forests restricted by the government, set fires. The greatest number of forest fires occurred in the man-made plantations. There were many conflicts between local people and the government about restrictions on local peoples' access because of commercial logging and industrial plantation projects. The UCFL in the countries originated in past forest policies which promoted commercial logging, commercial ranching and industrial plantations. These policies not only disregarded the rights of land possession and of forest resource use of public forestland, but also directing the profits of the projects to specific parties such as logging companies. These forest development projects went against the reality that indigenous people and pioneers from the lowlands had inhabited public forestland since after World War II, and that they had used various forest resources there.

The Russian Far East has also been severely affected by forest fires. Many areas here have suffered fires every year. Middle to large-scale forest fires have also occurred frequently. The forest fires of 1998 in Khabarovsk were the worst since 1954 and 1976, and more than 1.9 million hectares of forests were burnt that year. After the collapse of the Soviet Union, the fire control system has weakened remarkably due to a substantial decrease in the budget from the federal government for the fire control system. The increase in small fires in forest areas was another proximate cause. Recent motorization has brought more citizens into forest areas than before, seeking products for their daily use, and their careless handling of cigarettes and fires have become the main human cause of fire. In this area, political and economic instability in Russia has resulted in serious shortages in budget allocations to local fire control bodies. The increased number of citizens' visit to forests has been another key underlying factor. An *insufficient legal and administrative base* has lead to inadequate forest institutions and regulation. The wasteful resource use policy, which is a legacy of the Soviet era, is also a significant underlying cause. These two root causes were mutually connected to increased *small fires* and *logging sites with high fire risks*, amplifying the problems of the *weak fire control system*, caused frequent forests fires on a large scale. Forest management operations, which mainly depend on natural regeneration, may also accelerate forest degradation.

In Indonesia, there was a big forest fire on the island of Borneo in 1983. At the time it was thought to be the biggest forest fire in history. The combined effects of fire and drought destroyed 25,500 square kilometers of primary and secondary forest and a further 7,500 square kilometers of settlement areas. Since then, the cycle of forest fires in Borneo accelerating to be increasing and fires were reported to be larger than ever before during 1994. FAO estimates in SOFO (FAO, *State of the World's Forests 1999*) that around two million hectares of Indonesian forest area burned in 1997 and more than that burned in 1998. The fires caused considerable damage to human health, to the forests and natural ecosystems, including wildlife habitat, and to the social and cultural dimensions of forest-dwelling people, and will evidently quicken the global warming process by emitting carbon dioxide. In conclusion, recent large-scale forest fires in Indonesia were caused mainly by (a) national economic development policies promoting large-scale forest conversion projects with an inappropriate land allocation policy, supported by strong demand for forest products in consumer countries, (b) insufficient enforcement of fire prevention in the forest development programs, and (c) insufficient forest fire control systems.

Cases of *forest conversion for the purpose of (rubber, oil palm and coffee) plantations and/or cash cropping* through land-clearance by intentional burning or clear-felling were widely observed in Indonesia, Thailand, Lao P.D.R. and Vietnam. The causes included both domestic and foreign actors such as governments, conglomerates, logging companies, domestic and foreign consumers, and foreign aid institutions.

In Indonesia, the development of palm oil plantations is a recent key proximate cause of forest loss. This forest conversion has not only led to deforestation but also the activities have strong connections with forest fires. Moreover, the large-scale use of agricultural chemicals has led to not only people's health being damaged, but also to the degradation of forest and the loss of biodiversity, because repeated use of herbicides causes environmental pollution. By 1997, the total area under palm oil cultivation, which has increased remarkably since 1978, reached 2.5 million hectares. Conglomerates now dominate the sector, with eight of them owning land banks totaling 2.1 million hectares out of 5.4 million hectares officially allocated for palm oil. The number of new plantations is still expected to grow. Most of Indonesia is suited to palm oil cultivation, and there are vast available lands that could be converted to plantation sites. On the other hand, the area under cultivation in Malaysia, currently the world's top producer, has reached the saturation point. Accordingly, such natural factors, along with the rapid demand growth in consumer countries and favorable domestic policies which do not pay enough attention to the realities of current land use, even after policy reforms due to the IMF's recommendations, have brought strong pressure for conversion. The introduction of rubber and eucalyptus industrial tree plantations in the so-called "degraded forests," and shrimp farming in cleared mangrove forests, is recognized as one of major causes of deforestation in the Mekong River Basin.

In Thailand, clearance of land for commercial dry-land crops increased rapidly from 1960s and slowed noticeably after the late 1980s, with the enforcement of forest reserve status. Shrimp farming boomed in the late 1980s, following the collapse of the Thai shrimp industry, mainly along the Gulf of Thailand coastline. This has had a severe impact on mangroves, most recently along the Andaman Sea coastline.

In Vietnam, logging has increased dramatically in the central highlands, as has the clearing of land for cultivation. Until recently, coffee and other cash crops were being grown in plantations. Shrimp farming provinces in the far south of the country have had a particularly strong influence on the rate of mangrove clearance. In the Mekong River Basin, industry ignores the local subsistence use of natural resources, which is as much of a leading underlying cause as strong demand in consumer countries. In conclusion, *domestic economic development policies with industry emphasis* associated with *strong demand in consumer countries* has led to increased rates of forest conversion to plantation and cash cropping.

Direct and indirect destruction caused by war and/or local conflict was observed in Lao P.D.R. and Vietnam, causing massive destruction through the use of heavy firearms, and forest loss through the influence of governments, militaries and refugees. In Lao P.D.R., during the Second Indochina War from 1964 to 1973, three million tons of bombs were dropped on Laos, causing not only massive destruction of human life and settlements, but also of forests along the country's eastern border areas neighboring Vietnam and in Xieng Khouang province. Indirect effects have lasted up to

the present day through a high rate of population movement following the uprooting of established communities. In Vietnam, during the Second Indochina War, from 1965 to 1973, the United States Air Force had a deliberate policy of destroying forest cover of the communist forces in the South. This led to destruction of at least two million hectares of forest in the central highlands and of mangrove forests along the southern coasts. It is apparent that *political instability* is a key underlying cause of the Second Indochina War. The war also had an indirect impact, which was the internal settlement of refugees and repatriates, which was closely connected with national policy.

In case of *land clearance for in-country migration (internal colonization)* reported in Vietnam and Lao P.D.R., the central government, landless farmers, refugees, and repatriates were key actors. Laos has always had population movement associated both with traditional agricultural and inheritance practices and due to insecurity, but migration has been particularly great during and since the Second Indochina War (i.e. since the 1960s), in part because of government policy for highlanders to resettle in more accessible areas. The massive internal refugee problem after 1975, when one-quarter of the country's population had been displaced by U.S. bombing, led to clearing of new land. This was—and continues to be—exacerbated by the problem of unexploded ordinances, making the cultivation of otherwise fertile lowland areas impossible, and requiring further clearance. The Lao P.D.R. government has urged upland ethnic minorities to migrate down to the lowlands for rice cropping, while the Vietnamese government has encouraged the lowlanders to migrate up to hills in the central highland for cultivation. Such policies have created the conflict over the use of forest resources, which might lead to unsustainable forest management. They are related to both the historical background and its policy on ethnic minorities. In Vietnam, after 1975, overcrowded cities and more densely settled rural areas sent up to 6 million people to New Economic Zones, a policy which continues today. However, the main period of movement was during the late 1970s and 1980s. The central highlands were the destination of several million lowland Vietnamese, resulting in the clearing of the forests for intensive harvesting. This team does not have an intensive analysis of the situation, but clearly the rapid population growth of cities and incomplete policies for internal colonization were leading underlying causes. In conclusion, *incomplete economic/forest policies*, which disregarded the impact on the targeted forest areas, led to forest loss in the two countries.

(e) UCFL Addressed in the IFF-UC/NGO Asia Process

From the intensive discussion in the IFF-UC/NGO Asia Process, the major underlying causes of forest loss in the Asian region were summarized under eight headings: (1) the lack of recognition of the real value of forests, (2) the development paradigm, based on over-consumption of timber, (3) subsidies and inappropriate incentives that created inappropriate governmental policies and control, (4) shortcomings in political and governmental systems, (5) lack of decentralization, participation and transparency in government decision-making, (6) inadequate land and resource allocation systems that do not take adequate account of the various stakeholders under the occurrence of population growth, migration and poverty, (7) lack of appropriate knowledge of forest biodiversity, ecosystem management and traditional forest use among the parties concerned with forest use, and (8) negative effects of international financial and aid institutions, and private capital investment.

(f) UCFL in the Asia-Pacific Region

Based on these two approaches mentioned above, the IGES FC Project addressed five key underlying causes of forest loss, which are closely related to recent major proximate causes of forest loss in the region. The first UCFL is the lack of recognition of the real value of forests. Actors related to forest development have, in many observed situations, ignored the real value of forests, including their environmental functions and their function as the base of the local community. Instead, they have attempted to maximize economic profits from the development of the forests, ignoring the real value of the exploited forests. In the background, the lack of appropriate knowledge and measures of forest biodiversity, ecosystem management and traditional forest use among the parties concerned seems to have encouraged narrow-minded resource use policies. The second UCFL is the impact of market forces under incomplete market systems. IGES FC studies frequently observed that the forest developments in target areas were driven in unsustainable ways that centered on monetary benefits, in particular foreign exchanges, and on market forces which originated in strong consumer demand for products, especially in importing countries. The studies also indicated that "economic and

forest development policies with an industrial emphasis" have been a leading cause of forest loss in the region. So far, forest policies have used the benefits of timber extraction and forest conversion as a means of obtaining foreign exchange or as a financial source for powerful people. Moreover an *insufficient political will and lack of compliance* to stop destructive forest development was recognized as a key UCFL of ongoing forest loss. Many institutional causes, such as an insufficient legal and administrative base for sustainable forest management, incomplete public forestland policy and insufficient attention to local people's rights, can be extracted from this UCFL. Although IGES FC studies did not examine it in detail, it is certain that many direct or indirect causes of forest loss were strongly affected by *political disorder and economic difficulties*. This UCFL has brought about many causes of forest loss such as inability to govern the forests, the expansion of rule violation and corruption, the increase of poverty and the consequent rise of non-traditional shifting cultivators. Moreover, various impacts of forest loss themselves have often brought on more political, social and economic instability. In this sense, the progress of forest loss itself is an UCFL.

(g) Recommendations -Directions to Overcome Forest Loss[4]

Based on the research mentioned above the sub-team proposed the following recommendations under five headings, of requirements in order to overcome forest loss in the Asia-Pacific Region.

i. Respect for the multiple functions of forests

In the target areas most of the recent forest developments employing unsustainable means leading to forest loss have been conducted with the goal of maximizing monetary benefit. On the other hand, the multiple functions of forests have been almost completely ignored. Forest loss has not only had an economic impact, but also an impact on the environment and people's livelihoods, and created land conflicts and land alienation. In many cases the impacts of forest loss exceeded the economic profits from forest development. Thus we should clarify the real value of forests and develop conservation measure for these multiple values. To achieve this, the following are examples of steps which must be taken:

(i) Develop a method for the evaluation of the multiple functions and values of forests, including the traditional knowledge uses of forest resources. The methodology should be urgently promoted under the initiative of the international community such as the UNFF. Developing an internationally accepted methodology to evaluate the carbon dioxide absorbing capacity of forests, as well as social and economic indicators, is an urgent need.
(ii) Take into account all social, environmental and economic costs when considering the benefits of any land or forest development and the price of timber products.
(iii) Require an environmental impact assessment (EIA) and a social impact assessment for all proposed forest development projects.
(iv) Ensure the compatibility of land-use allocations with the local communities and neighboring communities who use or need access to the same land or resources on that land, taking into consideration the interrelationships within the ecosystem.

ii. Consumption of forest goods produced in sustainable way

Unsustainable forest development has accelerated because of strong demand for natural resources, both from forests and land converted from forests. Illegal or uncontrolled timber extraction originates in many cases from strong demand from consumer countries, coupled with the inability of supplier countries to govern their forest resources. Thus, the following steps towards the control of forest product consumption and sustainable forest products are necessary:

(i) Consumer countries should encourage the reduction of resource use, the promotion of recycling, and the re-use of products. More efficient techniques of resource use should be developed and employed. In addition, consumer awareness and education should be promoted.
(ii) The trade in forest products should be required to be compatible with the principle of forest sustainability. Economic mechanisms such as voluntary certification should be examined and introduced as steps in this direction.

[4] This part was drafted based on individual recommendations proposed in ST sub-team related papers and revised based on discussions and comments at the IGES-LIPI and the IGES-NOUL workshops on forest conservation and IGES FC International Workshop on Forest Conservation Strategy in the Asia Pacific.

(iii) The central and local governments of timber exporting countries, in addition to major importers of timber, must take responsibility and exert control over the origin of wood products that are imported, and refuse transactions of timber of illegal and non-sustainable origin. For effective monitoring and to control illegal trade, the capacity of relevant officials in the institutions of both producing and consuming countries should be promoted.

iii. Reform of economic and forest policy towards sustainable forest management

Forest loss in the target areas has been directly and indirectly promoted through top-down forest development which ignores the customary rights and uses of forests, and provides insufficient governance. To move towards sustainable forest management in the target areas, economic and forest policy reforms should consider the following policy options, with a special emphasis on strong governance using a participatory approach:

(i) Central government must continue to show the political will to regulate and monitor forestry with strong measures, and balance the interests of the state, business and local communities with a master plan for appropriate, sustainable and equitable development.
(ii) Central and local governments must make decisions transparently, consult stakeholders on all decisions regarding the forestry sector, and provide for participatory processes that actively engage a wide range of stakeholders.
(iii) Central and local governments must recognize the right and ability of local communities to manage lands and forests, and work towards institutional and policy reforms to protect and safeguard these community rights.
(iv) Central governments must play a regulatory, as well as a facilitative role, in sustainable forest management and should concentrate on building the capacity of local authorities, so that they will be better able to facilitate community resource issues.
(v) Central governments should regulate the involvement of local governments, because the regional elite class can easily manipulate local governments in some countries. The intervention into forest management of these elite, seeking special concessions, is likely to lead to undesirable results in resource management, from the perspective of local people.
(vi) The parallel shadow economy under which illegal logging has thrived should be closed down. This is a prerequisite to the creation of properly functioning judicial and law enforcement agencies.
(vii) The legal foundations of community forestry should include the provision that individuals or associations may access and use forest lands by entering into contractual agreements with the government.
(viii) Appropriate forest zoning can be a base for sustainable forest use. Protected conservation areas should be allocated enough size to give them an appropriate management base, allowing the proper balancing between the various functions of and interests in the forest.
(ix) When reforming or establishing policies related to forest use, central governments should enact appropriate measures to mitigate the impacts of the policies on forest management in neighboring countries and areas.

iv. Reform of the legal and administrative bases for sustainable forest management

Our study suggested that the legal and administrative base must effectively recognize the rights, knowledge and participation of local communities in forest management and forest development. In addition, because of the significant impacts of large-scale forest fires on forest loss in the target areas, including both tropical and boreal forests, an effective legal and administrative base for fire control is also urgently needed.

For community forestry and participatory forest management:

(i) The central government must provide early and efficient coordination to resolve inter-ministerial conflicts.
(ii) Legal mechanisms should be developed which recognize traditional land-use practices and systems of customary tenure in order to protect the rights of indigenous peoples.
(iii) Procedures for granting forest concessions must be transparent, with consultation of all the affected parties—especially local communities and local authorities.
(iv) Land with traditional social, economic and cultural significance should be delineated and excluded from the forest concessions. These lands should be given to communities located within the concessions through an equitable recognition of customary rights. Such areas should be carved out and excluded from concession contracts so that the ownership and use rights of forest communities are not compromised.
(v) National governments, in close co-operation with the provincial authorities and the local communities, should conduct long-term monitoring of logging operations, as well as log transport and exports. Monitoring groups at the village level should be encouraged and provided training.

For fire control:

(vi) Administration of national and local forest fire control should be strengthened, coupled with national fire control policy and programs.

(vii) Well-balanced forest fire control measures, with attention to both advanced technology and practical equipment, should be allocated in the system.
(viii) Sufficient financial and human resources should be allocated to the local stations.
(ix) Restrictions on development activities, in particular, intentional burning for land clearance, should be enforced more strictly. In addition, sufficient funds and time should be allocated to sub-contractors responsible for land clearing in the field so that they can work in a way that minimizes fire risk.

v. Regional coordination to realize forest conservation

Strong demand for forest products means that market forces, economic policies and forest policies in timber importing countries are linked with forest use and forest loss in exporting countries. Foreign aid institutions, as well as the absence of appropriate coordination on trans-boundary issues are also factors in forest loss.

(i) The international community should place increased emphasis on community involvement and participation in its approaches to forest conservation, natural resource management and land-use planning.
(ii) Pledges of loans or grants made by the international community should be carefully conditioned on the basis of respect for human rights and sustainable management of natural resources, in agreements that are informed and transparent to the public. Compliance with such written conditions should be closely monitored in order to avoid corruption. Officers and government officials must be held accountable for their policies.
(iii) The international community should assist governments in developing community forestry or joint-forest management systems, thus encouraging local communities to continue to value forest resources through increased involvement in their forest management.
(iv) The international community should support initiatives providing accurate information on forestry and land use issues at the local level, particularly concerning human rights, indigenous rights and forest management within a country.
(v) The international community should make the best use of past experience of forest loss in countries such as the Philippines and Thailand. In its move toward more people's participation in forest management, the Philippines is on the leading edge compared to other Asian countries. The Philippines and the international society should disseminate information about their experiences to other countries so the same mistakes are repeated. The lessons of Thailand could contribute to understanding the impacts and results of rapid deforestation on communities and a national economy.
(vi) The international community should support education for journalists on forest-related issues. In order to avoid "stereotypical" reporting on the causes of deforestation, journalists should be encouraged to learn more about forest-related issues, especially the underlying causes of deforestation.
(vii) International cooperation for fire control, and the expansion of international aid, should be promoted with the full support of developed countries in the Asia-Pacific region.
(viii) The international community should monitor the restoration of burned sites, because these areas tend to be converted later into plantations for economic benefit, and because without the proper restoration the biodiversity of the sites will deteriorate in the long-term, leading to serious adverse effects on ecological systems.

(Masanobu Yamane)

b. Research on timber trade policy to support sustainable forest management[5]

The goal of the sub-theme studying timber trade policy (TT) is to advocate appropriate strategies for the formation of timber trade policies leading to sustainable forest management. The study program was composed of four sections. First, the framework and data availability for forest resource accounting were studied. Second, sustainable forest management was discussed from the viewpoint of the measures of forest and timber certificates. Third, timber trade structures and the policies of major timber-trading countries were clarified from their historical perspective. The econometric analyses in this section, using time-series data, revealed the impact of customs duties and non-tariff barriers on international timber-trades. Finally, a spatial equilibrium model was created to simulate timber trade in the Asia-Pacific regional, and to help assess various policies and measures.

[5] This part is drafted by NAGATA Shin in cooperation with the following collaborators of the sub-theme: YOUN Yeo-Chang, Ruperto P. Alonzo, SHIMAMOTO Mihoko, YAMAMOTO Nobuyuki, MINOWA Yasushi, and TACHIBANA Satoshi. The original draft was examined at an international workshop in Jakarta held in 2000 and an international seminar held in 16-18 January 2001 in Tokyo. This is the final report, based on the comments made by various stakeholders such as governmental officers, NGOs, researchers, and international organizations at workshops and the seminar.

Recently, the structure of the global timber trade has been changing drastically, from trade in logs to more trade in processed wood products. This change in part reflects the efforts of the environmental movement worldwide and the exhaustion of useful forest resources. Considering the shifts in the timber trade, we believe that an orderly timber trade is necessary for sustainable forest management.

(a) Methodology

An examination of the global situation of forests reveals increases in forest area in many developed countries, and decreases in virtually all the developing countries. Although we should not overlook new kinds of forest decay in Europe, the situation in developing countries is so poor that we would summarize the over-all view of the developing world as "devastated."

This cross-sectional view can be demonstrated through a time-series setting. At the onset of economic development, the natural forest may exist abundantly. People live in harmony with rich forests, utilizing and collecting necessities from the forest. As people cultivate land, they convert forests into farmland. Agricultural production enables the human population to grow, accelerating deforestation. Industrialization hastens the speed of deforestation, because the increased human population can achieve greater agricultural production through the use of chemicals and mechanization. But in the course of economic development, the pressure on deforestation descends. Historically, perhaps because of different comparative advantages, industrialized economies generally import forest products in exchange for industrial products. Thus they do not need to use their own forests as sources of timber. Despite their degraded forests due to past overuse, developed countries are able to restore healthy forests. They change the focus of their forest policy from development to reforestation and protection. We admit that the above description is greatly oversimplified, but that there is nevertheless some truth to this story.

In the course of their economic development, many of today's developed countries imported timber from other countries to lessen the pressure on their own forest resources. Now, many deforested developing countries could import timber from the restored forests of developed countries. We cannot overlook the importance of timber trade policy on forest resource management.

(b) Uruguay Round Trade Results

Uruguay Round Trade Agreement has led to the following results:

i. The tariff reduction agreement has reduced global tariffs by an average of one-third from their base rates.
ii. Commodity sectors where tariffs were eliminated by the major trading partners of the agreement include beer, brown distilled spirits, pharmaceuticals, steel, construction equipment, agricultural equipment, medical equipment, toys, furniture, and paper and paper products.
iii. The agreement called for tariff reductions to be made over five years, in equal annual staged reductions, although in some cases, such as pulp and paper, the reductions are being implemented over 10 years.
iv. The agreement of the pulp and paper sub-sector in the zero-for-zero initiative for wood products was between the United States, European Union, Canada, Japan, Korea, Finland, Austria, New Zealand, Hong Kong, Singapore, Australia, Brazil, and Chile.
v. In the lumber and wood products sub-sector, the Uruguay Round did not achieve the zero-for-zero initiative for wood products. The United States, Canada, European Union, Hong Kong, New Zealand, Singapore, and Sweden supported the agreement, but Japan did not.
vi. In the furniture sub-sector, the Uruguay Round achieved a zero-for-zero agreement between key countries, with tariffs to be eliminated over five years.

The history of APEC and ATL (Accelerated Tariff Liberalization) is as follows. In 1994, APEC leaders agreed to the goal of free and open trade in the APEC region by 2010 for developed countries, and by 2020 for developing countries. In 1997, APEC leaders nominated fifteen sectors, including forest products (nominated by US, Canada, NZ, Indonesia), for Early Voluntary Sectoral Liberalization (EVSL). Forest products were also selected as one of the nine sectors for immediate action. The proposals of the Forest Products EVSL Initiative by four countries were merged, and each country was assigned the study of four elements (Tariff Initiatives, Non-Tariff Measures, Standards and Conformance,

and Economic and Technical Cooperation). At the APEC summit in November 1998, APEC leaders agreed to move the tariff portions of the sectoral EVSL initiatives to the WTO, in order to reach a critical mass of support for concluding an agreement in all eight sectors (because telecommunications MRA did not contain a tariff component) by the end of 1999. Work on the other elements of the sectoral EVSL initiatives continues within APEC.

The ATL initiative includes further reductions, and acceleration in the timing of reductions, of tariffs agreed to as part of the Uruguay Round. Because of the existence of the Uruguay Round zero-for-zero agreement on pulp, paper, and printed materials, different disciplines were proposed for these commodities than for the other products covered by the proposal. The proposal is for the elimination of tariffs on wood chemicals, wood, rattan, and wood furniture by developed countries by 1 January 2002. The proposal suggests that developing countries should strive to meet the same targets, but accepts that in special circumstances and on a case-by-case basis, elimination could be delayed until 1 January 2004. For pulp, paper, and printed products, existing parties to the Uruguay Round zero-for-zero agreement would accelerate tariff removal to 1 January 2000. Others would attempt to remove tariffs by the same date, but developing countries could delay tariff removal until 1 January 2002, on a case-by-case basis for a limited number of specific products.

(c) Forest Resource Accounting

Agenda 21, the action program which was adopted at the UN Conference on Environment and Development held in Rio de Janeiro in 1992, explicitly states that environmental accounts should be developed by all members. The United Nations, through its statistical secretariat UNSD (United Nations Statistical Division), which is responsible for the standards of the SNA (System of National Accounts), provides a satellite system to the SNA and SEEA (System of integrated Environmental and Economic Accounts). The purpose of SEEA is to show the impact of economic activities on the natural environment.

SEEA consists of several different parts, with both physical and monetary accounts. The first step is to link environmental data expressed in physical units with the national accounts system. The second step is to make monetary accounts, which are based on the physical accounts, in order to evaluate the impact in economic terms, allowing the estimation of, for example, the costs of the damage caused by emissions. Furthermore, an accounting system requires that data compilation be made in terms of balanced accounts.

A close study on natural resource accounts has been made in Nordic and western European countries. The development of natural resource accounts started in Norway as early as the 1970s. Since Nordic countries have large forest areas, and produce much output of forest products, forest resource accounts have been one of main fields of study since its early days. Forests are one of the crucial themes in natural resource accounts even now.

We shall explain briefly the general structure of forest resource accounts. What are forest resource accounts? In brief, they can be defined as consistent accounting frameworks that adjust forest-related resource and environmental information. Forest resource accounts comprise four accounts: (1) forest accounts, (2) forestland accounts, (3) forest product accounts, and (4) forest management accounts.

Forest accounts represent the initial stock, period flow, and final stock of trees growing in forests, as the tree volume. What must be noticed is that increases and decreases of tree volume are caused not only by tree growth, but also by changes in forestland area. In order to solve this problem, we can adopt forestland accounts.

Forest product accounts use weight, volume, and other physical terms to describe the varied uses, from raw logs to waste. Forest resource accounts include two accounts: a forest sector/product balance table and a forest mass balance table. When we combine forest accounts and forest product accounts into one united account, we can describe a consistent system from forest growth to the abandonment of wood residues.

Forest management accounts use monetary terms to show the flow of funds used in managing forests. Various monetary flows, such as subsidies, taxes and investments, are described in these accounts. All monetary flows represented in

these accounts are real money that is transacted in actual markets.

Within forest resource accounts, forestland accounts serve to directly link forest accounts with forest management accounts, and provide for their consistency. Input and output for forest management necessarily reflect the current state of forests and forestlands. In these systems, the most difficult question is linking forest accounts with forest management accounts, because it requires the linking of land accounts and economic accounts, that is, the linkage of physical accounts and monetary accounts. In order to construct forestland accounts, it is appropriate to utilize GIS (geographic information systems) or LIS (land information systems).

(d) Recent trends of free trade of forest products

The U.S. Trade Representative (USTR) published a report entitled "Accelerated Tariff Liberalization in the Forest Products Sector: A Study of the Economic and Environmental Effects." In the report the USTR supported "accelerated tariff liberalization" in the forest products sector based on a scenario analysis using a spatial equilibrium model known as the Global Forest Products Model (GFPM) constructed by the UN Food and Agriculture Organization (FAO) and Center for International Trade in Forest Products (CINTRAFOR) in the U.S. The analysis and the interpretation of the results appear to contain many disputable points, but the debate on this topic has revealed that no mechanism for scientific assessment in the negotiation of free trade exists in international organizations and governments in each country. Only non-governmental organizations (NGOs) have spoken out against these results, but they lack adequate expertise to evaluate them scientifically. Points of support for ATL by the spatial equilibrium models in the 1999 report of the USTR concerning tariff elimination are summarized as follows:

i. The absence of significant changes in production and consumption, at the world scale. For both models, and all products, production and consumption change by less than 1 percent, and typically by less than 0.5 percent compared to the baseline, in 2010.
ii. Changes in the commodity composition of trade (a shift toward more processed products), and in geographic patterns of production and trade. Both models indicate that the ATL is likely to increase production in, and exports from, northern Europe, Oceania (Australia and New Zealand), South America (Chile), and Asia (Indonesia and Malaysia).
iii. The likelihood of changes in U.S. trade (both imports and exports), accompanied by little or no net effect on U.S. production and consumption. Both models indicate the likelihood of reductions in U.S. exports of logs and increases in exports of some processed products.
iv. Finally, both models suggest that the ATL is likely to change timber harvests in a number of countries, but both models indicate the likelihood that the net effect at the world scale will be small, less than 0.5 percent increase in timber harvests for industrial products.

The other points supporting the tariff elimination by the USTR are summarized below.

i. Competition will encourage the development of cost- and resource-efficient manufacturing technologies, and increasing use of recovered fiber in the manufacture of paper and paperboard.
ii. Decreases in timber harvesting will be concentrated in primary forests and the increases will be concentrated in secondary forests and plantations.
iii. Trade liberalization generally, and the package of ATL initiatives in particular, may contribute to higher incomes, especially in developing countries. There is also widely-accepted evidence that increasing income in developing countries will eventually contribute to greater investments in environmental protection, and a reduction in consumption of fuelwood.

Defects of the model used in the supportive simulation of tariff abolishment are as listed below:

i. Shortages in the analysis about the effects of the changes in trade on the forest resources of each country, for example the accelerated rate of harvesting in natural forests, and incentives of reforestation or plantation
ii. Shortages in the analysis of the structure of the forest products industries, for example the monopolistic or oligopolistic character of the industries, which will distort free trade principles by preventing the people from receiving the profits of free trade
iii. Shortages in the study and quantitative and qualitative comparisons about the merits of free trade, who will benefit from tariff elimination, who will lose profits, and who will suffer the disadvantages in the case of forest products

The real situation of Southeast Asia varies from place to place. In the Philippines and Thailand, which have already lost

large parts of their natural forest, reforestation projects by governments are unable to cover and maintain the forests nationwide. Therefore, economic incentives are necessary to encourage planting and tending by the private sector. Additionally, domestic log markets (which do not compete in the international market) and domestic forest industries will be needed. In Indonesia, the exploitation of natural forests is ongoing, and shortages of materials to satisfy the production capacity of the processing industries are being observed. During the transition period from the Suharto era, the country needed liberalization in the domestic industrial structure, but they were concerned about excessive intervention from the IMF and multinational corporations. For example, in 1997, the IMF required the government to reduce the tariff rate on log exports, and in 1998, the IMF recommended the auction of concessions (i.e., opening the concession market to foreign companies). The result of the IMF requirements would be the clearing of the forest resources (material) to exploitation. The development of processing industries, from the viewpoint of employment and earning of foreign exchange, the improvement of the efficiency of recovery rates, and the exploitation of forest resource for themselves are beneficial for Indonesia. Therefore, the domestic processing industries, as an infant industry, should be restricted to domestic competition or competition with non-monopolistic companies.

(e) Country case studies of timber trade policy

i. Malaysia

In peninsular Malaysia, the forest-related policies are based on federal policies, such as the National Forestry Policy (1978) and the First and Second Industrial Master Plans of Malaysia (1986-). Forest exploitation of peninsular Malaysia has begun to convert forests into rubber and palm oil plantations in the early twenty-first century. As a result, peninsular Malaysia has plentiful rubber wood plantations, producing timber which is processed into furniture and other products. A log export ban has been enforced since the 1960s. Peninsular Malaysia has been promoting furniture, medium-density fiberboard (MDF) and the molding industry. The current forest-related situation of peninsular Malaysia is good, making it important for them to continuously promote wood-based industries, especially for high value-added products. It may also be necessary to examine the situation of the next material to be used for wood products, e.g. palm.

In Sabah State, the forest-related industry is dependent on federal policies. Forest exploitation has expanded since the 1960s because of the high quality logs in the region. Sabah State revenue is heavily dependent on timber related royalties, especially on export logs. As the result of rapid forest exploitation, Sabah's forest resources have been decreasing drastically since the 1970s. The current state of forest resources is deteriorating, as demonstrated by the scarcity of wood materials, decrease of old growth forest and increase in secondary forests. Promoting wood-based industries such as plywood and timber, Sabah has restricted log exports through the following actions since the end of the 1980s: executing log export quotas from 1989 to 1992 and since 1996, and banning the export of logs from 1993 to 1996. The state needs to diversify its wood-based industries in order to improve its undiversified economy. It is also important for the state to plant trees intensively and immediately. The decrease of forest resources in Sabah is a serious problem for both the local economy and the global environment.

In Sarawak State, the forest-related industry is dependent on federal policies. Forest exploitation of the state began in the 1980s, later than other states because of its lower timber quality, and because of export restrictions of Indonesia and Sabah. Therefore, Sarawak has comparatively rich forests today. Sarawak created a log export quota in 1992, and tightened it in 1993 to encourage wood-based industries. Sarawak developed some timber processing zones during the 1990s. The state has promoted forest-related industries on the whole such as logs, plywood, wood residue products and pulp and paper. We concluded that the current situation of Sarawak is good. Its timber processing zones will play an important role for its development of forest-related industries and state economy. However, it is necessary for Sarawak to sustain its forest resources through reforestation.

ii. The Philippines

It is important to grasp the past, present and future situation of the forest resources in the Philippines in order to analyze

the Philippine forest product industries. But it is quite difficult to get sufficient data about forest areas and growing stock in the Philippines. Time series data about woodland areas defined by the national government exists, but it does not assure that trees are actually standing. Therefore the only way to describe the resource situation is by integrating the fragmented data.

The total land area of the Philippines is about 30 million hectares. The forest covered about 50 percent of the total land area in 1950, but dropped to only 18 percent in 1996. The records show that the depletion of forest resources in the Philippines began shortly after World War II, and that the largest part of the domestic old growth forest resources have already disappeared. In 1992, all logging in virgin forests was banned, so since 1991, old growth areas of dipterocarp forests have stopped decreasing in the statistical data. But other natural forests are still continuing to be degraded.

With respect to log production and trade, the peak of log exports in the Philippines was seen in the first half of the 1970s. Although log production exceeded 10 million cubic meters early in the 1970s, after that it began to decrease drastically. In 1980, production was 6.4 million cubic meters; in 1985, it became 3.6 million cubic meters. Log exports also dropped, from 8.4 million cubic meters in 1970, to 0.76 million cubic meters in 1980. In 1986, log exports were finally banned, and in 1987 the government announced that it would not issue any new TLA (Philippine's timber concessions). At the same time, imports of logs began to increase. In 1996, the amount of imports exceeded the production quantity. The largest share of imported logs were sawlogs and veneer logs, and from the production volume of wood, pulp and pulpwood imports totaled around 240,000 cubic meters. Major countries exporting to the Philippines are Indonesia, Papua New Guinea, and New Zealand, but other Pacific Rim countries export as well. The Philippines import from African and Latin American countries, as well. These countries exported more than 10,000 cubic meters to the Philippines in 1995. The CIF prices of imported logs from these countries in 1995 were around US$100 per cubic meter, but there are rather large differences among these countries.

Domestic producers of forest products are now at critical point, which will determine whether or not they can survive. Because the supply of cheap, high-quality materials from natural forests has been depleted, they cannot compete with cheap, high-quality imported goods by using their old facilities and techniques. Therefore producers are focusing on the following issues.

The first issue is tariff reduction. Forest products producers in the Philippines have strong concerns about reductions in the tariff rate for imported forest products, because the high tariffs protected the producers from international competition. In the case of plywood, the tariff rate was 50 percent until 1995. However, the Philippines signed the Common Effective Preferential Tariff (CEPT) Agreement in ASEAN in 1992, which requires member countries with tariff rates above 20 percent on products to reduce the tariffs to that level within a five to eight year period after 1993. Thereafter, tariffs are to be reduced further to a level of 0 to 5 percent within a seven year period. In accordance with this agreement, from 1996 to 1997, the tariff rate on plywood decreased to 30 percent, and in 1998 it dropped to 20 percent. The gross profit rate of plywood has been extremely low recently. If the tariff rate goes down to 10 percent, domestic plywood companies will be endangered. As for lumber, the tariff rate was 20 percent until 1997, and was scheduled to be reduced to 10 percent in 1998. The Philippines Wood Producers Association requested a postponement on the reduction to 10 percent until 2000, to allow producers to restructuring the industry. Domestic producers are also waiting for a future price drop of wood material from plantation forests that are growing now.

The second issue is the future of the supply of cheap domestic wood materials. One of the most important issues for the domestic lumber and plywood producers is how they can obtain cheap materials from domestic forests or foreign markets. Supplies from foreign natural forests are shrinking gradually, meaning that domestic producers can look forward to increases in the supply of cheap wood material from domestic plantation forests. The following estimates demonstrate that the domestic plantation forests will be able to supply cheap wood material. By NFDO (1997) the reforestation costs of a governmental project in Luzon in 1996 are 20,463.28 pesos per hectare. The estimate of the average yield of fast growing species is 160 cubic meters per hectare, which will be harvestable in eight years. Under these assumptions the reforestation costs are 127.9 pesos per cubic meter, which means 480.8 pesos per cubic meter in present value, eight years later. The harvesting and transportation costs are 750 pesos per cubic meter for the plantation

forests, meaning that the supply price will be 1230.8 pesos per cubic meter, or US$29.5 per cubic meter at present exchange rates. These are the estimates of government projects; in the case of industrial plantations the costs will be slightly lower. But domestic producers still have to wait several years for the increased supply of domestic wood material. Another problem is how to use plantation species for face panels of plywood, although there are some species that can be used.

Now that the natural forests have been completely depleted, the Philippines are in a transitional period, where the forest products industry is becoming more reliant on plantation forestry. One possible scenario is that the Philippine domestic forest products industry will be supported in order to recover the degraded forestlands through reforestation. This situation is similar to that of Japan. It will be necessary to reconsider the tariff reductions and the free trade system of forest products based on this point of view.

iii. Korea

The changes in North American forest policy for biodiversity conservation reduced the supply of coniferous logs on the international market, and induced an increase in the international price of coniferous logs. Consumers in the Korean log market subsequently changed their source of log imports from North America to New Zealand and Chile. The elasticity of Korean coniferous log demand with respect to its own price was -0.4, while that of tropical hardwood logs was 0.256. The consumption of timber in Korea will continue to rise, while the domestic production of logs will increase slightly. Therefore, the supply of timber from foreign countries will still be important to Korea.

The import of tropical hardwood timber has been also affected by international environmental policy, which stresses the conservation of tropical forests. The conservation of tropical forests reduced the supply of tropical timber, raising the price. The higher relative price of tropical timber (to that of softwood) effectively reduced the demand for tropical timber in Korea, and induced an increase in demand for softwood. The higher relative price of hardwood, expected in the coming decades, implies that long-term forestry investment should be changed from the present softwood-oriented policy to one for hardwood production.

(f) Forest Certification Schemes

Initially FSC's interests focused on tropical forests, but these days they have shifted towards temperate forests. The main reasons behind the change may be (a) tropical countries fear that constraints on timber production from tropical forest lead to unfair trade restrictions, (b) FAO pointed out that one of the most important causes of tropical deforestation was not from timber production but from conversion to agricultural lands, and (c) the fact that timber from temperate forests constitutes about 80 percent of the world timber trade.

Although the Asian region has a large number of countries and forest areas, there are only few forest and timber certifications. As to FSC certification, there were seven countries with the certification in September 2000. Their share of the world total is 2.9 percent, for the number of certifications, and 0.8 percent of the total area of certification.

Past certification records reveal that the Rain Forest Alliance, in terms of the number of certifications, and SGS in terms of the area of certifications, rise above the common herd. One of the reasons why certifying institutions have certain tendencies is that they have different positions. For example, the Rain Forest Alliance takes communal, non-industrial, and private clients, while SGS takes industrial clients, probably because the former is a non-profit NGO, while SGS is a profit-seeking business enterprise.

Forest certification is a "soft" policy instrument, not a command-and-control type. It operates through incentives in the markets, in place of strict restrictions and efficiency. It saves through modifying costly forest management, counterbalancing certification costs, and provides non-monetary benefits. To make certification schemes efficient, certification should be carried out as a spontaneous process by independent institutions, according to objective criteria. All the participants from production to distribution should share the benefits, in order to make the scheme efficient and effective. Theoretically, the benefit comes from the higher price premium paid by consumers as a consideration for

getting products from appropriately managed forests. This incentive program stands as the kernel of certification schemes.

There are two merits to certification schemes. The first is the price premium. Consumers agree to pay more for environmentally sound products. An important point here is that they should recognize the certification process is reliable, and that they should support forest management systems which are certified through the scheme. The second is the savings in additional costs that would occur if the government were forced to introduce more stringent restrictions, for the sake of environmental protection.

Currently, the most important markets for certified products are Europe and North America. In Asia, they pay more attention to sustainability of forest resources, but not as much to the purchase of certified products. Certified products do not make up a large share of the world market. Total round wood production is 53 billion cubic feet in the world. Only around 0.6 percent (318 million cubic feet) is certified through the FSC, and only a fraction is traded as certified products. One of the main reasons stems from inefficiency in tracking the "chain of custody" (CoC). Even though forests themselves are certified, unless the entire process of production and distribution is appropriately absolved until final consumers get the products, certification scheme functions incompletely. If the chain breaks at one place, the entire certification fails. Most certified products at present are hardwoods used to make relatively small products such as guitars, furniture, and wooden fittings. The demand for certified softwood products will increase in the future.

(g) Recommendations

Clarifying the relationship between the social economy and the natural environment in the forest sector is one key step. In order to do this, we should use forest resource accounting. In terms of action, first, environmental information should be collected in accordance with a forest resource accounting framework and information on social economic factors. Then, forest resource accounts should be constructed promptly, namely (1) forest accounts, (2) forestland accounts, (3) forest product accounts, and (4) forest management accounts.

Controlling the forest products trade under the principle of forest sustainability and mitigation of the degradation of natural forests is another key step. In terms of concrete actions, trade restrictions may be needed to foster domestic markets for forest products, which encourages afforestation. Additionally, stricter controls, monitoring and punishment forgery, in the forestry and forest products trade, should be encouraged. Monitoring forest recourses and constructing resource accounting to clarify the relationship between human activities and forest resources should be promoted as well.

Forest and forestry certification schemes may be one possible solution to connect consumers' preferences and sustainable forest recourse management. For development appropriate schemes, market research, both in importing and exporting countries of the southeastern Asian region, which covers the flow of certified products in the national market, and case studies on certified forests of individual, enterprise, and public entities (through interviews and questionnaire survey) should be conducted. In southeastern Asia, national and local governments and environmental NGO's should take the initial steps. Preferred measures for forest certification and the trade of certified products should also be investigated. In Europe and America, buyers groups can play an important role.

Developing an effective strategy for the certification process and timber trading in each region or country is also a key step in the scheme. Many forestry industrialists are hesitant to participate in organizations with environmental protection characteristics. This is one of the reasons why FSC certification participation rates are so low. Another is that FSC criteria and indicators are too normative to understand, and too rigid to apply in the field. Therefore, in Southeast Asia, the following actions should be promoted, in order to make forest certification schemes acceptable. The first is to construct homogeneous evaluating criteria and indicators among certifying institutions, and to carry out certifying operations with them. The second action is to construct domestic criteria and indicators, based upon those of the FSC's.

The third action is to establish Asian certifying institutions.[6]

This study has not paid enough attention to the potential of timber certification as an incentive for sustainable forest management. As discussed in international forest policy forums, the impact of timber certification systems on the timber market should be addressed in future studies.

In terms of recommendations, forest resources need to be enriched. Even for the countries where forest resources are now increasing in volume, their utilization is still developing, either for timber or other material uses, or for recreational uses. The following concrete steps in this direction should be undertaken:

(i) Construct forest planning schemes in accordance with sustainable forest management.
(ii) Promote forest resource utilization, both in terms of material and recreational use.
(iii) Propagate understanding of the importance of forest resources among the public.
(iv) Encourage forestry which contributes to sound forest management and the sustainable utilization of forest resources through such measures as tax and subsidy schemes, encouraging the recruitment of forestry workers, promoting forest road construction and maintenance and enhancing mechanization.
(v) Promote sustainable forest management in the forest product industries.
(vi) Shift a large part of responsibility for forest management to the public sector.
(vii) Revitalize rural mountainous villages through the encouragement of the forestry industry.
(viii) Carry out research towards the fulfillment of sustainable forest management.

(Shin Nagata)

c. Research on participatory forest management[7]

(a) Characteristics of participatory forest management (PFM) systems in Southeast Asian countries

In the late 1970s, professional foresters in the tropics noticed that they could not manage the forest sustainably under the principles of conventional and industrial forestry, whereby local people were considered to be obstacles or constraints on forest management. “Social forestry” was recognized as an important norm or principle to produce successful sustainable forest management, even though industrial forestry has been dominant in practice.

Originally, social forestry and community forestry were defined as any situation that intimately involves local people in forestry activities for the purpose of rural development. These days, however, it seems that the term “social forestry” involves a wider range of comprehensive participatory activities, and the term “community forestry” implies collective activities, rather than individual activities such as farm forestry.

In general, social forestry consists of two major components. One of them is participatory forest management (PFM) in the forestry sector. The other includes (1) development of infrastructure such as roads, meeting places, schools, and clinics; (2) agricultural extension; and (3) generation of income sources for rural development, etc. If the latter activities prevail without the component of PFM, however, the activities are not necessarily called “social forestry” but the more general term “rural development.” It is evident that the core of social forestry is PFM.

The purpose of this section is to clarify the characteristics of the PFM systems in Southeast Asian countries under certain common criteria.

i. Activities of forest management

[6] So far established certifying institutions are based in Europe and the Americas.

[7] This part is drafted by Prof. INOUE, Makoto. The author wrote an original draft in cooperation with Mr. Martinus Nanang, Mr. HYAKUMURA Kimihiko, Dr. OIKAWA Yosei, Ms. HAYAMA Atsuko, Mr. SEKI Yoshiki, Dr. SATO Jin, Dr. TSUCHIYA Toshiyuki, Mr. KITAMURA Noriyoshi, and Dr. KAKIZAWA Hiroaki, based on the collaborative results of the “Participatory Forest Management (PFM) ” sub-theme with Mr. Herman Hidayat, Dr. Percy E. Sajise, Dr. Do Dinh Sam, Mr. Le Quang Trung, Mr. Khampha Chantirath, Mr.Khamvieng Xayabouth, and Dr. Pearmsak Makarabhirom. The original draft was examined at an international workshop in Jakarta in June and in Vientiane in August 2000, and an international seminar 16-18 January 2001 in Tokyo. This is the final report based on the comments made by various stakeholders such as governmental officers, NGOs, researchers, and international organizations at the workshops and seminar.

We placed various activities of forest management into four categories as follows: (1) “tree planting,” or man-made forest management consisting of reforestation and afforestation, (2) “harvesting,” or natural forest management for timber production, (3) “conservation,” including the collection of fuelwood and non-timber forest products (NTFP) and small-scale recreation, and (4) “protection,” or preservation of the forest from any kind of utilization. We can assume that the management of protected areas consists of both “protection” and “conservation.”

ii. Analytical framework

In order to compare the policies, two concepts are applied as an analytical framework or valuation basis: “legal status of land” and “main actors of forest management.”

Legal status of land—Generally, possible legal possessors of land and forest are individuals, organizations, villages, outsiders, and governments such as districts, provinces, and the state. The PFM systems can be adopted regardless of the legal status of the land. Provisionally, we recognize land with differing legal status to be “individual land,” “organizational land,” “village land” (owned by both formal villages and indigenous people’s communities), “outsiders’ land,” and “national land” (owned by the local and national government).

Main actors of forest management—In order to evaluate the character of participation, it is useful to consider who are the main actors—those who have management responsibility and take initiative. In these terms, the main actors are classified as follows: (1) individuals or peasants living in the village and their households (their forest management can be called “peasant forestry” or “farm forestry”); (2) functional groups such as forest users’ groups, cooperatives, schools, temples, women ’ s unions and elder’s groups (“functional group forestry”); (3) fundamental groups such as groups of relatives, natural villages, and indigenous cultural communities (“fundamental group forestry”); (4) an executive body of the formal village (“village forestry” that includes centralized community forestry); (5) outsiders and corporations (“private forestry”); and (6) local and national governments (“public forestry”).

Functional group forestry, fundamental group forestry, and village forestry are included in the concept of “community forestry,” since they are based on collective management. Public forestry in cooperation with the local people is called “joint forest management” (JFM) since it is based on co-management.

iii. Characteristics of the PFM systems in targeted countries

The characteristics of the PFM systems in each country are the following. (1) In most of the PFM systems, the land still belongs to the state, and the right to use the land is granted to the local people. (2) Protected areas are mainly controlled by the government. (3) Harvesting and conservation activities are mainly managed collectively. (4) Most of the collective management by the local people is not implemented by fundamental groups but by functional groups, except for the management by indigenous cultural communities and indigenous peoples in the Philippines. Also, fundamental groups may manage village forestry activities in Laos. (5) Several programs assume that collective management can be suitable for planting activities consisting of reforestation and afforestation, even though individual management seems to be suitable for planting activities, rather than collective management, in terms of economic incentives.

Diversification of the actors seems to be advantageous for forest management, in order to achieve ecological sustainability and social justice. The government of each country should devise and improve tenure arrangements, where various types of actors can be involved in all the processes of forest management such as planning, decision-making, implementation, and profiting.

iv. Lessons learned from public participation in developed countries

Study of the experiences with policies in the United States, New Zealand, and Japan provided the following useful lessons. (1) PFM is better than an exclusive and centralized management system if the goal is success in sustainable forest management, because this approach reflects local conditions with less cost than other approaches. (2) Public participation in forest management is important for avoiding disputes and reaching agreement among various

stakeholders. (3) Complex planning processes make it difficult for people to understand the processes and prevents effective and timely participation in the processes themselves. (4) Mutual communication is essential, and serious discussion should be encouraged among stakeholders and specialists in order to make better decisions and plans. (5) Informal participation supplements the formal participation process, helps to promote mutual understanding, and guarantees the people substantial opportunities to share in decision-making. (6) Centralized planning systems are inconsistent with participation from the local people. (7) Participation should be secured in the whole process of forest management, including appraisal, planning, implementation, monitoring, evaluation, and revising of plans.

(b) National Strategies for PFM

i. Methodology to elaborate policy recommendations

Policy recommendations were elaborated, based on our own research results and comments given at international workshops at Jakarta and Vientiane, in accordance with the following framework and principles.

ii. Framework to elaborate policy recommendations

The IGES team working on the sub-team of Participatory Forest Management conducted a comprehensive process that led to the preparation of policy recommendations. First of all, in the target countries (Indonesia, Thailand, the Philippines, Vietnam, and Laos) we identified the "external constraints" on local participation in forest management by means of clarifying the gaps and contradictions between national land/forest policies and "customary land rights and forest/land management by the local people." Second, we identified the "internal constraints" present in the local communities, in terms of economic, social, and cultural aspects. Third, "possible main actors" were clarified by means of evaluating the local realities and national forest policies. In addition, we identified the lessons learned from public participation in developed countries.

We elaborated these draft policy recommendations by considering how to overcome the internal and external constraints, and suggested that the main actors carry them out.

iii. Standpoints to elaborate the policy recommendations

Our policy recommendations follow the eleven principles listed below:

Standpoint 1: People's participation is very important for success in sustainable forest management with lower transaction costs, as well to avoid social conflicts over forest utilization, which themselves increase management costs.

Supplementary explanation: Most stakeholders recognize that the forest should be managed in such a way that economic benefits, social justice, and ecological sustainability can be achieved without excluding other stakeholders. The main problem to overcome is the distribution of economic benefits among stakeholders such as local people, cooperatives, timber companies, and governments.

Standpoint 2: In the tropics, the concept of "local participation" is more useful today than the concept of "public participation."

Supplementary explanation: People's participation consists of "public participation," which refers to the participation of the larger society, including city dwellers and citizens. "Local participation" refers to the participation a smaller subset of society or the local community.

Standpoint 3: Our concern is to show what is an ideal forest management *system* in terms of local participation, rather than to indicate concrete *procedures*.

Supplementary explanation: Our recommendations should be examined from the perspective of feasibility under

present social and political conditions.

Standpoint 4: The “participatory top-down approach” should not be included in the strategy for PFM.

Supplementary explanation: The term “participation” in this context does not reveal the actual level of participation because the meaning of the term varies widely. The spectrum of participation could be put into three categories (Inoue, 2000) as follows:

- the “participatory top-down approach” is a blueprint approach where residents are considered to be wage laborers, volunteers, fund providers, etc.
- the “professionally-guided participatory approach” is a relatively flexible blueprint approach where drafts of the plan, made by professional planners, are examined by residents and citizens and modified through discussion, workshops, etc. The local people and the government share authority.
- the “endogenous bottom up approach” is a learning process approach where professionals act as facilitators. The local people have decision-making rights.

Formal institutional arrangements can be part of the endogenous bottom up approach when customary law is developed in the local community, because the residents can manage their resources well by themselves. On the other hand, application of the professional-guided participatory approach seems to be reasonable when the customary law has not been developed or has already lapsed. In any case the participatory top down approach should be avoided. This approach is usually considered by local people to be nominal and fake.

Standpoint 5: Both collective forest management and individual-based forest management are considered to be included in PFM for the time being.

Supplementary explanation: It is true that collective forest management by fundamental groups, functional groups, and the executive body of the formal village is the core of PFM. It can safely be said that individual- or household-based forest management on national land, called “peasant forestry” here, is also recognized as a form of PFM. On the other hand, peasant forestry on private land may not be regarded as a form of PFM but as “private forestry.” In order to promote PFM, however, it seems better that we provisionally consider it to be a form of PFM.

Standpoint 6: The policy recommendations should be based on a recognition—which can be in common between developed and developing countries—of the importance and validity of participation.

Supplementary explanation: Key issues in community involvement (Salim and Ullsten, 1999) include the following: defining the community; willingness and ability to have dialogue; presenting scientific information in a form which can be easily understood; reconciling local, national and perhaps global interests; and political will to respect and enforce the conclusions. We believe that these ideas are appropriate for civil societies worldwide, including developing countries.

Standpoint 7: Diversity - of legal status of land and main actors - is an important aspect of PFM in order for the local people to make good choices in accordance with local conditions.

Supplementary explanation We believe it is beneficial to develop strategies for facilitating PFM on national land, village land, organizational land, and individual land; and for facilitating PFM by individuals, functional groups, fundamental groups, and executive bodies of the villages. It is desirable that the policies of each country cover every combination of the land ownership with the main actors.

Standpoint 8: The planting of trees is likely to be practiced mainly by individuals; conservation of the forests should be done collectively by village communities and fundamental groups; and the government is likely to bear the responsibility for the protection, sometimes entrusting the local people with the daily activities.

Supplementary explanation: Forest management consists of four activities: “tree planting,” “harvesting,”

"conservation" and "protection." In terms of economic incentives, individuals are most likely to prefer tree planting. In terms of opportunity costs for patrolling the forest, collective management may have the advantage in conservation.

Standpoint 9: The policy recommendations should be elaborated by making use of the results of our own research. It is not necessary for them to be so comprehensive as to cover all the aspects of PFM.

Supplementary explanation: Even though some of our strategies have already been pointed out, a local-specific strategy based on field studies must be in itself valuable.

Standpoint 10: Our policy recommendations should be elaborated from the viewpoint of the local people.

Supplementary explanation: Priorities for forest conservation differ when viewed from local, national, and global perspectives. All are legitimate and should be taken into account (WRI, IUCN and UNEP, 1992). We recognize that all stakeholders have a vested interest in conserving their forest, and that the process of facilitating PFM inevitably affects all vested interests to some extent.

Standpoint 11: The policy recommendations are to consist of several sets of objectives and necessary actions aimed at local people, the governments, NGOs, and international organizations.

Supplementary explanation: One function of the policy recommendations is linking the local reality to the national policy. In each action proposed here, the intended actors for each action are specified clearly.

(c) Current state and constraints of PFM in four countries

i. Indonesia

(i) Policy evaluation using the two concepts

Land ownership in Indonesia is categorized as national land or private land. According to the new Forestry Law promulgated in September 1999, as well as the Basic Forestry Law (1967), all the forests on national land, except forests on private land registered in accordance with the Basic Agrarian Law (1960), belong to the state, even though the forests have been collectively managed by local communities.

In Indonesia, the term "social forestry" is controversial, because the local people cannot be the main actors of forest management, or cannot be involved in forest management in some of the governmental social forestry programs such as "Tumpang Sari" and the "Forest Village Social Development (PMDH) Program." On the other hand, NGOs have been supporting "community-based forest management systems (SHK)," which are local forest management systems developed by the local people. The new Forestry Law approves the following participatory forest management.

Forest Management for Special Purpose: The government designates the forest for special purposes such as research and development, education and training, and religion and culture in state forests. Management of the forests can be entrusted to indigenous communities, educational organization, research institutes, and religious organizations. The programs can be regarded as "functional group forestry" or "fundamental group forestry" on "national land."

Permission of Community Forest Utilization (Ijin Pemanfaatan Hutan Kemasyarakatan): This program is practiced by local people, specifically cooperatives and other people's organizations. The concession, lasting thirty-five years, is granted in the national forests which are free of other rights such as natural forestry concessions (HPHA), man-made forestry concessions (HTHT), mixed plantation concessions (HPH Tanaman Campuran prescribed in August 1999), and tree felling rights (IPK) to develop oil palm plantations and transmigration areas. This forest management can be regarded as "functional group forestry" on "national land."

Permission of Forest Products Collection (Ijin Pemungutan Hasil Hutan): Individuals, corporations, and legal persons

may collect wood and non-wood forest products for one year in production forests; the collection of non-wood forest products is banned in protection forests. This management can be considered to be “peasant forestry” or “functional group forestry” on “national land.”

Management of Customary Forest (Hutan Adat): In the new Forestry Law, the important points in terms of local participation are in Article 1, where the law defines the “Customary Forest” (Hutan Adat) inside the state forests, and Article 67, which prescribes “the community which practices customary law (Masyarakat Hukum Adat).” Under this law, the community shall have the rights to: 1) collect forest products for daily needs; 2) undertake forest management in accordance with prevailing customary laws; and 3) be empowered to improve its welfare. Accordingly, we conclude that the management of Customary Forests can be regarded as “fundamental group forestry” on “national land.”

Individual Forest (Hutan Rakyat) Program: This program is controlled by the provincial government and practiced on private land. The people hold a certification of land ownership outside the national forest. The main activity of the Individual Forest Program is re-greening or afforestation, and Paraserianthes falcataria is planted by many people. The program can be regarded as “peasant forestry” on “individual land.”

(ii) Recent policy reforms

A great deal of effort has been put into the reformation of forest policy. However, the following steps and clarifications would help move PFM further toward full implementation:

- Although it is beneficial that the government issued a decree of Director General of Reforestation and Land Rehabilitation (041/Kpts/V/1998) where socio-economic and cultural conditions are included as data to be collected in making field technical plans for land rehabilitation and soil conservation, such a policy should be applied to the whole process of demarcating forests.
- The Local Government Law (UU No.22, 1999) promulgated in May 1999 and the governmental regulation for the authority of the government and province (PP No.25, 2000) in May 2000, asserted autonomy of villages based on the customary law and devolution of sovereignty to the province (Propinsi) and district (Kotamadya/ Kabupaten) government. It should be noted that decentralization is not equivalent to the promotion of local participation.
- The rights of the people to Customary Forests (Hutan Adat) can be recognized under the condition that the customary laws do not contradict the national law and local regulations. It is clear that the possibility of local participation depends on how customary laws will be evaluated, and who will do the evaluation.
- In a draft of the “National Development Program (PROPENAS) 2001-2005” published on 20 March 2000, the “Program to enhance the role of the Public in the management of natural resources and environment” is recommended as one of the important policy strategies. But local participation should be ensured in the process of implementation.

(iii) Customary land rights and forest/land management by local people

Field studies in East Kalimantan, characterized by rich forests, in Southeast Maluku, characterized by the strict customary law, and in Central Java, characterized by high population density and prevailing private land, identified the following facts:

- Forest/land utilization is controlled by customary law called “hukum adat” throughout Kalimantan, even though the rules vary from community to community.
- In East Kalimantan, the Dayaks or indigenous people recognize private property rights and communal property rights.
- In East Kalimantan, under the traditional land category in Dayak villages, reserved forest (tana mawa), utilization forest (tana belahan), sacred land (tana to’), graveyard (tana patai) and other primary forests (tana’ kaso) are considered communal property, while swiddens (tana luma’) and agroforests (tana lepu’un) planted by individuals are considered private property.

- In East Kalimantan, the customary rights of the village to primary forest and natural resources are rather loose; customary rights of individuals and households are rather tight.
- In Southeast Maluku, customary land (petuanan) is divided into three categories: private land, lineage (marga) land, and village land.
- In Southeast Maluku, people are prohibited from entering certain lands during certain periods, to protect resources such as sago palm, under the local resource management system (sasi, yutut).
- In Central Java, the land is categorized into homesteads planted with various perennial and annual crops (pekarangan), mixed gardens mainly planted with perennial crops (kebun), dry fields mainly planted with annual crops (tegalan), paddy fields (sawah), sloping dry fields (pereng), swiddens (ladang), and state lands (alas) including grasslands (padang rumput) and forests (hutan)
- In Central Java, the land consists of private land, national land, and village land (tanah bengkok) that are mostly used as paddy fields. Communal forests do not exist.
- In Central Java, the phenomenon of "gardenization" can be seen. This is an evolution of land use in a way which expands tree gardens planted with various perennial crops.
- People have been using the forests for swidden agriculture, sources of diet (hunting, fishing, collecting nuts, fruits, and wild vegetables), and materials for construction and handicrafts (iron wood, rattan, Shorea spp., etc.).
- The poor people are more dependent on a variety of forest products and hence are more vulnerable to sudden changes in the provision of such products and their price.

(iv) External constraints on local participation

- The rights of the local people to utilize and manage the forests have been neglected by the government.
- Logging or timber companies, including the national Forestry Corporation (Perum Perhutani), usually apply top-down decision-making, and local needs are often neglected.
- The government classifies forestland into five functional categories, but the actual state of land utilization and socio-economic aspects are totally neglected in this classification, because the main criteria for the classification used are the degree of slope, fragility to soil erosion, and strength of rainfall.
- In Central Java the recent economic crisis triggered many young migrant workers to return to their home village because they had lost their jobs in Jakarta. Since then, some have started illegal logging and illegal cultivation.
- Especially in Java, organized illegal logging can be a great obstacle to sustainable forest management by local people as well as by the national forest corporation.

(v) Internal constraints on local participation

- In a village where a customary forest management system does not exist in East Kalimantan, loose norms cannot function as a sound basis for enforcement, and as a protective wall against external pressures.
- In such villages, weak collaboration makes it difficult to develop any form of village-wide forestry program, and high competition for forest products, particularly timber, has caused the people to be more careless about sustaining the forests.
- In two villages of East Kalimantan, village leadership based on the law of village government does not generate local participation and tends to disintegrate the communities by serving the governmental interests.
- In Southeast Maluku, the younger generation tends to cut trees in the customary forests to get money for commodities and frivolities.
- In Central Java, illegal logging can be seen in the national forests (managed by the national forestry corporation, Perum Perhutani) probably conducted by local people who own little or no farmland and cannot work outside the village. They may log to obtain firewood to be used to produce brown sugar from coconut palms.

(vi) Main actors for participatory forest management

- In a village in East Kalimantan where a customary forest management system does not exist, "households" play an important role in swidden agriculture, rubber gardening, rattan forestry, and candle nut forestry.

"Individuals" play a role in logging, hunting, fishing, and gathering. Collective management of the forests seems to be difficult because customary rules concerning village property are too loose and the village leadership does not support the collective work.

- In a village where a customary forest management system exists in East Kalimantan, the "village community" can manage the communal forests as it has in the past.
- In Southeast Maluku, the "village community," headed by elder men, plays an important role for customary forest management; "individuals" and "households" play important roles for agriculture and hunting.
- In Central Java, the "household" plays an important role for forest management in the Tumpang Sari plantation area on national land as well as in the tree gardens on private land.

i. The Philippines

(i) Policy evaluation using the two concepts

Land categories in the Philippines by land ownership are: "private land" owned by individuals and organizations; "public land (domain)" owned by the state; "ancestral land" of which Indigenous Cultural Communities (ICCs) or Indigenous Peoples (IPs) have the rights of de facto land ownership but the right of disposal is limited to the members of ICCs and IPs; and "ancestral domain" of which ICCs or IPs have the rights of utilization but do not have the right of disposal. Public land consists of "non-forest lands" (alienable or disposable lands or A&D land), and "forest lands" which include "permanent forests (forest reserves)" and "public forest (unclassified public land)."

Forest policy in the Philippines consists of three components: Community-Based Forest Management (CBFM) for the purpose of conservation and production; industrial forestry for the purpose of timber production; and National Integrated Protected Areas Systems (NIPAS) for the purpose of conservation. Participatory forest management can be seen in the CBFM, the Socialized Industrial Forest Management Program in industrial forestry, and management of the protected areas in NIPAS.

Community-Based Forest Management (CBFM): Under the CBFM, two types of forest management are employed. Under the first type, ICCs or IPs acquire a Certificate of Ancestral Domain Claim (CADC) or Certificate of Ancestral Land Claim (CALC) and make the Ancestral Domain Management Plan (ADMP) in order to gain control and manage the forest. ICCs/IPs have the right to claim ownership of land, to develop land and natural resources, to stay in the territory, and to govern and empower themselves. This type is basically regarded as "fundamental group forestry" on ancestral land and domain or "village land."

Under the second type of forest management, the residents living in the upland and coastal lands in a public domain that includes permanent forest make up a People's Organization (PO), conclude a CBFM Agreement (CBFMA), or twenty-five year production-sharing agreement, with the government, and produce a Comprehensive Resource Management Framework (CRMF). Individuals can manage the forest within the area of CBFMA after acquiring the Individual Property Right (IPR) from the People's Organization or Certificates of Stewardship Contract (CSC) from the Department of Environment and Natural Resources (DENR). This management type is regarded as "functional group forestry" and sometimes "peasant forestry" on public domain or "national land."

Socialized Industrial Forest Management Program: This program allows individuals or families and associations or cooperatives to participate in forest plantation development in forest areas ranging in size from one to ten hectares, and from ten to five hundred ha by providing them security of tenure through the issuance of a Socialized Industrial Forest Management Agreement (SIFMA). The program is regarded as "peasant forestry" and "functional group forestry" on forest lands or "national land" for the purpose of wood production.

Management of the protected areas in NIPAS: According to the National Integrated Protected Areas System Act (Act No.7586, 1992), the DENR shall have no power to evict Indigenous Cultural Communities (ICC) from their present occupancy, nor resettle them to another area, without their consent. ICCs can manage their surroundings within the

restrictions as a result of an agreement between the local people and the government. The management of protected areas by ICCs can be regarded as “fundamental group forestry”on ancestral land and domain or “village land.”

In the same way, the “tenured migrant” who has actually and continuously occupied an area for five years prior to its designation as part of a protected area is eligible to become a steward of a portion of the protected area. Their activities, however, are governed by the guidelines prescribed in the management plan, as well as the prohibitions set out in the Act. In this case, the management by tenured migrants can be regarded as “public forestry,” in cooperation with local people, on the public domain or “national land.”

(ii) Customary land rights and forest/land management by local people

Field studies were conducted in the municipality of Banaue, recognized as an ancestral domain, with relatively well-preserved forests in the Province of Ifugao, and in the northern Sierra Madre mountain region in the Province of Isabela, where commercial logging activities have operated until recently. The studies identified the following facts:

- In Banaue, the landscape consists of eight major land forms: terraces for rice production, drained fields for vegetable production, swidden areas for sweet potato production, low grasslands, high grasslands, community forests, private forests, and housing lots.
- In Banaue, the lower elevation of the community forests (*inahalan*) is allocated for swidden agriculture, and the higher elevation is preserved as watershed forests where swidden agriculture is customarily prohibited.
- In Banaue, there have not been any regulations in resource extraction in the community forest. As a result, most of the trees suitable for woodcarving and house construction have already been taken and many woodcarvers have to find trees outside Banaue.
- In Banaue, private forests (*pinugo*, *muyong*) or man-made forests scattered in the rice terraces secure water for irrigation and protect against landslides and erosion.
- In Banaue, people make use of forest products such as firewood, construction material, and woodcarving materials for their livelihood.
- In Sierra Madre, villagers usually categorize the land as “lowland” or “alienable or disposable land” where land titles were officially recognized, and “upland” or public timber land where land titles were not recognized by the government.
- In Sierra Madre, however, customary laws for utilizing forest resources were not evident to researchers, because communities (*barangays*) here were formed recently—after the Second World War.

(iii) External constraints on local participation

- A major external constraint on PFM appears to be an attitude that imposes government-designed forest projects on upland communities, where local people are requested to follow them, to act as tools of the government.
- In most cases, these projects do not consider local conditions such as land use, people’s dependence on forest resources for their livelihood and the local value systems.
- Requiring local people to participate in the government-designed reforestation projects brings about adverse effects, including resistance and conflicts between the government and local people, as well as among the local people themselves.
- NGOs may be expected to play substantial roles, not as instruments of the government, but as catalysts to empower the local people in formulating solutions on their own to existing problems.
- Most small-scale loggers think the forests are still controlled by the government, because logging in all CBFM sites was suspended in 1988.

(iv) Internal constraints on local participation

- In Banaue, few internal constraints of social and cultural aspects towards forest management can be identified.
- In Banaue, even though the people have a desire to improve the stand quality in private forests by planting trees, particularly trees for woodcarving, they do not intend to do so if they have to pay for seedlings.
- In Banaue, planting seedlings for woodcarving materials in the community forests is hardly expected, because

it may be difficult to find witnesses of the plantation activities in the community forest, since they are necessary in order to claim one's ownership of planted trees.

- In Sierra Madre, there are some conflicts between the cooperative program (an executive body of CBFM) and illegal loggers, and between the cooperatives and new migrants. Even the members of the cooperative expect benefits from the cooperative rather than self-sacrifice, because the cooperative is a kind of functional group.
- In Sierra Madre, the policies of the cooperative sometimes fluctuate, because the requests of the government and the villagers contradict each other.

(v) Main actors for participatory forest management

- In Banaue, the blood kinship group is regarded as the main actor of PFM in private forests, because close blood kinship groups actively manage co-owned private forests.
- In Banaue, the village community can be an actor to regulate loosely the use of community forests.
- In Sierra Madre, the cooperative seems to be the best actor for natural forest management.
- In Sierra Madre, individuals seem to be the best actors for reforestation activities.

iii. Lao P.D.R.

(i) Policy evaluation using the two concepts

Based on the Land Law enacted in 1997, Laotian land is classified into eight categories, such as land for agriculture, forest, and construction. Forest land is classified, based on the Forestry Law enacted in 1996, into the following five categories: (1) protection forest to conserve watersheds, to guard against soil erosion and to protect dense forests, etc.; (2) conservation forest, to conserve wild animals and plants; (3) production forest, to produce wood and non-wood forest products (NWFP); (4) regeneration forest, or the young fallow to regenerate forests; and (5) degraded forest land, or barren land. Among these types, it is only on degraded forestland that organizations or individuals can be granted usage rights. On the other hand, protection, conservation, and production forest may be under the direct management of either local or national governments.

On land for which the right of utilization has been granted, organizations and individuals have the right to possess, use, profit, transfer and inherit the land. However, in a legal sense, the right to utilize land in Laos differs from land ownership in capitalist countries in that buying and selling are prohibited. Nevertheless, the system works as if land is actually purchased and sold, and the duration of the rights is not definitively stated. As a result, in Lao P.D.R., the right to utilize land is in fact nearly equivalent to land ownership in capitalist countries. This is an important factor when considering the legal status of land, and has been the basis of participatory forest management systems that have been implemented since the early 1990s.

Joint Forest Management (JFM): Under this program, the local government manages forest in cooperation with the local people. However, villagers are sometimes not involved in the decision-making and planning process. They play the role of subcontractors for implementation of the plans made by the government, or take part in simply as laborers. We conclude that JFM can be regarded as "public forestry," mainly for the purpose of timber production on "governmental land" covered by rich natural forests.

Village forestry: Village forestry is defined as forest utilization and management by a village community or organized villagers inside a territory of the village. All forestry activities, including conservation, protection, planting, and harvesting are permitted. Village forestry is not connected with land allocated to individuals and other juridical entities. We conclude that village forestry can be regarded as "functional group forestry," "fundamental group forestry," and "village forestry" for all forest-related activities on "village land."

NGO-supported Community Forestry: The Community Forest Development Project (CFDP) in Khammouane province is supported by the Japan International Volunteer Center (JVC), a Japanese NGO, and is active in eighteen villages. Five of the eighteen villages prepared simple forest management plans after the village boundaries were delineated and

land-uses were mapped through a participatory approach. The villagers also developed rules to control forest management. We conclude that these projects can be regarded as “village forestry” on “village land” mainly for the purpose of conservation.

Tree planting by villagers: People living in the villages can plant trees such as teak and fast-growing species on allocated land. This activity is considered to be “peasant forestry” on “individual land” mainly for the purpose of commercial timber production.

Buffer zone management of National Biodiversity Conservation Areas (NBCAs): It is thought that NBCAs are included in conservation forest defined in the Forestry Law. NBCAs are mainly divided into two categories: total protection zones (TPZ), or core zones, and controlled use zones (CUZ), or buffer zones. Local people are permitted to use the forest products in the buffer zones within certain limits. This utilization can be considered as “peasant forestry” on “governmental land.”

(ii) Customary land rights and forest/land management by local people

Field studies were carried out in Vang Vieng district and Sang Thong district, both in Vientiane province, and in Phalanxai district of Phou Xang Hae NBCA, Savanakhet province. These field studies identified the following facts.

- In Vang Vieng, the Lao Theung (specifically the Khamu), who live at the middle altitudes of the mountains, classify their land into several categories: dense forest (patae bree kut), old fallow (patae reng kae), young fallow (patae reng kha nhom), former swidden (patae re tu), present swidden (patae re), protection forest (patae bree haksa), cemetery (patae raman), utilization forest (pataebree kui xay), and house lot (patae koun), etc. The Lao Loum, who settle in the lowlands, categorize their land in a similar way.
- In Vang Vieng, customary private rights are permitted on young fallow, old fallow, firmer swidden, present swidden, and house lots, etc. in the village territory.
- In Vang Vieng, protection forest, cemetery, and utilization forest are managed collectively by the village community in accordance with governmental instructions.
- In Sang Thong, customary rights to use forest resources for individuals and families have been granted within village boundaries.
- In Sang Thong, the villagers have conserved a few patches of communal forests for protection of the water catchment, prevention of soil erosion and maintenance of cemeteries. Villagers stated that these communal forests are very useful to them, although no clear rules and regulations related to them exist.
- In both Vang Vieng and Sang Thong, forest products collected by the local people, consisting of wood and non-wood forest products, comprise their main cash income sources.
- In Phalanxai, part of a village territory overlapped with a NBCA, but land allocation programs were able to provide paddy fields to most of the people whose swidden agriculture was prohibited in the area of the NBCA.
- Especially for the poor, forest products are important in daily life.

(iii) External constraints on local participation

- Decrees or implementation ordinances to enforce the Forestry Law have not yet been issued. According to the government officer who participated in the workshop, the government issued Decree No. 198 in 1998. But we have not examined the decree.
- When converting from an existing land classification allowing use by the local people to official land under the Land Law and Forestry Law, the important points are whether the present land/forest utilization and ownership are officially approved or not.
- Application of the official land use classification to the land, such as swidden land, customary conservation forestland and dense forestland, is said to be difficult.
- The swidden land at present includes land under cultivation, fallow, and grassland. Officially, however, land presently regarded as degraded is classified as degraded forest land, land regarded as young bush fallow is classified as regeneration forest, and land regarded as old forest fallow is classified as village-managed

protection forest, conservation forest or production forest.

- The problem concerning the land to be classified as degraded forestland is the high possibility of afforestation of degraded forestland, although the local people are harvesting NWFP even from grassland.
- The problem concerning the land to be classified into regeneration forest (village-managed) is the probability that the fact that the local people have customary tenure rights for all swidden areas, including the fallow land, will be neglected.
- The classification of swidden land into degraded and regenerated forest land is based on the presupposition that swidden agriculture should be abandoned, even though most of the local people make their livelihood by swidden agriculture.
- The problem arising from the classification of felling-prohibited forestland and dense forestland into protection, conservation, and production forest is the probability that customary forest utilization will not be permitted, even though the local people harvest forest products from the forestland covered with vegetation.
- Criteria for demarcating core zones and buffer zones in NBCAs are not clearly defined. The local people do not understand the restrictions on forest utilization in core and buffer zones.
- In reality, production forests, agricultural land, and even house lots are included in the buffer zone of NBCAs. This fact is inconsistent with the purpose of NBCAs to conserve biodiversity.

(iv) Internal constraints on local participation

- A lack of flat land suitable for sedentary agriculture, and the land's low productivity force the local people to practice swidden agriculture on the degraded uplands.
- The non-agricultural economic sectors are not sufficiently developed to provide adequate income sources, and the market system is also not well developed. As a result, local people are forced to depend on the forest products.
- The local people do not understand their rights and duties in managing forests in the village territories. As a result they sometimes do not enrich or regenerate the forest areas after land or forest allocation has occurred.
- Actual forest utilization by the local people does not change even after establishing NBCAs.
- Customary forest utilization cannot automatically be regarded as sustainable.

(v) Main actors for participatory forest management

- Village communities or organized villagers are regarded as the main actors for Village Forestry programs, and can be considered as co-agents for Joint Forest Management.
- Village forest volunteers serve as executive bodies for patrolling the village forest for conservation and protection.
- Individuals or households are regarded as main actors for tree planting on degraded land.

i. Vietnam

(i) Policy evaluation using the two concepts

Based on the 1993 Land Law and a 1994 decree, the government started to allocate land and forests to individuals, households, villages, organizations such as forest management committees, seed stations, enterprises, the Peoples Army, and schools. As a result, local people can now hold the right to use allocated land and forest. Alternatively, they may obtain a "red book certificate" for twenty years in annual crop production, and for fifty years in perennial crop production.

The Vietnamese forests are classified into "production forests," for producing wood and non-wood forest products, "protection forests," for watershed protection, and "special-use forests," for biodiversity conservation and tourism, in accordance with the Law of Forest Resource Protection and Development enacted in 1991. PFM systems are embedded in tree planting and conservation programs in each forest category.

Protection Agreement in Ecological Rehabilitation Zone of Special-use Forests: The Special-use Forest Management

Board (SFMB), having a red book certificate, concludes protection agreements with households, which acquire "green book certificates" prohibiting them from intercropping but permitting them to plant trees. As for tree planting (Plantation Program), each household earns one to two million Vietnamese dong per hectare, and has an obligation to protect the planted trees for three years on two to four hectares of forest land, on average. As for natural regeneration (Protection Program), each household annually earns forty to fifty thousand Vietnamese dong per hectare for the protection of ten to twenty hectares of forest, on average. The systems are regarded mainly as "public forestry" on "national land" for protecting the forests.

Management of Buffer Zone around Special-use Forests: In order to decrease the pressure on special-use forests, the government provides assistance to holders of red book certificates, such as the extension of agricultural and forestry technology and assistance with the planting of fruit trees. These systems are regarded mainly as "peasant forestry" on "national land" for protecting the forests.

Protection Agreement in Critical Protection Forests: People having a red book certificate can conclude protection agreements similar to those in ecological rehabilitation zones with the Management Board for Protection Forests (MBPF), and can acquire a green book certificate. They are permitted to introduce agroforestry systems and to collect non-wood forest products and fuelwood. The systems are regarded as "public forestry" on "national land" for protecting the forests.

Tree planting on allocated land in Production Forests: Individuals, households, and organizations can receive land allocations and obtain red book certificates in production forests. The land area allocated to them varies from place to place. For example, each household receives three to five hectares of land on average in a mountainous region, while households receive more than fifty hectares in other regions. These activities are regarded mainly as "peasant forestry" or "functional group forestry" on "national land" for the purpose of producing timber.

(ii) Customary land rights and forest/land management by local people

Field studies were carried out in "Son Duong" district, Tuyen Quang province, parts of which are designated as buffer zones in Tam Dao National Park, and "Mai Son" district in Son La province. These field studies identified the following facts:

- It seems that community forests or the forests managed in a traditional manner based on communal relationships do not exist, because local people, especially the Kinh, may have forgotten customary forest management systems.
- In Son Duong, the most important forest product is firewood. Less important ones include birds, bats, squirrels, and medical plants.
- In Son Duong, the poor collect firewood every day in the mountains; the middle class collect it three or four times a week; the rich have already stopped collecting it, and substitute branches from the plantation forest or fruit trees and residues of rice or maize for firewood.
- In Son Duong, most of the people do not recognize that they live in the Buffer Zone of the National Park and they do not know the location of the park borders. Nevertheless, they understand the concept of a national park where some practices are prohibited such as tree felling, swidden agriculture, and hunting.
- In Mai Son, timber is taken from natural forests for building houses, and making beds, cupboards, tables, chairs, etc. Firewood is taken from natural and planted forests or gardens for cooking and heating. Bamboo is taken from natural and planted forests as building materials. Other forest products include bird and animal, rattan, bamboo shoots, and medical herbs.
- In Mai Son, dependence on the forest products varies by ethnic group. The Kinh depend little on natural forest products; the Muong and Thai usually collect timber and firewood; the Mong, Kho Mu, and Xinh Mun depend almost entirely on forest products.

(iii) External constraints on local participation

- Bureaucracy and centralized top-down decision-making at the local level can be obstacles to participation of the local people.
- Although forests should be classified into three categories, there are no authentic criteria and indicators for forest classification.
- The budget and human resources to implement land/forest allocation programs are limited. As a result, the local authorities cannot conduct this work effectively.
- Local authorities have not paid attention to the fact that for local people, swidden agriculture is essential during transitional periods.
- Arrangements and agreements on jurisdiction between the local authorities and national government seem to be insufficient.
- There is no effective system or program to promote PFM by fundamental groups and villages, even though villages can undertake contracts to protect natural forest in national parks.
- The national park system conflicts fundamentally with the livelihoods of local people.

(iv) Internal constraints on local participation

- People believe that the collection of forest products is legal, even though it is illegal in ecological rehabilitation zones of special-use forests and critical protection forests.
- The custom of exchanging ideas and experiences is not mature, which makes it difficult for people to acquire new ways of thinking and doing, such as legitimate PFM.
- The linkages among households have been very loose, and group of households have not worked together to accomplish common goals.

(v) Main actors for participatory forest management

- Forest management boards are actors in protected forest and protected area management.
- Traditional village communities (*thon*) are actors in natural forest and plantation management.
- Collective associations such as women's unions, youth unions, peasant unions, and ex-servicemen's unions have the potential to play roles in PFM, because these associations are reliable.
- Households, churches and temples, and other organizations, including the army, can be regarded as actors to manage small-scale natural secondary forests and plantations.
- Forestry companies and joint ventures can be regarded as actors for industrial plantations.
- State forest enterprises can be regarded as main actors in natural forest and plantation management.

(d) Recommendations- Policy recommendations for Participatory Forest Management-

Based on the findings and analysis of the PM sub-team, the policy recommendations for Participatory Forest Management in the four countries are as follows:

i. Indonesia

Indonesian forest policy is now being reformed drastically, in accordance with the movement towards democratization and decentralization of power. Once this is achieved, proposals made by various stakeholders, including our recommendations, can be put into the policy discussion platform.

(i) Objective 1: Ensure the participation of local people in general

Action 1-1: The government and NGOs should work together to establish the mechanism of a "green safety net" to secure the minimum level of forest conservation. This action will provide a foundation for PFM in terms of forest conservation, because a "green safety net" consists of minimum regulation by the national government to ensure sustainable forest management and forest conservation.

Action 1-2: All the parties should recognize and have a high regard for the perspective of conservation perceived by the local people. This action will ensure full participation of local people. The compulsion of outsiders' perspectives on conservation will spoil the self-confidence of the people.

Action 1-3: The provincial government should take the actual state of land use and socio-economic conditions into consideration for forestland classification. This action will enable the government to identify the forest areas that should be managed by the local people. At present it seems to be difficult for the government to ascertain the actual state of land use under certain socio-economic contexts. In the process of land classification, the government should actively involve the local people and NGOs by way of participatory rural appraisals (PRA), etc. Although the importance of this action has been pointed out for more than a decade, ongoing efforts are still necessary.

Action 1-4: The national government should define clearly, in the form of a decree or law, the involvement of local people and NGOs in forest management. This action will ensure the process of fair evaluation of local customary laws and existing local forest management systems. The importance of this action has been pointed out before, and the need to take action continues to exist.

Action 1-5: The national government should revise the Forest Village Social Development (PMDH) program as a basis for facilitating local participation. This action will improve the livelihood of the local people, which will encourage them to participate in forest management.

Action 1-6: The national government should establish rules to obligate local governments to ensure the local participation and to report publicly on the condition of PFM in cooperation with local people and NGOs. This action will prevent the local government from top-down decision-making and centralized forest management.

Action 1-7: NGOs should cooperate with the provincial governments to encourage them to use a bottom-up decision-making process in the management of national parks and the demarcation of forest areas. NGOs should cooperate with the district (Kabupaten) government to be involved in the activities of reforestation and re-greening, the management of protection forests and private forests, the control of hunting and collecting of non-wood forest products, and extension activities. This action will accelerate the people's participation in accordance with the devolution of authority for forest management to each level of local government.

Action 1-8: All the parties should recognize the importance of power sharing, as well as that of benefit sharing, between the local people and other stakeholders. This action will encourage the local people to have a stronger will to manage their forests.

Action 1-9: The government should elaborate the guidelines for defining the rights of local people (who are the local people?) to manage their forests, in cooperation with NGOs and the local people themselves. This action will avoid disputes among the people.

(ii) Objective 2: Operationalize the management of the Customary Forest (Hutan Adat) as prescribed in the new Forestry Law

Action 2-1: The government should evaluate the customary law fairly in terms of collective forest management in cooperation with various stakeholders such as local communities, local governments, NGOs, and academics. This action will guarantee the fair judgment of the customary law. Under the new Forestry Law, the rights of the local community can be recognized under the condition that the customary laws do not contradict the national laws and local regulations.

Action 2-2: NGOs and the governments should persuade the local people to modify their customary forest utilization where the need exists to develop appropriate technology for sustainable forest management, and facilitate these modifications. This action will help the local people avoid being excluded from official approval of customary forests.

Action 2-3: The government should issue a decree showing the process for designating Customary Forests, even in conservation areas. This action will facilitate customary forest management in and around the conservation areas and will secure sustainable forest management. These results can be expected because most of the customary forest must be covered with relatively rich forests that have a high possibility of being designated as conservation areas.

Action 2-4: As a next step, the government should consider the release of the Customary Forest (Hutan Adat) from state-owned forest under certain regulations. This action will solve the latent conflicts and accelerate the decentralization and devolution of forest management. It will provide the basis for the complete integration of a community-based forest management system (SHK) with the management of Customary Forests (Hutan Adat).

(iii) Objective 3: Facilitate collective forest management

Action 3-1: The government should give priority to the permit for community forestry (IPHKM) over other permits for natural forest management, man-made forest management, mixed plantation management (prescribed in August 1999), and tree-felling for the purpose of developing oil palm plantation and transmigration areas. This action will allow local people to obtain concessions on high-quality forests; otherwise they will be allocated only degraded forests.

Action 3-2: The local people should organize themselves, discuss the rules for forest utilization, and conclude agreements for forest management in cooperation with external agencies such as NGOs and the local government.This action may reform the local leadership and provide villagers with incentives to participate in the process, even in areas where community-based forest management does not yet exist. Although the importance of this action has already been pointed out, the former political regime made implementation impossible. Now is an opportune time to take action.

Action 3-3: The government and state forest corporation (Perum Perhutani) should give the Permission of Community Forestry (IPHKM) in Java. Community Forestry should be open to Java. This action will effectively prevent illegal logging by outsiders because of the self-protection by the local people.

(iv) Objective 4: Facilitate individual- or household-based forest management

Action 4-1: The government and state forest corporations should share the profits from planted trees between the local people who participate in the Tumpang Sari (or the Perhutanan Sosial program), and the national forestry corporation (Perum Perhutani) in Java. This action will provide the participants economic incentives to manage the forest until trees (such as teak and pine) are harvested.

Action 4-2: The State Forest Corporation (Perum Perhutani) should plant tree species suitable for use as fuelwood, fodder, etc. by the local people on the sites of an improved Tumpang Sari or Perhutanan Sosial program in Java. This action may reduce illegal logging of fuelwood for making brown sugar from the Aren palm, and encourage the people to take part in the management of fuelwood plantations on national land.

Action 4-3: The government and NGOs should help local people patrol the forest areas they manage through financial and material support. This action will prevent illegal logging by outsiders.

Action 4-4: The government should introduce an individual- or household-based sharecropping forestry program in the degraded production forest areas on national land in outer Indonesia. This action will motivate the local people to plant tree species, even on national land, similar to the individual forest (Hutan Rakyat) program on private land in Java. Individuals or households could sub-contract with the executive bodies responsible for community forest management under the Community Forestry (Hutan Kemasyarakatan).

Action 4-5: The State Forest Corporation (Perum Perhutani) should devolve the rights of forest management on some national land to local people. This action will promote the process of “gardenization” practiced by the local people.

Action 4-6: NGOs should help local people obtain land ownership of tree plantations. This action will provide the basis

for introducing Individual Forest Programs (Hutan Rakyat) on private land.

ii. The Philippines

The objectives mentioned here seems to be satisfied in a sense, through the preparation of a policy framework for participatory forest management. The most important remaining question is how to ensure implementation in the Philippines in order to achieve sustainable forest management.

(i) Objective 1: Ensure the participation of local people in general

Action 1-1: The government should pass a law enacting Executive Order 263, which declares CBFM as the national strategy. This action will ensure the use of CBFM as a national strategy, because the EO, as an administrative order, is not a sufficient legal basis.

Action 1-2: The government should ensure a financial and human resource basis for CBFM, and build its organizational capacity. This action will facilitate participatory forest management, based on the existing framework of participation.

Action 1-3: The government and NGOs should work together to establish the mechanism of a "green safety net" to secure minimum levels of forest conservation. This action will provide the foundation for PFM in terms of forest conservation, because a "green safety net" is a minimum regulation by the national government to secure sustainable forest management and forest conservation.

Action 1-4: Government officers should change their attitudes towards local people, and regard them not as tools of the government, but as equal partners. This action will fill the gap between the intentions of the government and the impressions of the local people. Although the importance of this action has been pointed out for more than a decade, ongoing efforts are still necessary.

Action 1-5: The project managers and planners should carefully consider local conditions before introducing forestry projects, such as customary utilization of the land and forests, people's dependence on forest resources for their livelihood and the local value systems. This action will enable the project managers and planners to set up appropriate project plans. At present, it seems to be difficult for planners to ascertain the actual state of local conditions. In this process, the project planners should actively involve the local people and NGOs through the use of participatory rural appraisals (PRA), etc. Although the importance of this action has been pointed out for more than a decade, ongoing efforts are still necessary.

Action 1-6: The government should define clearly, in the form of a decree or law, the involvement of local people and NGOs. This action will ensure a fair evaluation process for determining local conditions and existing local forest management systems.

(ii) Objective 2: Facilitate collective forest management

Action 2-1: The local people should recognize that the function of the village community is different from that of the cooperatives as Peoples Organizations (PO) for CBFM. This action will make them recognize the potential role of cooperatives. The village community is a fundamental group dealing with every aspect of their livelihood. Cooperatives could serve as a functional group for the purpose of managing their forests.

Action 2-2: The government should consider the transfer of authority for forest management to the village community, as well as cooperatives, as a possibility. This action will allow the local community to act more flexibly.

Action 2-3: The cooperatives should commit themselves to representing the interests of the local people, rather than acting as agents to implement governmental programs. This action will create trust among local people toward the

executive bodies of the cooperatives.

Action 2-4: The local people should leave the rights of forest management to the executive bodies of their cooperatives. This action will guarantee that the executive bodies manage the forests as effectively as private timber companies.

Action 2-5: The government should permit selective logging by the cooperatives, under certain conditions. This action will sustain the livelihoods of the local people who work for the cooperatives, and also sustain timber resources because of reduced illegal logging. An evaluation system, to check the sustainability by the third party, seems to be necessary.

Action 2-6: The government should give greater priority to Certificates of Ancestral Domain Title (CADT) or Certificates of Ancestral Land Title (CALT) as provided for by Republic Act No. 8371, compared to mining concessions provided by the Mining Act of 1995 or Republic Act No. 7942. This action will facilitate the collective management of natural forests.

Action 2-7: NGOs should help local people and the government take the actions proposed here.

(iii) Objective 3: Facilitate individual-based forest management

Action 3-1: The CBFM cooperatives should recommend that local people acquire Individual Property Rights (IPR) from the cooperatives for managing the forests within the area of CBFMA. This action will promote individual management of plantation forestry, but the cooperative will still play a leadership role in terms of promoting sustainable agriculture and forestry techniques, collection of market information, etc.

Action 3-2: The government should conclude a Socialized Industrial Forest Management Agreement (SIFMA). This action will promote tree plantations in private forests, fostering individual practices of socialized industrial forest management.

Action 3-3: NGOs should help the cooperative and the government to take the actions proposed here.

iii. Lao P.D.R.

The government of Laos is now preparing the relevant decrees and regulations for forest management. Our recommendation will support the effort of the government for the purpose of promoting local participation and sustainable forest management.

(i) Objective 1: Secure the general participation of local people.

Action 1-1: The government and NGOs should work together to establish the mechanism of a “green safety net” to secure the minimum level of forest conservation. This action will provide the foundation for PFM in terms of forest conservation. A “green safety net” is the minimum level of regulation by the national government necessary to ensure sustainable forest management and forest conservation.

Action 1-2: The government should issue laws or decrees on forest classification, forest use planning, and land/forest allocation to integrate existing decrees. This action will clarify the criteria for demarcation, the process of land/forest classification, and the responsibilities of national, provincial, and district authorities.

Action 1-3: The local government should remind themselves that forest classifications are based on the actual utilization of the land where village territory overlaps with the “conservation forest areas,” “production forests,” and “protection forests” that are controlled by the government. This action will reduce villager dissatisfaction and confusion that often result when new designations are made of the main forest areas controlled by the government.

Action 1-4: The government should revise policies to allow some “regeneration forests” to be allocated to villages or villagers, as is already done with “degraded land.” This action will resolve contradictions between policy and actual

land utilization. The land to be designated as regeneration forest is already being utilized by villagers in the same way as land designated as "degraded land."

Action 1-5: The government should clarify the criteria for demarcation between core zones, buffer zones of the National Biodiversity Conservation Areas (NBCAs), and other village lands. This action will help local authorities to demarcate NBCAs, and to reach agreement with villagers on demarcation.

Action 1-6: The government should either draw official lines of demarcation between the buffer zones of NBCAs and village land, based on the actual land utilization by the local people, or draw tentative lines that will be reexamined in the near future. This action will solve contradictions between existing laws/ordinances and the fact that agricultural land and house lots are already located inside buffer zones.

Action 1-7: The government should not implement PFM projects all at once in the country, but introduce pilot projects, using a step-by-step approach. This action is reasonable under present human resources, budget, and organizational conditions and constraints.

Action 1-8: International organizations and NGOs should support the government in implementing the actions mentioned above. This action will accelerate the reform process.

(ii) Objective 2: Facilitate collective forest management

Action 2-1: The government should legalize natural forest management by villages for the purpose of timber production, even though, in some cases, only local authorities are permitted to sell timber, according to a 1999 prime ministerial decree. This action will encourage village management of existing natural forests. However, the government should examine the management objectives, methods of promoting the ability to manage the forest, the appropriate scale of forest management, and the proper use of revenue.

Action 2-2: The government should ensure local people's participation in the decision-making process, in natural forest management planning for Joint Forest Management (JFM). This action will increase the people's will to participate in JFM.

Action 2-3: Local authorities and NGOs should help village communities decide on regulations, keep watch on forest utilization, and punish offenders who violate the regulations. This action will enable village communities to manage their forests, especially for conservation and protection activities.

(iii) Objective 3: Facilitate individual-based forest management

Action 3-1: The local government should not pressure villages to rush to demarcate between forest and agricultural land in accordance with the national governmental instruction. This action will give local people a grace period for the transition towards the development of alternative land utilization and income sources. At the proper time, the villages can propose tentative or formal demarcations.

Action 3-2: Local authorities and NGOs should assist the people with experiments to develop alternative land use techniques such as rotational agroforestry or array cropping systems involving trees, in the uplands where demarcation lines are nominal and tentative. This action will shorten the transition period from customary land use to officially recognized land use. Clear demarcation can be completed at a later point in time.

Action 3-3: The government should legalize a system to support tree-planting activities consisting of reforestation and afforestation by individuals or households. This action will encourage local people to plant trees on allocated forest land for their own revenue. A profit sharing system (PSS), tested in trials by the Japan International Cooperation Agency (JICA), may be one useful system.

Action 3-4: The government should prepare a system to provide quality seedlings, assign roles to the public and private sectors, and improves access to degraded forest land. This action will encourage the local people to plant trees on allocated forestland.

Action 3-5: The local authorities should establish good partnerships with villagers to promote a better understanding of their rights and duties in the buffer zones of NBCAs, and employ villagers to patrol the NBCAs. This action will prevent the villagers from conducting illegal activities. Although the importance of this action has already been pointed out, continuous efforts are still necessary.

iv. Vietnam

The Vietnamese government is trying to promote the participation of local people in forest management. Our recommendations will support their efforts, and are intended to facilitate further involvement by the local people.

(i) Objective 1: Ensure the general participation of local people in general.

Action 1-1: The government and NGOs should work together to establish the mechanism of a "green safety net" to secure a minimum level of forest conservation. This action will provide the foundation for PFM in terms of forest conservation. A "green safety net" is the minimum level of regulation by the national government necessary to ensure sustainable forest management and forest conservation.

Action 1-2: The government should clarify the authority and responsibilities of local authorities and the national government. This action will encourage collaboration on the implementation of various programs between the local authorities and national government.

Action 1-3: The government should clarify the criteria and indicators for forest classification. This action will enable the local authorities to conduct forest classification properly.

Action 1-4: The government should strengthen extension and training activities, especially at the local level. This action will help local people participate in forest management.

(ii) Objective 2: Facilitate collective forest management

Action 2-1: The government should issue a decree or create a program to promote community forestry that is practiced by village communities, especially in protection forests and special-use forests. This action will provide a legal basis for existing activities by village communities to harvest forest products or protect the forests.

Action 2-2: Village communities (thon) should settle regulations to manage the forests by themselves, in accordance with the national criteria for sustainable forest management, in cooperation with existing women's unions, youth unions, peasant unions, etc. This action will enhance the autonomy of the village in terms of sustainable forest management, in ways that do not contradict to national policy.

Action 2-3: Village communities should recognize customary rights and consult with national park offices on sustainable forest management. This action will legitimize the activities of forest management by local people.

(iii) Objective 3: Facilitate individual-based forest management

Action 3-1: The government should accelerate efforts for land allocation. This action will encourage local people to plant trees on the allocated land.

Action 3-2: The government should indicate the criteria for sustainable land/forest utilization. This action will reduce unsustainable land/forest utilization.

Action 3-3: The government should reinforce agricultural and forestry extension activities. This action will allow the criteria mentioned in Action 3-2 to take root at the household level. Although the importance of this action has already been pointed out, continuous efforts are still necessary.

Action 3-4: The government should encourage local authorities and collective associations such as women's unions and youth unions to take part in activities producing tree seedlings, especially the use of genetically improved planting stock. This action will allow local people to obtain better seedlings more easily.

Action 3-5: The government should allocate larger budgets for tree planting in critical and very critical protection forests. This action will give more incentives to local people to take part in protection activities.

Action 3-6: The government should officially permit local people to collect fuelwood and NTFP in return for concluding protection agreements such as "protection agreements in critical protection forests." This action will provide more incentives to the local people. In this case, the activities by the local people can be regarded as "conservation," something that is preferred by them, rather than "protection."

(Makoto Inoue)

d. Research on legal and administrative supporting measures[8]

(a) Introduction -importance of participation of local people-

Participation of local people into process of sustainable forest management is one of important issues related to sustainable forest management. There are several reasons why participation of local people is important in sustainable forest management.

Concerning environmental aspects, differences in ecosystems among areas leads to the necessity for management systems suiting each ecosystem. In order to develop such management systems, decentralization of management systems will be required. In the decentralized management system, the cooperation of local people is indispensable to ensure the effectiveness of regulations concerning forest conservation. Also, concerning economic aspects, local people have received the direct benefits of the forests. Hence, they have knowledge about the effective utilization of forest resources, which may lead to the greatest economic benefit through use in a sustainable manner. Moreover, this leads to human rights issues, in particular, the fact that local depend on forest resources for their lives. When deforestation or degradation of forests occurs, it is a threat to their lives and culture. This is connected with the social aspects of forest management. Therefore, local people's participation should be respected and ensured.

There is recognition of importance of participation of local people at international society, however, legal and administrative measures at national level are not enough. Further actions are necessary for the purpose of ensuring participation of local people.

In order to clarify necessary actions this report examines the legal and administrative systems for forest conservation and participation at the national and international level, based on research conducted by the IGES FC Project (1998-2001).

On a national level, the examination consists two parts. The first part is an examination of legal and administrative systems for ensuring the participation of local people. There are several ways of ensuring participation of local people. One of ways is to ensure property rights on land and forestlands. The other way is to authorize the right of participation under certain legislation. Several cases indicate that ignorance about customary right to lands and forest lands prevents

[8] The report is drafted by Prof. Isozaki Hiroji, in cooperation with Mr. Komatsu Kiyoshi and Ms.Yamauchi Makiko, based on the collaborative results of the "Legal and Administrative supporting measures (LA)" sub-theme with Prof. Iwama Toru, Prof. Wang Xi, Ms.Loudes. E. Tolentino, Dr Nakano Ari, Dr. Pearmsak Makarabhirom, Mr.Mas Ash Santosa, and Dr. S. Sothi Rachagan. The original draft was examined at an international workshop in Jakarta in June and in Vientiane in August 2000, and an international seminar held in 16-18 January 2001 in Tokyo. This is the final report, based on the comments made by various stakeholders such as governmental officers, NGOs,

local people from participating in processes of forest management. Hence, this study pays attention to recognition to customary right to land and forest lands. The second part is examination of dispute settlement mechanisms that are necessary for ensuring rights of local people. In order to clarify necessary dispute settlement mechanisms case studies at national level and international experiences on dispute settlement mechanisms are analyzed.

On an international level, examination is based on result of brain storming forum on "IFF and A Convention on Forest" and work of extraction of legal principles on sustainable forest management from existing international treaties related to forest management. The "Costa Rica-Canada Initiative" aimed to build consensus to start a negotiation for adopting a new international legal instrument related to sustainable forest management, a so-called a "Convention on Forests" at a global level in 1999. Unfortunately, consensus for starting the negotiation of a new international legal instrument could not be reached. In order to deal with this situation, the FC Project conducted three brainstorming forums to clarify legal principles to be included in a "Convention on Forests" based on analysis of "Proposals for the IPF" and discussions in "Inter-governmental Forums on Forests." As a result of these forums, we found that participation of local people is one of important principles on sustainable forest management and necessary measures for realizing sustainable forest management at the international level. In addition, there are several international treaties related to forest management. They also include important principles on sustainable forest management. Based on analysis of these treaties, we can identify legal principles for sustainable forest management which could be included in a future "Convention on Forest" as legal principles.

The results of our research indicate current problems related to forest management and necessary measures for realizing sustainable forest management at the international level. Based on the research, some recommendations were formulated.

(b) Examination of legal and administrative systems at the national level

i. Legitimacy based on property rights or the right to use lands and forests

(i) Rights to forest and land use

In order to ensure the legitimacy of participation, several measures can be used. One measure is to ensure participation by authorizing property rights or forest use rights. Some countries enacted legislation which authorized tenure rights for local communities and people. Other countries authorize individual rights to use forests and land.

The constitution of Papua New Guinea (PNG) stipulates that land and forests are owned by their customary owners. Custom is defined as "the custom and usages of indigenous inhabitants of the country existing in relation to which the matter arises, regardless of whether or not the custom or usage has existed from time immemorial." Hence, almost all land and forests are owned by local people, or kinship groups, based on custom. Exploitation of land and use of forests requires their consent. The Forestry Act, which came into force in 1992, is legislation directly related to forest management. Under the Forestry Act, the state reserves the exclusive right to reach Forest Management Agreements with landowners. If landowners approve the conditions, Forest Management Agreements are concluded. The National Forestry Board selects a forest industry, and recommends that the Minister grant a timber permit. When consensus is not achieved, landowners cannot exploitation the land. Accordingly, the government cannot grant the timber permit without the approval of the local people and community.

On the other hand, land including forests and other natural resources, is owned by either the state or the collectives, according to the Constitution of the Peoples Republic of China. People are authorized to use land by the Constitution. A similar system exists in Vietnam and Lao P.D.R. In the case of China, the Forestry Law encourages people to participate in afforestation activities by rewarding contributions. Contributions can take several forms, such as voluntary tree planting, eco-agriculture, cooperation between nature reserves and local communities in managing nature reserves, wasteland contracts and individual afforestation contributions.

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researchers, and international organizations at the workshops and seminar.

Wasteland contracts rent bare land in mountainous areas to farmers, and to unemployed people in urban areas. Based on the contract, tenants are given the right to manage and use the lands protected by the Forestry Law. Those who are given the right to use bare land can plant trees in the area and generate benefits from tree plantations. Contracts have fifty-year terms, and the benefits of activities based on the contract are tax-free during the term. Throughout these measures, the Forestry Law encourages participation in afforestation activities, and ensures the people's benefit.

(ii) Problems

Even though people have tenure rights, or the right to use land and forests, the lack of a system providing opportunities for participation is an obstacle to ensuring participation. In case of PNG, the National Forest Plan, which provides a detailed policy on forest management at the national and provincial level, does not require public participation in the planning process. In addition, the lack of awareness and understanding of the necessity for sustainable forest management prohibits the realization of sustainable forest management. In the case of China, although awareness of the necessity for forest conservation is increasing, insufficient recognition of the necessity for forest conservation can be found at the local level. Moreover, insufficient consultations between government and landholders are a clear problem. Although landholders' consent is indispensable for Forest Management Agreements, meaningful consultations between PNG government and landholders are rare. The landholders are consulted without advice from experts, in particular, lawyers. Inconsistencies among national forest policies and other relevant policies such as environmental policies exist within the government, and the political will to commit to sustainable development is often lacking. Inappropriate advice that ignores the real situation also prevents sustainable forest management.

ii. Legitimacy of rights authorized in environmental law or other relevant law

(i) Legislation related to the participation of local people in conserving the environment and protecting indigenous peoples

In the Philippines, customary rights can be recognized in other ways. The old Civil Code stipulated "where no statute is exactly applicable to the point in controversy, the custom of the place shall be applied, and in the absence thereof, the general principles of the law." This stipulation was changed when the Civil Code was revised (A new Civil Code took effect in 1950). Despite this change, judges still may recognize custom as a supplementary source of the law, and may apply customs of the place, or in the absence of custom, the general principles of the law. Moreover, the Philippines have enacted legislation related to participation by local people since 1992. In the National Integrated Area System Act, local people can participate in the management processes of protected areas. Ancestral lands within protected areas, and customary rights to these lands can be recognized. In 1997, "The Indigenous Peoples Rights Act of 1997" was approved by Congress. The purpose of this legislation is to ensure the rights of indigenous peoples. The legislation does not generally ensure participation, but opens the door for the participation of local people in each issue, such as management of protected areas, protecting the rights of indigenous people.

Environmental legislation provides opportunities to participate greater than those existing as a result of forestry laws. For example, laws related to forestry in Indonesia did not take into account the voices of local people or communities before the economic crisis. (After the economic crisis, forestry laws were revised, and the new legislation included articles on participation by local people.) However, legislation environmental conservation allows participation in the decision-making process. In particular, the environmental impact assessment system (EIA) provides local people and communities the opportunity to participate. Even though there are many problems with the current EIA system, it is a good case where opportunities to participate were provided, and the interests of the local community were protected. Hence, EIA became an indispensable tool to ensure participation. In this report, five countries' EIA systems (Indonesia, Laos P.D.R, Thailand, The Philippine, Vietnam) are analyzed. Based on these analyses, several problems are identified and several recommendations are formulated.

(ii) Environmental Impact Assessments and participation

Environmental Impact Assessments (EIA) are recognized as important tools to ensure the participation of local people in environmental management systems. In the Asia-Pacific region, many governments have recognized the importance of EIA and local participation, and as a result, many EIA systems in this region include provisions concerning participation by local people. Fortunately, in some cases, EIA provide local people opportunities to express their opinions concerning forest management to their governments. However, at the same time, many problems with existing EIA systems have been pointed out.

(iii) Influence of international society

Since the 1970s, several countries (e.g. the Philippines, Thailand) established framework laws for the conservation of the environment which included some provisions regarding EIA systems, but in some cases no prescriptions were given on how to implement them. One of reasons these countries established the laws was to take action on the declaration of the United Nations Conference on the Human Environment. Most of these countries made these provisions to demonstrate to other countries—especially developed countries—and multilateral aid organizations their commitment to address environmental issues.

It has been pointed out that this legislation achieved its purpose simply by its existence. With a few exceptions, these provisions were not implemented for some time; however, the situation has been changing since UNCED (the Earth Summit held in Rio de Janeiro) in 1992. Most of the countries (e.g. Malaysia, the Philippines, Thailand) concerned began to implement these provisions after UNCED by prescribing EIA procedures. Similar progress was also made in some economies in transition. In Vietnam, training and case studies began during the 1980s and in 1993, the government established a law on environmental protection and made a decree prescribing procedures for implementation. Considering these cases, one could conclude that international society affected the attitude toward the environment in these countries. In addition, it has been pointed out that multilateral and bilateral aid organizations have been playing important roles in these countries. As these organizations fund or implement a large number of large-scale projects, their funding activities sometimes have a considerable impact on the environment. Each organization has prepared its own procedures or guidelines on EIA in order to avoid negative impacts on the environment, and criticism from environmental non-governmental organizations (NGOs). In the case of Lao P.D.R., these procedures and guidelines have affected the country's EIA system. Laos P.D.R does not yet have an official EIA system in place, but in fact EIAs are implemented on an informal basis. Because the procedures and guidelines of the organizations noted above provide good examples of EIA, the government of Laos refers to them in EIA activities. As this case shows, these organizations can provide useful models and references for developing countries.

(iv) Importance of regional cooperation

Although the Association of South East Asian Nations (ASEAN) Agreement on the Conservation of Nature and Natural Resources was adopted in 1985, it is not yet being enforced due to the reluctance of member countries to establish legal obligations to conserve the environment, and the low priority given to environmental conservation in each nation's policies. However, like the example above, international society can affect these countries' attitudes, and it appears that the Rio Summit also influenced ASEAN countries. In 1994, ASEAN adopted its Strategic Plan of Action on the Environment. This Strategic Plan requires ASEAN countries to take actions such as, "1.1 Continue to support the documentation of regional EIA experiences, leading towards the harmonization of procedures;" "1.2 Initiate activities that will make use of natural resource and environmental accounting studies and approaches;" and "1.3 Establish procedures that would initiate the integration of environmental concerns in the various ASEAN programs and activities," in order to "Support the development of a regional framework for integrating environment and development concerns in the decision-making process." There are many similar national Strategic Plans in ASEAN countries. Although the Strategic Plan is not a legal instrument, countries are free to make improvements in their national policies. It is possible that even non-legal instruments can be effective in ASEAN countries, and be good tools to improve their EIA systems.

(v) Current situation in each country

Various types of EIA systems exist in the Asia-Pacific region, reflecting the diversity of each country's situation. Almost all countries in this study (Indonesia, Malaysia, the Philippines, Thailand, and Vietnam) had provisions regarding EIA in their legislation. In case of Lao P.D.R, although no legislation yet exists concerning EIA per se, EIA is included as a procedure for approval of foreign investments. In any case, these countries are presently carrying out EIA in some form. As mentioned above, various types of EIA exist, but there are some common characteristics. It has been seen that many countries tend to extend the scope of EIAs. In Vietnam, almost all projects must conduct an EIA in order to obtain approval from governments, other than a few exceptions where serious environmental impacts cannot be expected. In Thailand and Indonesia, the scope of EIAs has been growing. Almost all countries require project proponents to execute EIAs before starting projects, and the results of EIA are referred to when the government makes decisions on whether or not to approve a project.

(vi) Ensuring local people's participation

Most developed countries recognize the importance of local people's participation in decision-making and have tried to ensure their participation. This recognition also affects international society, and evidence exists that this is true in Southeast Asian countries, where many provisions in legislation refer to local people's participation (Indonesia, Malaysia and the Philippines). In Vietnam, where national law does not yet require EIAs, attempts are made to include public participation at the city level (e.g. Ho Chi Minh City, and Hanoi).

A Malaysian case demonstrates effective participation by local people. In the case of the Penang Hill development project, many local people made comments for an Environmental Assessment, and an NGO involved in a review process claimed that there were many flaws in the assessment process. In the end, the review committee did not accept the environmental assessment, and the development project was canceled. While this case is a good example of participation by local people, many problems with the process were also pointed out.

(vii) Case of Environmental Impact Assessment

In a case on environmental impact assessment in Malaysia, local people initiated a lawsuit seeking the extension of an exemption from EIAs issued by the government. The Environmental Quality Act enacted in 1974 as federal legislation, included a provision on EIA. However, provisions on EIA in the Act were not precisely prescribed. The Environmental Quality Order was made for the purpose of defining EIA processes in 1987. In the case of projects listed in the Order, project proponents should implement EIAs before starting a project, and in the EIA process, project proponents are required to provide opportunities for local people to participate.

The Malaysian federal government declared that projects proposed in Sarawak state were exempt from the duty to implement EIAs. Since 1993, the Bakun Dam project had been proposed in Sarawak state, and a serious impact on the environment was anticipated. At the time the proponent announced the project, EIA procedures were just being prepared. According to a declaration, the project proponent did not need to implement an EIA, but three residents claimed that they had the right to obtain a copy of the EIA concerning the Bakun Dam project, and they also had the right to representation. The first trial ruled that "The EQA was enacted to be applicable to the entire nation. Subsidiary legislation was permitted to give full effect to the EQA. Under the guidelines prescribed by the project proponent … it cannot be made without some form of public participation … For this is a right vested with the plaintiffs…" However, this judgment was reversed by an appeal court.

(viii) Problems

Cases exist where the public was allowed to participate in EIAs in the Asia-Pacific region. Whether positive or negative, they indicate that these countries are gaining experience in the implementation of EIAs. Looking beyond these cases, one can identify current problems and challenges which southeast Asian countries face with EIAs: Coordination between central and local governments and among the relevant ministries in central government have been a problem.

Overlapping jurisdiction may allow some parties to escape from the duty to implement any EIAs. Experienced experts are necessary for implementing EIAs, however a shortage of experts exists - not only scientific experts but also facilitators of local participation. In addition there are shortages in local government staff. Implementation of EIAs is sometimes too costly. In some cases, this has become an obstacle to the effective implementation of EIAs. Many people are not aware of the existence of EIA regulations, and even if they are aware, they may not know how EIAs can be utilized. This shortcoming can be a hindrance to public participation. Some cases indicate problems of appropriateness and fairness in EIA processes controlled by the government. One problem is that the decision to start an EIA process depends on the governmental administration. Another problem is the absence of judicial procedures to check decisions made by the administration.

(c) Conflict Resolution in Sustainable Forest Management: With special reference to Indonesia, Thailand and Malaysia

As mentioned above, there are several ways to ensure the participation of local people. Even so, setting up mechanisms for remedying injustices is necessary for the protection of their rights, when their rights are violated. Courts are one important tool to remedy injustice. Recently, other tools have appeared, such as ADR systems. According to case studies of three countries (Indonesia, Malaysia and Thailand), we can identify several causes of conflict. In addition, there are several international treaties which have articles related to dispute settlement mechanisms. They indicate necessary mechanism for dispute settlement. Based on these findings, we can identify several actions for establishing dispute settlement mechanisms.

i. Analysis from country studies in Indonesia, Thailand and Malaysia

Based on analysis on cases in three countries, many causes of conflicts were identified. The causes of conflicts that occur in forest management can be summarized as follows:

- Various problems in the field of forest management have occurred, as a result of the implementation of forest concession rights which are granted by the government.
- For example, the location of forest concession rights often overlaps with traditional and residential areas of the local community. Exploitation based on forest concessions have threatened the life of the local community by cutting trees and making plantations, without any compensation payments.
- Inappropriate allotment of forest concession rights is the major cause of conflict.
- Delays in the government's responses to community objections have caused conflicts to accumulate, become more complicated, and more difficult to settle. Many of the worst cases have been completely neglected.
- Decision-making processes are not transparent. The decision-making process for allocating forest concessions and distributing natural resources barely involves local communities and people who live in the place in question. Therefore, the interests of local community are not recognized and are almost always neglected. This weakens the position and influence of local people and communities, both politically and economically, compared to the company or entity holding the concession right. Neglect of the interests of local communities is based on the lack of legal recognition of the rights of local communities.
- The involvement of parties which have no relevancy to the case has been another problem. Military intervention is one example.
- Another important factor in the settlement process is the lack of neutral and independent mediators which are not indebted to the parties in the community, as well as the concession holders and the government. Neutral third parties having the skill and capacity to settle conflicts can greatly influence the settlement process.
- Lack of proper dispute settlement mechanism at local level cannot prevent from arising conflicts.
- Lack of awareness of the community's needs and from deference of ideas and methods on natural resource management is cause of conflict.

ii. Suggestions from international treaties related to rights of community in forest management

There are several international treaties related to forest management. Some international treaties have articles related to

dispute settlement mechanism and require countries to ensure the rights of local and indigenous people.

The International Labor Organization's Convention No. 169 Concerning Indigenous and Tribal Peoples provides that: The rights of ownership and possession of the peoples concerned with the lands which they traditionally occupy shall be recognized. Government shall take steps as necessary to identify the lands which the people concerned occupy, and guarantee effective protection of the rights of ownership and possession. Adequate procedures shall be established within the national legal system to resolve land claims by the peoples concerned.

Moreover, there are many international environmental instruments which require countries to ensure the right of local people. Principle 22 of the Rio Declaration affirms the vital role of the communities in environmental management and development, but it provides no guidance on how to ensure effective participation. Article 8 (j) of the Convention on Biological Diversity is known to require parties to ensure traditional management systems related to use of biological diversity. Even though this article is stipulated "subject to its national legislation"- it means that the contracting parties are not required to enact new legislation to ensure the right of local people-, this provides a framework for international legal protection for certain types of local community forestry management systems. Chapter 32 of Agenda 21 calls upon national governments to give effective land tenure to farmers, which are identified as "all rural people who derive their livelihood from activities such as farming, fishing and forest harvesting." It also notes that the absence of legislation on land rights has been an obstacle in taking action against land degradation in many farming communities in developing countries. The Desertification Convention recognizes the rights and interests of community-based resource users, as well as the participation of these groups, as essential for sustainable resource management. Article 10 stipulates that "effective participation at the local, national, and regional levels" in policy planning and implementation should be provided for.

In order to ensure the rights of local people, the European Council adopted a new convention in 1998, the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention). This convention requires contracting parties to take measures for ensure public participation to decision-making process related to environment. Needless to say, the public participation includes the participation of local people. Thus, the convention requires ensuring access to information related to environment. The idea of ensuring access to information derives from an understanding that to have meaningful participation's people require adequate information on matters of concern. Legal or administrative measures are required to ensure the public participation and access to information. In particular, the convention recognizes the importance of access to justice in order to ensure the access to information. Hence, the convention requires establishing mechanism to ensure access to justice. The mechanism includes not only formal but also informal mechanisms.

Several important elements can be identified in these international instruments, as follows:

(i) All instruments recognize the necessity of recognition of actual situation of local people, particularly paying attention for traditional management system and customary rights. In particular, these instruments recognize the importance of tenure rights to local people.
(ii) Public participation including the participation of local people is important for avoiding conflicts.
(iii) Exchanging views in early stages of decision-making process can prevent the conflict. Legal or administrative measures are required in order to ensure right of participation. In addition, ensuring access to information plays an important role in guaranteeing meaningful participation.
(iv) Dispute settlement mechanisms play important role to ensure the rights of local people.

iii. Necessary mechanisms for conflict resolution

In designing conflict resolution mechanisms for sustainable forest management, the four factors below should be considered:

First, the rights of local and traditional communities and people, including tenure over forest land, and rights of access, ownership, control and harvesting, should be recognized, guaranteed and stipulated clearly enough to be invoked at

court or public forums, when problems based on the rights come into question.

Second ,the local community and people should be included in the decision-making process of regulations, legally binding normative instruments as well as plans, projects and policies on forests. The procedure should include reasonable timeframes for the different phases, allow sufficient time for informing the public, and provide for early participation.

Third, access to the information by local people should be guaranteed, especially at the early stage. If her or his request has been ignored, or inadequately answered, that person should have access to review procedures. Once a conflict occurs, the settlement process should be established once invoked by a concerned party. The process should be transparent.

Fourth, in the settlement mechanism, three components should be included. First, an objection mechanism, allowing the public to respond or object to the government. Second, a reliable dispute settlement mechanism or ombudsman, which is truly independent. Third, the option to choose to conduct the settlement through a legal forum or out of court.

(d) Examination of legal and administrative systems at the international level

i. Current situation of international instruments related to forest management

There is no consensus yet on building a new international treaty, such as a "Convention on Forests," in international society. Discussions are still continuing, and results of the discussions will depend on each country's willingness.

Sustainable forest management (SFM) has been recognized as a key concept in documents which resulted from IFF and IPF discussions and other frameworks for forest conservation since the Rio Summit. Accordingly, SFM might be the purpose of the proposed Convention.

Many other legally international binding instruments already exist, and those which are concerned in some way with SFM include the Convention on Biological Diversity (CBD), the Kyoto Protocol of the United Nations Framework Convention on Climate Change (Kyoto Protocol), the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention), the Convention Concerning the Protection of the World Cultural and Natural Heritage (WHC), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the International Tropical Timber Agreement (ITTA). Moreover, there are three international non-legally binding instruments, including the "Principles on Forests," "Proposals of the IPF" and "Proposals of the IFF."

Some countries have expressed concern about duplication between existing instruments and a new Convention on Forests, and also point out the need to implement existing instruments effectively before establishing new ones.

On the other hand, it could be said that there are too many instruments to achieve SFM, and inconsistencies between the existing instruments have been noted. For example, the possibility exists of a conflict emerging between the CBD and the Kyoto Protocol due to differences in their respective purposes. Plantations are important for both these instruments as well as for SFM. However, the CBD aims to conserve biological diversity whereas the Kyoto Protocol values increased carbon sinks. If plantations are expanded in order to increase sinks, problems will arise from the perspective of conserving biological diversity. Since contradictions may become obstacles when plantations are being established, for example, some countries feel that new international instruments, including legally binding ones, are necessary.

ii. Principles in the each existing international treaty related to forest conservation

It is not clear what obligations would be required in a "Convention on Forests." However, there are several important principles included in the existing treaties. These principles can be said to be legal principles on forest conservation which can be included in a future Convention on Forests. The principles can be extracted from six international treaties: CITES, WHC, the Ramsar Convention, ITTA, CBD, and CCD. The Kyoto Protocol can affect forestry policy, but it is

not yet certain what action will be required with respect to carbon sinks. Therefore, the Kyoto Protocol cannot indicate the principles for forest conservation at the present time.

The principles can be also identified in “soft law” instruments related to forest conservation. According to experiences with environmental international law, several principles are defined in non-legally binding instruments at first, and these principles are included in legal instruments. Hence, non-legally binding instruments should be analyzed in order to clarify the principles on forest conservation. Regarding forest conservation, there are three important “soft law” instruments such as, the Principles on Forests (1992), Proposals for Actions of the IPF (1997) and the more recent Proposals for Actions of the IFF. In particular, the Proposals for Actions of the IPF include important principles. In addition, resolutions or decisions of conferences play an important role in implementation in some treaties. In particular, “wise use guidelines” adopted at the 5th Conference of Parties of Ramsar Convention indicate several important principles for sustainable use of living resources. These principles can provide examples for principles to be included in a Convention on Forests because of common characteristics of use of living resources and forest management.

The results are shown in Box 1. These principles can be divided into three parts. The first part shows general principles of forest conservation. These principles can be applied not only to forest issues but also to other issues. Therefore, they can be said to be common principles of international environmental law. The second part shows concrete measures for forest conservation at the international and national levels. These principles indicate concrete and necessary measures in order to achieve sustainable forest management. The other words, these principles show the obligations required of governments.

There are differences in the nature of obligations required by each treaty. The CITES and the WHC, which were adopted earlier than other international treaties, limited their objectives to controlling the trade of endangered species and protecting valuable ecosystems. On the other hand, the international treaties that were adopted after the Rio Summit deal with more comprehensive issues than the earlier two treaties. The earlier two treaties tended to regulate some activities related to forest management. The later two treaties set up policy processes to deal with problems related to forest conservation by entire societies.

According to these principles, governments should regulate land use depending on the character of the ecosystem, and create comprehensive policies, taking into consideration the social, cultural and economic aspects of forests. In order to ensure appropriate decisions, information relevant to forest management is necessary. Hence, inventory, monitoring, research and access to information are required. Needless to say, EIAs are required in the decision-making process. In addition, cooperation from all stakeholders for forest conservation is indispensable for the success of forest management. Hence, coordination among ministries regarding forest conservation is required, and public participation is also required. Moreover, for all stakeholders, capacity building is necessary for the management of forests in a sustainable manner. This will allow all stakeholders to equitably share the fruits of forest management.

Box 1. Principles in existing int'l treaties on forest conservation

General Principles	• Common concerns of humanity • Rights of future generations • Sovereign rights over natural resources under jurisdiction • Precautionary • Prevention • Principles of sustainability • International cooperation • Principles of subsidiarity • Common but differentiated responsibilities
Principles at International Level	• Information exchange • Consultation
Principles at National Level	• Consideration of environmental impact (Monitoring EIA) within jurisdiction on decision-making process open to foreign people • Legislation (New legislation, revision of existing laws) • Institutional arrangement among concerned ministries and authorities (Establishing strategy, policy/ Nomination of focal point) • Regulation of land use in order to avoid negative impact on ecosystem（Protected Area/Zoning/Permission for certain activities • Regulation of international trade on goods or wildlife relevant to forests in order to avoid negative impact to ecosystem (Permission for the export/import only of goods or wildlife which are produced by processes managed under principles of sustainable management) • Rehabilitation/Restoration of destructed/degraded forest • Respect for traditional management system • Sharing information/ Ensuring access to information • Sharing benefit equitably/Ensuring access to resources • Research • Training • Public awareness • Participation of stakeholders

iii. Measures for public participation in international treaties

One of the principles mentioned in Box 1 is participation by stakeholders. The necessity of ensuring participation by legal and administrative measures has been recognized by international society.

According to international treaties, there are several elements to be dealt with in the process of participation. In particular, two major elements of public participation should be considered. First, the composition of participants is an important element. The public includes four categories: the public in general, the public affected or concerned, the local community or people, and indigenous people. In particular, a role for local people and indigenous people is recognized as crucial in nature conservation processes. Some international conventions have tried to clarify guidelines, in order to ensure local people's participation. Specifically, the Ramsar Convention on Wetlands (Ramsar Convention) has studied the participation of local people.

With regard to the composition of participants, criteria of inclusion to each component are not clear. In particular, criteria of inclusion to local community are not clear due to so many stakeholders related to forest management at field. For example, there are many landowners who live far from the forests and communities in question. However, they own vast forest areas and can decide their use by themselves. Laws authorize their rights to the forest. The other hand, there are many people who don't own land but live in the community. Even if they have traditional knowledge and management systems on use of forest, assurance of their rights by law is very difficult. In such a case, who is counted as a member of the community? To answer this, some criteria have already been already pointed out. The criteria can be set out on the basis of spatial proximity, dependence of resources in question, level of concern of resources in question, or a combination of all these factors. In case of management of wetlands, there is an additional criterion. Paragraph 9 of *Guidelines for Establishing and Strengthening Local Communities' and Indigenous People's Participation in the Management of Wetlands* notes that "local" is a relative term; some stakeholders may live at distance from the wetland (such as migratory fisherfolk or pastoralists) and still have traditional claim to its resources. This can also apply to forest management, because many people manage swidden forests and move from place to place. Even though many criteria exist, the difficulty of determination who is a member of the local community still remains due to the complexity of forest management and so many stakeholders related to it.

The second element is the level of participation. There are several areas where local people should be allowed to participate in the process of forest management. Local people should have access to information, participate in decision-making, be involved in implementation and have access to means of redress. In Europe, regional treaties have been adopted in order to support participation by ensuring these elements. Also, with respect to allowing locals to participate in decision-making, it has been recognized that environmental impact assessment systems can play important roles in ensuring participation in international treaties.

Other elements to be addressed are the accountability of local and indigenous communities, demarcation of rights and responsibilities of local and indigenous communities and people, costs and benefits of public participation, and stable funding for public participation.

iv. Character of measures to deal with issues of nature conservation

The principles described in Box 1 all have a common character. These principles would be same under a "Convention on Forests." Almost all the existing instruments require contracting parties to take account of environmental values in their decision-making policies, and implementation and evaluation processes. In order to achieve this, the instruments disseminate measures on environmental values, and the selection of which measures are appropriate for each country depends on each contracting party.

Ecosystems are too diverse to stipulate universal measures for their conservation. Thus, these instruments cannot set out mandatory measures. In addition, such diversity causes difficulty in developing objective indicators in order to evaluate whether situations are managed in a sustainable manner or not, at the present time. In other words, even if there are problems with forests, it is difficult to decide whether or not they cause irreversible negative impacts to the ecosystem.

Therefore, these instruments simply require that contracting parties should take measures in advance to avoid irreversible negative impacts on the environment, according to each party's circumstances. The decision of appropriate measures depends on each party's thoughts, and evaluation of these measures by third parties is quite difficult. On the other hand, there are many problems and criticisms of governments' policies related to the implementation of these treaties. This is one reason why the effectiveness of these international treaties is questioned.

v. Necessity of compliance with existing international instruments

As mentioned above, it is difficult to objectively decide whether forest management is sustainable or not. This leads to passive behavior by contracting parties to achieve objectives of these treaties. Therefore, it is necessary to create

measures to enhance compliance with international treaties on forest conservation. There are several measures that could ensure greater compliance with the treaties (see Box 2: Measures for compliance). These measures are necessary for ensuring implementation of the principles. Referring to the character of the principles, three measures deserve special mention, particularly in the context of realizing sustainable forest management.

Box 2. Measures for compliance

Public awareness:
Effective implementation can be ensured by cooperation between all stakeholders. Public awareness can be a strong motivator for cooperation between stakeholders.

Administrative measures:
Administrative measures give detailed and desirable procedures of the obligations or interpretations of articles, in order to support smooth implementation. For example, the guidelines for implementation of a treaty can provide concrete procedures to ease implementation at the national level.

Coordination:
Coordination requires measures for ensuring the flexibility of treaties, to deal with the various conditions and situations of contracting parties. This measure includes coordinating relevant treaties in order to avoid duplication and conflict. For example, the United Nations Framework Convention on Climate Change and Convention on Biodiversity stipulate adopting protocols in order to deal with changes in scientific knowledge and to supplement the general obligations of these conventions. The CCD has an article requiring contracting parties to adopt regional action programs for the purpose of dealing with the varied conditions of contracting parties. These measures ensure flexibility in overcoming problems. The CBD and the Ramsar Convention exchange memoranda, in order to coordinate the two conventions.

Monitoring and inspection:
These measures mean that implementation is monitored or inspected by other parties or persons nominated by treaties. Reporting from contracting parties on the status of implementation can be included in this category.

Giving of benefits:
This measure involves the establishment of a system to support implementation by contracting parties by providing financial and technical support. Some treaties establish funds to support developing countries. Almost all treaties require developed countries to support developing countries.

Sanctions:
The treaties punish countries violating treaty obligations. There are several stipulations requiring sanctions for violations, but they are often unable to be implemented, because sanctions would create serious political conflicts, and such conflicts are not desirable.

Conflict resolution:
Almost all treaties have provisions or mechanisms for resolving conflicts, in line with the purpose of the treaty. There are several types of conflict resolution measures, such as mutual negotiation, conciliation, arbitration and the International Court of Justice.

Reservations:
Some treaties permit contracting parties to create reservations against some articles or annexes. For example, CITES has an article allowing reservations against annexes. The effect of this article on the treaty can be criticized, but it cannot be denied that reservations help to increase the number of contracting parties, in some cases.

The first measure is *giving benefits*, in particular through financial mechanisms. Almost all developing countries need financial support to fulfill the obligations required by international treaties. This is same with all environmental issues. The second measure is *coordination*. In order to deal with the diversity of ecosystems and cultural, social and economic condition, flexibility is required. Moreover, coordination among international treaties is important, in order to avoid conflict and duplication of investment of financial and human resources. Finally, *administrative measures* are important, for the same reason as the importance of coordination. Appropriate guidelines to implement the obligations required by international treaties are necessary to deal with the diversity of natural, cultural, social and economic conditions. Hence, it will be crucial to develop guidelines for sustainable forest management in accordance with the experiences of each region and country. In developing the guidelines, experiences from each country can provide informative suggestions. In particular, judgments by national courts on the enforcement of international treaties related to forest conservation can

clarify ways of applying these treaties. Therefore, conflict resolution mechanisms at the national level can play important roles in developing the guidelines.

(e) Recommendations

Based on analysis of existing legal systems related to forest management at the national and international level, the FC Project has identified some obstacles to implementing the necessary legal systems. In order to overcome these obstacles, we make several recommendations.

i. Enhancing compliance with existing treaties

There are many existing international legal instruments related to forest conservation, yet there is still no consensus exists for establishing a new international convention on forest conservation. Therefore, it is necessary to consider measures on forest conservation at the international level, while referring to three points:

(i) It is important to enhance compliance mechanisms for existing instruments.

(ii) Coordination among these instruments, and dispute settlement, will be important for existing compliance mechanisms.

(iii) When developing new compliance mechanisms, it is important to keep in mind the differences in the characteristics of instruments that exist for nature conservation compared with instruments concerned with other issues.

ii. Ensuring local people's participation

Pubic participation is indispensable for the sustainable use and management of natural resources. It is clear that it has become one of the legal principles in some international instruments, but the specific contents of the principle depend on the characteristics of the natural resources in question. Our research has revealed several important principles of public participation, as follows:

(i) The participation of local people and indigenous people should be respected and ensured.

(ii) Forest management systems should adopt the Subsidiary Principle, a general principle of governance that means making and implementing decisions at the lowest effective level of government or organization. Not only central governments, but also international treaties and organizations should support local people and indigenous people's participation. The former should act in a subsidiary role, and as a safety net, when local and indigenous people cannot solve problems by themselves.

(iii) Based on learned experience, several actions are necessary to ensure local people's participation:

a) Ensure their economic benefit.
b) The right to consult with the concession company and obtain advice from experts should be secured by law.
c) Disclose information relevant to forest conservation and management systems in order to create public awareness among local people.
d) Central governments should support the local governments, in order to ensure local and indigenous people's participation.
e) Organizations should coordinate and cooperate with each other.
f) Capacity building should be promoted for realizing sustainable forest management.
g) Local people and government officials should be made aware of the necessity of realizing sustainable forest management.
h) Ensure access to remedies when the rights of local people are violated.

iii. Necessity of dispute settlement mechanisms

Concerning dispute settlement, the following components should be considered in designing mechanisms for solving conflicts over forest management:

(i) The rights of local and traditional communities and people, including tenure over forest land, and the rights

of access, ownership, control and harvesting, should be recognized, guaranteed and stipulated clearly enough to be invoked in court or at a public forum, when problems based on these rights come into question.

(ii) Local communities and people should be included in the decision-making process for regulations, legally binding normative instruments, as well as forestry plans, projects and policies. The procedure should include reasonable time frames for the different phases, allow sufficient time for informing the public, and provide for early participation.

(iii) Access to information by local people should be guaranteed, especially at the early stage. If a request for information has been ignored or inadequately answered, the party should have access to a review procedure.

(iv) Once a conflict occurs, the settlement process should be established upon the request of a concerned party. The process should be transparent.

(v) In the settlement mechanism, three components should be included: first, an objection mechanism, allowing the public to respond or object to the government; second, a reliable, independent dispute settlement mechanism or ombudsman; and third, the option to chose or agree with conducting the settlement through a legal forum or out of court.

(Hiroji Isozaki, Kiyoshi Komatsu)

3. Conclusions

3.1. Measures for sustainable forest management and effective participation of local people

As mentioned in the previous sections, the IGES Forest Conservation Project research resulted in many findings and recommendations. Sustainable forest management is a common goal of international society for ensuring a sustainable society. However, the current situation of forest management is far from being sustainable due to a number of obstacles. One of the major obstacles is a gap between the legal and administrative systems related to forest management and the actual situation of forest and land use. In order to fill the gap, appropriate legal and administrative mechanisms adapted to the actual situation of forest and land use are necessary.

The actual patterns of forest and land use differ from place by place because of the diversity of ecosystems, and the different cultural, social and economic situation in each area. Hence, such appropriate legal and administrative systems require flexibility and a decentralized approach. In addition, the systems also require participation by local people, in order to adapt existing laws and systems to the actual local situations of forest and land use, and to ensure the effectiveness of the systems.

The following parts show the necessary legal, administrative and other measures for sustainable forest management, based on the factors set out above. The following measures are based on recommendations mentioned in the previous section. The numbers of recommendations which are based on the measures are attached for each measure. Some measures are already included in the international treaties related to forest management. The articles which require contracting parties to take same measures are also attached for each measure.

Forest Laws and Plans: Laws related to the forest should be harmonized and coordinated to attain the sustainable use and management of forest, and plans or programs for the improved implementation of such laws should be developed and carried out. The following measures are necessary:

(a) Where appropriate, new laws on sustainable forest management should be enacted, or existing laws should be amended. (WHC Article 5, Ramsar Convention Wise Use Guidelines, PM Recommendation Indonesia 1-4, The Philippines 1-1, Laos 1-2, ST Recommendation iii. (i))

i. Laws of different sectors related to sustainable forest management should be harmonized, and an integrated approach should be taken. (ST Recommendation iv. (i), LA Recommendation iii. (ii))
ii. Management or control of forests or lands should be based on their current use. Where appropriate, traditional forest management systems and tenure rights should be authorized by law. (CBD 8 (j), PM Recommendation Indonesia 2-1, ST recommendation iv. (ii), LA Recommendation iii. (i))
iii. Protected areas should be established and managed under a law. (ST Recommendation iii. (viii), iv. (iv))

(b) Forest plans should be developed in order to effectively implement laws related to sustainable forest management. (CBD Article 6, Ramsar Convention Article 3(1), WHC Article 5a, CCD Article 4(2)c, PM Recommendation Indonesia 1-1, The Philippines 1-3, Laos 1-1, Vietnam 1-1)

i. Effective coordination among ministries and authorities relevant to sustainable forest management should be encouraged and promoted. (ST Recommendation iv. (i), LA Recommendation ii. (iii) e))
   (i) An inter-ministerial forum for the sustainable forest management should be established within the central government. (ST Recommendation iv. (i), LA Recommendation ii. (iii) e))
   (ii) Such coordination mechanisms should also be introduced between the national government and the local governments, and the activities of the local governments should be supported by the central government. (ST Recommendation iv. (v), LA Recommendation ii. (iii) d))
ii. A national minimum of sustainable forest management, what is called “a green safety net” should be developed. (CBD Article 6, Ramsar Convention Article 3(1), WHC Article 5a, CCD Article 4(2)c, PM Recommendation Indonesia 1-1, The Philippine 1-3, Laos 1-1, Vietnam 1-1)
iii. The Criteria and Indicators for sustainable forest management should be developed. (PM Recommendation Vietnam 3-2)

iv. The criteria for demarcation of forestlands should be clarified and published. (PM Recommendation Indonesia 1-3, Laos 1-3, 1-4, 1-5, 1-6, 3-1, Vietnam 1-3)
v. Forestland zoning should be, where appropriate, based on the current situation of land use and social/economic situation of the forestland. (PM Recommendation Indonesia 1-3, 2-1, Laos 1-3, 1-4, 1-5, 1-6, 3-1, Vietnam 1-3, ST Recommendation iv. (iv))
vi. A traditional forest management system and land use by local people and their traditional rights should be ensured as much as possible. (ST Recommendation i. (ii))
vii. The forest plan should be implemented in a flexible way.
(i) A step by step approach should be adopted when a new plan is introduced. (PM recommendation Laos 1-7)
(ii) A forest plan should be reviewed periodically. (ST Recommendation iii. (i))
viii. Sufficient financial basis and human resources for the forest plan should be prepared and provided. (WHC Article 5, PM Recommendation the Philippine 1-2, Vietnam 3-5)

(c) Neighboring countries should be consulted in advance of forest related activities for concerted management of boundary forests. A bilateral or sub-regional agreement on sustainable forest management should be developed. (Ramsar Convention Article 5, WHC Article 5 (3), CBD Article 3, 14(c), (d), ST Recommendation iii. (ix))

Supporting Measures: Laws and plans related to the forest management cannot be implemented effectively without relevant supporting measures for promotion of public awareness, improvement of prior assessment procedures, dissemination of information and so on. The necessary measures are as follows:

(a) Educational programs should be organized in order to promote public awareness of the necessity and importance of forest management. (LA Recommendation ii. (iii) g))

(b) In order to avoid negative environmental impacts caused by plans and activities related to forest management, including international aid, plans and projects of governments and projects of private companies, environmental impact assessments should be carried out. Also, a monitoring system for forest management should be created by international organizations, governments and NGOs. (ST Recommendation i. (iii), (iv), v. (ii))

i. In the EIA and monitoring procedures, cultural and social aspects should be assessed and monitored. (ST Recommendation i. (iii))
ii. Activities related to forest management should be assessed and monitored in the long-term perspective. (ST Recommendation v. (viii))
iii. The participation of all stakeholders should be ensured in the process of EIA and the monitoring system. (ST Recommendation i. (iii))

(c) In order to ensure the meaningful participation of people, basic information should be widely disseminated. (ST Recommendation v. (iv))

i. The information related to forest management should be disseminated. In addition, the right of access to information should be assured by law. (ST Recommendation iii. (ii), LA Recommendation ii. (iii) c))
ii. Information related to forest management, including “good practices” and “bad experiences,” should be exchanged among all stakeholders in order to share useful experiences of success and failures of forest management. (ST Recommendation v. (v))

(d) Trade in forest products should be controlled under the principle of forest sustainability and mitigation of the degradation of natural forests. The three principles ‘reuse, reduce and recycle’ should be the base for promoting the sustainable export and production of agriculture and forestry. (TT Recommendation, ST Recommendation ii. (i))

i. Methods of evaluating the value of forests should be developed by way of constructing “forest accounts.” (TT Recommendation, ST Recommendation i. (i))
ii. A certification system to support sustainable forest management should be established in order to ensure reliability. The legal and administrative system to monitor the certification system and punish forgery should be developed. (TT Recommendation, ST Recommendation ii. (ii))
(i) Compatible evaluating criteria and indicators among certifying institutions should be developed. (TT Recommendation)
(ii) National criteria and indicators for the forest certification should be developed.(TT Recommendation)
(iii) An Asian Forest Certification Institute should be established with an initiative by local people and NGOs, in order to adapt to the current situation of the Asia-Pacific region. (TT Recommendation)

Participation of Local People: For the effective implementation of laws and plans, the active, free and meaningful participation of local people is indispensable.

(a) The participation of local people in processes of sustainable forest management should be assured by law. (CBD Article 8(j), CCD Article 5d,Article 10f, Ramsar Convention Wise Use Guidelines, WHC Guidelines, PM Recommendation Indonesia 1-2, 1-4, 1-8, The Philippines 1-6, Laos 2-1, CCD Article 10 (2)f, PM Recommendation Indonesia 1-4, ST Recommendation iii. (ii))

(b) Appropriate administrative measures should be taken by the governments in order to ensure the effective participation of local people in the decision-making process, in management processes of protected areas, in the planning and implementation processes of international aid programs, and in the grant process for forest concession. (WHC Guidelines, ST Recommendation v. (ii), iii. (iii), iv. (ii), PM Recommendation Indonesia 1-2, PM Recommendation Indonesia 1-7, Lao 3-5, LA Recommendation iii. (ii))

i. Administrative programs related to the participation of local people should be developed, coordinated and revised periodically. (PM Recommendation Indonesia 1-5)
ii. Establishment and implementation of the legal and administrative system on ensuring the participation of local people in the forest management in developing countries should be supported. (ST Recommendation v. (i), (iii), (iv))
iii. The participation of local people should be secured by the national law, and the national government should direct, instruct and encourage local governments to take every necessary measure. Necessary supporting measures, including financial, technical and human resources assistance, should be taken by the national government. (PM Recommendation Indonesia 1-6, ST Recommendation iii. (v))
iv. Opportunities for expressing views should be given to local people in a process of the forest planning. Then their views should be highly taken account of in the plan. (PM Recommendation Indonesia 1-2)
v. A system for providing sufficient advice from experts should be established. In addition, a financial supporting measure for the payment of the administrative cost of that system should be made available to local people. (LA Recommendation ii. (iii) b), iii. (ii))

(c) Training programs should be organized in order to enhance implementation of the legal and administrative system on forest management. (CCD Article 19, LA Recommendation ii. (iii) f), PM Recommendation Laos 3-2, Vietnam 1-4, 3-3, ST Recommendation iii. (iv))

i. Training programs for government officers, members of NGOs, journalists and local people should be organized. (PM Recommendation, the Philippines 1-4, Vietnam 1-4, 3-3, ST Recommendation v. (vi))
ii. Recognition of the value of forests and the necessity of participation of local people should be included in the training programs. (PM Recommendation, the Philippines 1-4, ST Recommendation iii. (iv))

(d) The benefits to local people should be ensured. (CBD Article 8 (j), PM Recommendation Indonesia 1-8, LA Recommendation ii. (iii) a))

i. Collective forest management by local people should be encouraged and supported. (CBD Article 10 (c), (d), PM Recommendation Indonesia 3-2, Laos 2-2,)
   (i) Collective forest management should be authorized by the law. Village communities, cooperatives and forest user groups may be authorized as the management body. (PM Recommendation the Philippines 2-2, ST Recommendation iii. (iii))
   (ii) Collective forest management by local people should be given priority over the large-scale forest management by corporations in the process of granting a forest permission by the relevant government. (PM Recommendation Indonesia 3-1, The Philippines 2-6, Vietnam 2-1)
   (iii) Where appropriate, the collective forest management bodies should be authorized by the relevant government to carry out necessary regulations. The collective management body should also be provided for technical support. (PM Recommendation Indonesia 2-2, Vietnam 2-2, Laos 2-3)
   (iv) Ministries and authorities related to the collective forest management should coordinate among them in developing the forest plans. Not only within national government but also within and among local governments and between national government and local government, coordination measures should be taken. (ST Recommendation iv. (i))
ii. Support for individual-based forest management
   (i) A right to benefit, a right of management and a property right of local people over the forest who participate in reforestation and afforestation activities should be assured by the law. (PM

Recommendation Indonesia 4-1, 4-5, 4-6, The Philippines 3-1, ST Recommendation iii. (iii))

(ii) A plan for supporting the tree plantation and for distribution of benefit should be established. (PM Recommendation Indonesia 4-4, Laos 3-3, 3-4)

(e) Dispute settlement systems including an informal mechanism should be established or modified in order to secure the rights of local people. (PM Recommendation Indonesia 1-9)

i. The reliable and independent informal dispute settlement mechanism or the ombudsman system should be established. (LA Recommendation ii. (iii) h), iii. (iv), iii. (v))
ii. The procedures for objection or appeal should be established in order to ensure the public to raise an objection to the government decision. Information related to the objection procedures should be widely disseminated. (LA Recommendation ii. (iii) h), iii. (iv), iii. (v))
iii. An option to chose/agree with a dispute settlement mechanism, through legal forum or out of the court, should be ensured. Recourse to the traditional conflict resolution mechanism should be considered in deciding which mechanism should be appropriate for the resolution. (LA Recommendation ii. (iii) h), iii. (iv), iii. (v))
iv. In order to promote the use of such mechanisms, information related to such mechanisms should be sent to all stakeholders. In addition, necessary advice from experts and, as appropriate, financial assistance should be provided for them. (LA Recommendation iii. (iii))

Specific Issues: Some specific causes of the forest degradation in the Asia-Pacific region were identified and they need specific countermeasures. The necessary measures are as follows;

(a) Eradication and Prevention of Illegal Logging. (ST Recommendation ii. (iii))

i. The law on the prevention of illegal logging should be enacted or amended. In addition, a plan should be developed in order to enforce the law effectively. The plan may include the following measures;
   (i) An inspection system to forestry factories including a surprise inspection should be developed and carried out in order to ensure that the factories do not use timbers derived from illegal logging. (ST Recommendation ii. (iii))
   (ii) Import of timber derived from illegal logging should not be accepted by importing countries. (ST Recommendation ii. (iii))
ii. A network or a mechanism on monitoring the timber flow, involving NGOs and local people, should be established in order to grasp the situation of illegal logging. (ST Recommendation ii. (iii), PM Recommendation Indonesia 4-3)
iii. Training program for government officials, members of NGOs and local people should be organized in order to enhance the capacity of relevant persons. (ST Recommendation ii. (iii))

(b) Control of Forest Fires

i. When necessary, a law for prohibition of activities that cause a forest fire should be enacted or amended. At least, a plan controlling such activities should be developed and implemented by the government. (ST Recommendation iv. (vi))
ii. In order to ensure the effectiveness of laws or plans for the forest fire control, appropriate technology and sufficient equipment should be provided to governmental local branches or local governments that implement the law or plan at the field site. (ST Recommendation iv. (vii), (ix))
iii. An alternative technique to the forestland clearance by fire should be provided to local people. (ST Recommendation iv. (ix))
iv. Assistance for activities or projects related to the fire control should be given high priority in international aid program and in the national or local budgets. (ST Recommendation iv. (viii), v. (vii))

(c) Improvement of Forest Concessions; (regulation of concession)

i. Information related to the examination and decision on the forest concession should be disseminated. (ST Recommendation iv. (iii))
ii. Participation of local people in the process of examination and decision on the grant of concession should be ensured. (ST Recommendation iv. (iii), (iv))
iii. Areas of cultural, social and ecological significance should be excluded from the forest concession. (ST Recommendation iv. (iv))

3.2 Next steps of the IGES forest conservation strategy

In the first phase, the IGES Forest Conservation Project aimed to identify principles or elements of sustainable forest

management based on experiences in the Asia-Pacific region. This accounted for an important portion of the strategy for forest conservation. The research was carried out in the framework of four interrelated sub-teams: (1) the sub-team on structural analysis of forest destruction (ST sub-team) which was to provide basic information to other sub-teams, 2) the sub-team on participatory forest management policy (PM sub-team) which was to make recommendations covering local and national levels, (3) the sub-team on timber trade policy (TT sub-team) which was to make recommendations covering national and international levels, and (4) the sub-team on legal/administrative measures for forest conservation (LA sub-team) to elaborate principles/elements for sustainable forest management as a final outcome of the Project. Target countries for the research were Indonesia, Thailand, the Philippines, Laos, Vietnam, China, and Russia.

The ST sub-team reconfirmed the main root causes of forest loss such as “the insufficient base of local participation and community rights” and “impacts of market forces,” as well as the “forest development paradigm with industrial emphasis” and “economic/political challenges.” The PM sub-team analyzed and compared existing participatory forest management systems in Southeast Asian countries aiming to clarify their characteristics, and categorized them into several types based on their main actors, legal status of forest land, and activities. Then the sub-team made policy recommendations through the examination of internal and external constraints on participation. The TT sub-team mainly conducted time-series economic analysis (TEA) of the timber trade involving both exporting and importing countries in the Asian region as well as data collection for space equivalent analysis (SEA) of the timber trade. The LA sub-team focused on international legal measures relating to forest conservation, international processes of policy dialogue on forest issues, and domestic legal/administrative measures relating to participatory forest management. The sub-team elaborated the principle/elements for sustainable forest management in cooperation with other sub-teams.

The project has successfully constructed a valuable network with researchers, NGOs, local people, and government officials in the Asia-Pacific region. These inter-personal relations with project members might be utilized and evolved into inter-organizational relations with IGES in the second phase.

As a logical consequence of the fact that the major outcomes of the Project are principles or elements of sustainable forest management, the main target groups in the first phase were the government authorities. Even though we invited government officials to a series of regional workshops held in Jakarta and Vientiane to discuss and examine our draft strategies including policy recommendations, it did not seem to be enough for the Project to have an influence on the national forest policy in each country.

A goal of the IGES FC Project is to develop strategy for desirable forest conservation and sustainable forest management. Although many approaches should be taken into consideration to achieve the goal, for the second phase the Project will focus on objectives based on the outreach of first phase activities, which were partly referred to above. The project will develop local guidelines (IGES local guidelines) and national guidelines (IGES national guidelines) for meaningful participation in forest management. It is expected that the local guidelines will be utilized at a local level. They will make up an important part of national guidelines together with other field projects concerned, and will be presented at international conferences. The Project called the attempts a “local approach” where a viewpoint shifts from local level to national and international level.

In addition to these objectives, the Project will to develop recommendations (IGES policy recommendations) to ensure the effective application of international treaties on local participation in forest management at the national level for participation in forest management. This activity is called “international approach” where the viewpoint shifts from the international level, to national and local levels.

The IGES FC Project expects that two approaches, local and international, will be intersected, blended, and synthesized at national level discussions, especially in the process to elaborate the IGES national guidelines.

4. Evaluation of achievements

4.1. Assessments of major outputs

a. Originality of Project research

The FC Project is original in the sense that it has been conducting comprehensive research that deals with the complexity of the forest issue. In order to conduct comprehensive research the FC Project has the four following sub-teams: (1) Structural Analysis on causes of forest loss (ST), (2) Timber Trade policy (TT), (3) Participatory Forest Management (PM) and (4) Legal and Administrative measures for forest conservation (LA).

One of the unique facets of the sub-team for Structural Analysis is the interdisciplinary diversified research that identifies the economic and social structures of the leading causes of forest loss, at local, national, regional and global levels in nine countries[9] ranging from tropical to temperate and boreal forests. Special mention should be given to positive participation in the IFF/NGO UC that is aiming to develop an international forest policy and maintain a policy dialogue in the international society. . These unique approaches provided basic perspectives to other sub-teams about the issues to be examined in order to identify measures for sustainable forest management.

The sub-team for Timber Trade is original in that it integrates resource accounting, forest/timber certification schemes, econometric analysis, and spatial equilibrium analysis. Although the sub-team could not effectively cover timber trade to forest resources because of the lack of appropriate data, it confirmed the fact that free trade is not an absolute solution to environmental problems.

In terms of the sub-team on Participatory Forest Management, integrating national policy studies and local field studies in order to elaborate policy recommendation for participatory forest management in Southeast Asian countries can be underlined. In particular, the sub-team illustrated the internal social, economic and cultural constraints that are predominant in local communities and external constraints that prevent local participation. This methodology and framework were successfully used to develop policy recommendations.

The Sub-team for Legal and Administrative Research is original in that it analyzes the international law requirements and actual local necessities in order to clarify the desirable legal measures for sustainable forest management. To that end, it has carried out the research on identification of enforcement and compliance provisions in the relevant environmental treaties. Based on these analysis, this sub-team identified legal principles to be included in a future "Convention on Forests" and criteria/guidelines that should be included under such a convention, although these principles were originally expected in the second phase. Since, there was recommendation to change direction of activities in the second phase from proposals at international level to national level, preliminary research of changing directions of the result of the first phase has been conducted. The Project has also conducted research on basic legal elements to be included in the proposed world forest convention, on the new trends in several domestic laws on forests, and on cases on forest- related conflict resolutions.

b. Improving the current level of research

In the studies on ST, the Project succeeded in addressing the key underlying causes of forest loss in the region, which is comprised of both production and consumer countries including northeast Asia sub-region. The coverage of such a wide range of countries should be recognized as a significant achievement, although many of the causes for environmental degradation had already been pointed out in existing studies. The project also succeeded in confirming the intervention of the behavior of consumer society on the forest loss in industrialized countries: e.g., analysis on trade of Lao cypress,[10] and a study on the impacts of China's policy changes for the China-Russia timber trade.[11] Existing research has helped clarify a reliable timber flow from the Russian Far East to Asian countries.[12]

[9] Indonesia, the Philippines, Mekong River Basin (Thailand, Laos P.D.R., Vietnam and Cambodia) Russia, China, and Japan
[10] Yamane and Chanthirath 2000
[11] Yamane and Lu 2000
[12] Yamane et al, 2000

As for the sub-team on TT, research on resource accounting analyzed how forest-related accounts are linked together. Investigation of the forest/timber certification scheme revealed the need for such a scheme in Asia. Econometric analysis and spatial equilibrium analysis, along with trade a policy study for several countries, made it clear that environmental consideration and the argument about infant industries are important in forming timber trade policy.

Regarding research on PM, national policy studies and local field studies have been conducted separately by different researchers. Usually, policy studies have a tendency to neglect the local reality; field studies are weak in developing policy recommendations. The research of the Project overcame the problem of integrating these two studies mentioned above.

Research activities on LA have been carried out separately by different researchers. Governmental negotiations on forest issues at the global level sometimes neglect the actual local status within sovereign states. On the other hand, local authorities and communities do not recognize their rights and duties under the relevant international legal instruments. The research of the Project combined both approaches.

c. Influence on policy-making process

The project has tried to disseminate research outputs and exchange information related to forest conservation issues in the region on various occasions such as international meetings, workshops organized by IGES, etc. In international society, active collaboration and participation at the IFF/UC-NGO Asia and global workshops provided good opportunities to make public the urgent needs for the in-depth studies on the causes of forest loss and continuous policy dialogue to overcome the underlying causes of unsustainable forest use.[13] With respect to IGES activities, the series of policy-dialogue workshops held in Jakarta, Vientiane and Khabarovsk also provided opportunities to influence the policy-making process. For example, the international workshop in Khabarovsk, Russia held by the Project in September 2000 provided an opportunity for collaboration with several key organizations in the Russian Far East and provided local key stakeholders with an opportunity to engage in a policy dialogue and develop concrete strategies for forest conservation. In the policy dialogue workshops held in Jakarta and Vientiane with local officials and community members who are in charge of forest management, the Project provided precise analysis and interpretation of existing environmental treaties and their resolutions aiming to promote awareness and recognition of international regime at the local level. In these two workshops, necessary legal and administrative measures also contributed to facilitate collaborative works and discussions.

Field research activities for the purpose of grasping the actual situation of forest management at a local level contributed to influencing the policy-making process at the local level through discussions with local officials who are in charge of forest management. Policy recommendations developed by the PM sub-team also contributed through the discussion with policy makers at the international workshops held in Jakarta and Vientiane.

d. Appropriateness and timeliness to stakeholders' needs

Among various forest-related stakeholders, the FC Project places great importance on local people, with special reference to their participation in forest management. Their meaningful participation is indispensable for enhanced implementation of forest management, both at an international and local level. This has been widely recognized in international society, but concrete legal and administrative measures have yet to be identified and proposed. Thus the theme and method of the Project has been appropriate and very timely for forest-related stakeholders, especially for local people. Our research activities have been also supported by many outside collaborators consisting of NGO activists, governmental officials and academics that search for suitable participatory management methods for stakeholders. In addition, NGO activists and academics plan to begin and continue a policy dialogue with the government. The international workshop provided them with an opportunity to engage in policy dialogue.

Moreover, trade and environmental issues are one of the key concerns in the debate over the practices of the WTO. The FC Project participated in this debate. The United States and European Union made their own models, whereas the Japanese government and other Asian countries did not. The FC Project may fill in this vacuum by creating a model in future.

[13] Bio forum 1999 and Verolme and Moussa 1999

e. Outreach

The Japanese government formed a committee to discuss the effects of liberalization in timber trade on sustainable forest management, in which both core staff and research collaborators participated. Some members associated with the research of TT and ST took part. The research on timber trade made its activities known to the public by contributing articles to journals such as the *Journal of Forest Economics* and other academic journals.

The project sponsored a symposium of "Participatory Tropical Forest Management: multi-disciplinary approach" hosted by the Japanese Forest Economic Society in April 2000, in which one of the members connected with the research on PM presented a part of the research result. One of the members concerned with the research on PM made its activities known to the public by contributing articles to journals such as the *Journal of Forest Economics* and the *International Review for Environmental Strategies*. With respect to individual studies, several research outputs regarding the China-Russia timber trade[14] provided detailed information on timber flows from the Russian Far East to the Asia-Pacific and contributed to finalize a report on "illegal timber trade in the RFE"[15] and other domestic journals such as *Green Power* and *Mokuzai Joho*.

The project held the workshop as one session in the APNEC four and a member concerned with research on PM and LA made a presentation based on the results of research in November 1998. The members of the LA team also attended the "UNITAR/KIWC Training workshop for the Asia-Pacific Region on Integrated Conservation and Development Planning: the Role of Multilateral Agreements related to Biological Diversity" and contributed as resource persons and rapporteurs based on the research activities. In addition, the members of the LA team were dispatched to the third and the fourth IFF meetings in order to gather information and distribute research results of the FC Project. The reports of meetings written by the members were printed in *Global Net* and *Monthly OISCA*.

4.2. Evaluation of the performance of the Project

We believe that most of the activities have been conducted successfully, with the exception some unexpected matters. Regarding research on ST, research activities have generally achieved the expected results in spite of handicaps that arose when the original sub-team leader resigned due to illness. We believe that conducting research in Northeast Asia, including the Russian Far East and China, is significant progress of the theme in the first phase. However we could not conduct enough case studies on the impacts of overseas investment on forest loss because it was difficult to allocate a sufficient budget to the study and to find appropriate research collaborators. Regarding research on TT, it can be said that research was successful to elaborate timber trade policy recommendations for sustainable forest management in four countries (Indonesia, the Philippines, Malaysia, and Korea). In general, our research achievements are academic, in that they can be applied equally to other countries. Many of the objectives scheduled at the initial stage of the Project were accomplished well. However, further elaboration is still needed. The project has been carried out in accordance with the plan set forth at the beginning of the first phase. We were able to accomplish the level of integration provided the time and resources, funds and personnel allocated to our sub-team.

Research on PM was also successful to elaborate policy recommendations for participatory forest management in four countries (Indonesia, the Philippines, Vietnam, and Laos). However the Project canceled plans in the case of Thailand, because the issues concerned became quite sensitive to a collaborator in the process of enacting community forestry law. It is concluded that almost all the objectives scheduled at the initial stage of the Project were accomplished well. Regarding results of research on PM, the Project has generally achieved the expected results. However, we could not get enough information on cultural aspects of target communities, because the time allocated for field studies was too short.

Regarding research on LA, almost all activities were completed successfully. In particular, analysis on international treaties and the inter-governmental processes related to forest conservation indicate the necessary principles and

[14] Yamane and Lu 2000
[15] Friends of Earth-Japan et al 2000

measures for realizing sustainable forest management. These principles and measures form the base for policy recommendations for sustainable forest management as the result of this Project. Regarding analysis of domestic laws in target countries, we grasped the current situation of laws related to forest management and participation of local people, although we faced difficulties in gathering detailed information and documents due to language barriers.

4.3 Evaluation of management of the Project

The almost all activities of project have been managed well in accordance with the original schedule. However, there are some difficulties on managing the Project. With respect to research on ST, there are several differences between the original research plan and the research conducted due to several reasons mentioned above. However, one of the main targets of the Project, to address the underlying causes of forest loss in the Asia-Pacific region, has been achieved and documented based on intensive and well-managed studies. The project has produced two synthesis reports and more than twenty working papers. Moreover the Project has succeeded in establishing a study network among academic experts and NGO staff both in Japan and in target countries. Regarding research on TT, the Project faced some difficulties in conducting the activities in accordance with original schedule. In spite of these difficulties, the Project achieved most of its intended research results.

4.4 Economic efficiency of Project management

The budget was allocated to the activities carried out by full-time staff and collaborators (as commissioned research). Needless to say, the budget allocated to the full-time staff was managed efficiently. Regarding the budget allocated to the activities carried out by collaborators, comparing to the amount allocated to them, the results obtained were very good. We can say that the budget was utilized very efficiently, because the Project covered a vast area and many countries in the Asia-Pacific region, and such ambitious research would have required a much larger budget than that actually allocated to the FC Project if all research had been carried out by full-time staff of IGES. Commissioned research by research collaborators supplemented the research activities of full-time staff and they provided informative suggestions for developing the reports.

Moreover, the full-time staff of the Project secured funding from outside of IGES, for example, a grant from the former Ministry of Posts and Telecommunications, the Japan Society for the Promotion of Science, and the Foundation for Advanced Studies on International Development.

4.5 Suggestions for improving the Project in the second phase

Considering the limited financial and human resources, we should consider somehow narrowing the targets, for example, reducing the number of target countries to three (e.g., as Indonesia, Laos, and Russia) in order to allocate more time and funds for field studies, which will be indispensable for the development of guidelines. Another option would be to increase the resources, i.e., to recruit more full-time staff and increase the budget of the Project.

In addition, the experiences in the first phase indicate necessity of more communication among the members of the Project. The research activities of the Project have been conducted by in an interdisciplinary manner and involved many researchers in various countries. However, some difficulties arose in communications. In order to grasp forest issues comprehensively, interdisciplinary research is necessary. Collaboration with various countries also required us to grasp the actual situation of local forest management. Even if we narrow the target of project in the second phase, closer communication and exchanging of information and knowledge will be indispensable. The holding of several meetings with research collaborators will also be useful to overcome problems.

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Yamauchi, M. 1999. Conflict Resolution Mechanism in Sustainable Forest Management: From case studies in Thailand, Indonesia and Malaysia, *A step toward Forest Conservation Strategy (1) , interim report 1998*, 22-32, Hayama: IGES.

List of Achievements

1. Commercial Publications

None

2. Books Published by IGES

FY1998

IGES Forest Conservation Project (1998) "*IGES International Workshop on Forest Conservation Strategies for the Asia and Pacific Region*" Jul. 21-23, 1998, Hayama, IGES, 178pp.

IGES Forest Conservation Project (1998) "*2nd IGES International Workshop on Forest Conservation Strategies for the Asia and Pacific Region*" Nov. 26-27, 1998, Hayama, IGES, 65pp.

FY1999

IGES Forest Conservation Project (ed.) (2000) "*The Proceedings of the Third IGES International Workshop on Forest Conservation Strategies for the Asia and the Pacific Region*", 251pp.

IGES Forest Conservation Project (2000) "*A Step towards Forest Conservation Strategy (1): Current Status on Forests in the Asia-Pacific Region*", Interim Report 1998 of IGES Forest Conservation Project, 563pp.

FY2000

IGES Forest Conservation Project (2000) "*A Step toward Forest Conservation Strategy (2)*" Interim Report 1999, Hayama, IGES, 473pp.

IGES Forest Conservation Project (2001) "*A Step toward Forest Conservation Strategy (3)*" Interim Report 2000, Hayama, IGES, 154pp.

IGES Forest Conservation Project (2001) "*IGES Policy Dialogues toward Sustainable Forest Management in Asia-Pacific Region"*, Hayama, IGES, 86pp.

IGES Forest Conservation Project (2001) "*IGES-NUOL Workshop on Forest Conservation : Lesson from Lao P.D.R. and Vietnam, Vientiane*" 2-3 August 2000, Hayama, IGES, 101pp.

IGES Forest Conservation Project (2001) "*IGES Policy Recommendations on Forest Conservation in the Asia-Pacific*" Proceedings of the Fourth IGES International Workshop on Forest Conservation in Asia-Pacific, January 2001, Hayama, IGES, 191pp.

3. Workshops and Seminars organized by IGES

FY1998

Date	Title of the workshop	Lecturers and participants	Place
Jul. 21-23, 1998	First IGES International Workshop on Forest Conservation Strategies for the Asia and Pacific Region	Germalino M. BAUTISTA(Ateneo de Manila University), Mia SISCAWATI(The Indonesian Institute for Forest and Environment(RMI)), Amrit L. JOSHI(Ministry of Forest and Soil Conservation of Nepal), Pankaj SEKHSARIA(Kalpavriksh Environmental Action Group), Ruperto P. ALONZO(University of the Philippines), Jairo CASTANO (International Tropical Timber Organization(ITTO)), Ichiro NAGAME(Forestry Agency of Japan), Eishi MAEZAWA(WWF Japan), Herman HIDAYAT(LIPI), Sudha VASAN(University of Yale), Sandrayati MONIAGA(ELSAM), Pearmsak MAKARABHIROM(RECOFTC), Li XIAOPING(Chinese Society of Forestry), Khampha CHANTHIRATH(FORCAP), Khamvieng XAYABOUTH(National University of Laos), Akio MORISHIMA, Kazuo MATSUSHITA, Hiroji ISOZAKI, Bishnu BHANDARI, Yoichi KURODA	Shonan Village Center/ Hayama
Sep.14-19, 1998	UNITAR/KIWC Training Workshop for the Asia-Pacific Region on the Implementation of Multilateral Agreements Related to Biological Diversity	Hiroji ISOZAKI	Kushiro City Life Long Learning Center/ Kushiro
Nov. 26-27, 1998	Second IGES International Workshop on Forest Conservation Strategies for the Asia and Pacific Region(Asia-Pacific Centre for Environmental Law(APCEL))	Sanowar HOSSAIN(B. POUSH), Hoang Lien SON(Forest Science Institute of Vietnam), Makoto INOUE, Kiyoshi KOMATSU	National University of Singapore/Singapore
Dec. 21, 1998	The First Brainstorming Forum on IFF/ Forest Convention	Kenji FUJITA(Environment Agency), Yuji IMAIZUMI(Forestry Agency), Tadashi OGURA(JATAN), Hiroji ISOZAKI, Makoto INOUE, Shin NAGATA, Kimihiko HYAKUMURA	Okamotoya Conference Room/Tokyo
Jan. 29, 1999	Lecutre on GIS Use in Far East Russia	Vladimir BOCHARNICOV(Pacific Institute of Geography), Masanobu YAMANE	Okamotoya Conference Room/Tokyo
Jan. 29, 1999	The Second Brainstorming Forum on IFF/ Forest Convention	Tadashi OGURA(JATAN), Makoto INOUE, Yoichi KURODA, Masanobu YAMANE, Kimihiko HYAKUMURA, Kiyoshi KOMATSU	Okamotoya Conference Room/Tokyo
Mar. 2, 1999	Seminar on Far East Russia Forest Conservation Strategies	Arkadiy Vladimirovich KAZA(Udehe Hunter), Andrei Sergeevich ZAKHARENKOV(Far East Russia Non-Timber Products Utility Association), Shiro SASAKI(National Museum of Ethnology), Hiromi TAGUCHI (Research Center for Hunting and Gathering Culture), Hiroaki KAKIZAWA(Hokkaido University), Eiichiro NOGUCHI(FOE Japan), Masanobu YAMANE	Shonan Village Center/ Hayama
Mar. 9, 1999	The Third Brainstorming Forum on IFF/ Forest Convention	Tadashi OGURA(JATAN), Makoto INOUE, Yoichi KURODA, Kiyoshi KOMATSU	Okamotoya Conference Room/Tokyo

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Date	Title of the workshop	Lecturers and participants	Place
Apr. 8, 1999	1st FC Internal Workshop	Mia SISCAWATI (Indonesian Institute for Forest and Environment /RMI)	Shonan Village Center/ Hayama
May 20, 1999	2nd FC Internal Workshop	Shirou SASAKI (National Museum of Ethnology), Toshiyuki TSUCHIYA (Iwate University), Atsuko HAYAMA (Kyoto University),Yoshiki SEKI (Kyoto University), Nobuyuki YAMAMOTO (Shimane University)	Okamotoya Conference Room/Tokyo
Jun. 2, 1999	Open Seminar : Cultivating a New Relationship with the World Forests and Consumer Society	Janet ABRAMOVITZ (World Watch Institute)	Global Environment Information Centre/ Tokyo
Jun. 17, 1999	3rd FC Internal Workshop	Yosei OIKAWA (Kyoto University), Satoshi TACHIBANA(University of Tokyo)	Shonan Village Center/ Hayama
Jul. 7, 1999	4th FC Internal Workshop	Mihoko SHIMAMOTO (Hosei University)	Shonan Village Center/ Hayama
Sep. 7-9, 1999	3rd IGES International Workshop on Forest Conservation Strategies for the Asia and the Pacific Region	Khampha CHANTHIRATH (Forest Conservation and Afforestation Project(FORCAP)), Philip HIRSCH (Division of Geography, University of Sydney), Pearmsak MAKARABHIROM (Regional Community Forestry Training Center), Alexander S. SHEINGAUZ (Department of Natural Resources and Infrastructure Problems, Economic Research Institute), Dinah L. SHELTON (Center for Civil and Human Rights, Notre Dame Law School), Mia SISCAWATI (Indonesian Institute for Forest and Environment /RMI), Xi WANG (Research Institute of Environmental Law, Wuhan University), Yeo-Chang YOUN (Dept. of Forest Resources, Seoul National University), Mihoko SHIMAMOTO (Hosei University), Satoshi TACHIBANA (University of Tokyo), Toshiyuki TSUCHIYA (Iwate University), Atsuko HAYAMA (Kyoto University), Makiko YAMAUCHI (United Nations University), Nobuyuki YAMAMOTO (Shimane University) , Martinus NANANG	The University of Tokyo/Tokyo
Mar. 4-5, 2000	2nd IGES Seminar on Forest Conservation for the Russian Far East	Eiichiro NOGUCHI (Friend of Earth/FOE-Japan), Hiroaki KAKIZAWA (Hokkaido University), Joshua NEWELL (FOE-Japan), Kazuo MORIMOTO (Archaeological Institute of Chiba Prefecture), Shirou SASAKI (National Museum of Ethnology)	Shonan Village Center/ Hayama

FY2000

Date	Title of the workshop	Lecturers and participants	Place
Jun. 29-30, 2000	IGES-LIPI Workshop on Forest Conservation: Developing Strategies for Indonesia and the Philippines (Lembaga Ilmu Pengetahuan Indonesia (LIPI), IGES)	Taufik ABDULLAH (LIPI), John HABA (LIPI), Ernesto S. GUIANG (World Bank), Bambang RIYANTO (Ministry of Forestry and Estate Crops), Deni HIDAYATI (LIPI), Matheus PILIN (Program Pemberdayaan Sistem Hutan Kerakyatan Pancur Kasih), Ade CAHYAT (Pusat Hutan Kerakyatan), RTM. SUTAMIHARDJA (Agricultural Institute of Bogor), Mia SISCAWATI (Indonesian Institute for Forest and the Environment), Ruperto P. ALONZO (University of The Philippines, Diliman), Herman HIDAYAT (LIPI), Rinekso SOEKMADI (Agricultural Institute of Bogor), Juan M. PULHIN (University of the Philippines), Riwanto TIRTOSUDARMO (LIPI), Hiroji ISOZAKI, Makoto INOUE, Shin NAGATA, Masanobu YAMANE, Martinus NANANG	LIPI/Jakarta/Indonesia
Aug. 2-3, 2000	IGES-NUOL Workshop on Forest Conservation: in Lao P.D.R. and Vietnam (Faculty of Forestry, National University of Laos (NUOL), IGES)	Khamvieng XAYABOUTH (NUOL), Saymang VONGSAK (NUOL), Boumy PHONESAVANH (NUOL), Philip HIRSCH (Sydney University), Satoru MATSUMOTO (Mekong Watch, Japan/IGES), SANG Polrith (UNDP/CARERE), Bounthene PHASIBORIBOUN (NOUL), DO Dinh Sam (Forest Science Institute of Vietnam), LE Quang Trung (Forest Science Institute of Vietnam), Hiroji ISOZAKI, Makoto INOUE, Masanobu YAMANE, Kimihiko HYAKUMURA	NUOL/Vientiane/Lao PDR
Sept. 19-20, 2000	International Workshop on Transition to the Sustainable Forest Management Strategy in the Russian Far Eastern Ecoregion in the 21 Century (Khabarovskiy Krai Administration, Economic Research Institute (ERI), Far Eastern Representative of World Wildlife Fund (RFE-WWF), Forest Trends, Far Eastern Forestry Research Institute, Friends of the Earth Japan, Ecodal, IGES)	V. NEGODYAEV(Khabarovskiy Krai Administration), N. MIKHEEVA (ERI), A. LEVINTAL(Economic Committee of the Khabarovskiy Krai Administration), V. GURIEV(Economic Committee of the Khabarovskiy Krai Administration), T. RUSINA(Far Eastern Representative of WWF), V. KOLOMYTSEV(Forest Service Directorate of the Khabarovskiy Krai), N. DMITRIEV(Forest Service Directorate of the Yevreyskaya Autonomous Oblast), D. EFREMOV(Far Eastern Forestry Research Institute), J. FORD(Forest Trends), H. KAKIZAWA(Hokkaido University), Yu. BENDERSKIY(Institute of Economy and Organization of Industrial Production), V. REZANOV(Kabarovsk State Technological University), V. DYUKAREV(Biological-Soil Institute), A. MURZIN(Pacific Institute of Geography), V. YERMOSHIN(Pacific Institute of Geography), P. OWSTON(Sustainable Ecosystems Institute), A. TSABERYABIY(Khabarovsk social fund ERF), A. SHAROV(The Heron Group), N. SHEVTSOV(Center of Forest Certification), O. KOZLOVA(Economic Committee of the Khabarovskiy Krai Administration), S. SASAKI(National Museum of Ethnology), N. ANTONOVA(ERI), E. NOGUCHI(Friend of the Earth Japan), Ch. ZHU(WWF-Beijin), Yu. DARMAN(Far Eastern Representative of WWF), V. DYUKAREV(Biological-Soil Institute), Yu. MANKO(Biological-Soil Institute), A. KOVALEV(Far Eastern Forestry Research Institute), A. ALEKSEENKO(Far Eastern Forestry Research Institute), G. SUKHOMIROV(ERI), A. BARDAL(ERI), H. FOX(Yale University), A. SAPOZHNIKOV(Far Eastern Forestry Research Institute), A. IZMODENOV(Institute of Water and Ecological Problems), G. SOKOLOVA(Far Eastern Forestry Research Institute), E. TETERYATNIKOVA(Far Eastern Hydrological and Meteorological Center), V. KARAKIN(Far Eastern Representative of WWF), A. SHEINGAUZ(ERI), M. YAMANE	ERI/Khabarovsk/Russia
Jan. 16-18, 2001	4th International Workshop on Forest Conservation Strategies in Asia and the Pacific Region	MA Hwan Ok (International Tropical Timber Organization (ITTO)), Xeme SAMOUNTRY (Department of Forestry/ Lao P.D.R.), Simon G. DEVUNG (Center for Social Forestry (CSF)/ Indonesia), EFRANSJAH (ITTO), Mafa CHIPETA (Center for International Forestry Research (CIFOR)), Tachrir FATHONI (Embassy of the Republic of Indonesia to Japan), Yoshiaki KANO (Japan International Cooperation Agency (JICA)), Akio MORISHIMA, Hiroji ISOZAKI, Makoto INOUE, Shin NAGATA, Masanobu YAMANE, Martinus NANANG	The University of Tokyo/Tokyo
Mar. 13-14, 2001	The 3rd Seminar on the Forest Conservation Strategies in the Far-East Russia (Friends of the Earth Japan, Global Environmental Forum)	Andrey S. ZAKHARENKOV (Far Eastern Association of the Use of Non-timber Forest Products), Hiroaki KAKIZAWA (Hokkaido University), Natalia ANTONOVA (ERI), Masanobu YAMANE	Earth Partnership Plaza/ Tokyo

4. Academic Papers

(i) Papers complied and published by IGES

FY1999

IGES Forest Conservation Project Leagal and Administrative Support Measure Sub-team (1999) "The Outline of Brain Storming Forum on IFF and the Convention on Forest" Distributed at the Costa Rica-Canada Initiative East and Southeast Asia Regional Meeting, August 1999, p.7

IGES Forest Conservation Project (1999) "Important Issues on Environment and Development : Toward Rio+10", p.67-84

IGES Forest Conservation Project (2000) "Proceedings of First IGES Seminar on Forest Conservation for the Russian Far East", p.56

IGES Forest Conservation Project (2000) "The Report of Brain Storming Forum on IFF and the Convention on Forest", p.22

HYAKUMURA, Kimihiko (2000) "External Constrains on Participation of Local People in Lao R.D.R." *The Proceedings of the Third IGES International Workshop on Forest Conservation Strategies for the Asia and the Pacific Region*, p.123-130

INOUE, Makoto (1999) Sustainable Strategy Paper for ECO-ASIA: Input from IGES Forest Conservation Projects" *Search for New Development Patterns: Challenges of the Asia-Pacific Region in the 21st Century*, Report of ECO ASIA Long-term Perspective Project prepared for ECO ASIA '99

KOMATSU, Kiyoshi (2000) "Current Situation on Environmental Impact Assessment Systems in Southeast Asian Countries" *A step toward Forest Conservation Strategy (1)* FC Interim Report 1998, p.17-21

KOMATSU, Kiyoshi (2000) "Outline of the Brain Storming Forum on IFF and the Convention on Forest" *The Proceedings of the Third IGES International Workshop on Forest Conservation Strategies for the Asia and the Pacific Region*, p.188-195

KOMATSU, Kiyoshi (2000) "Outline of the Brain Storming Forum on IFF and the Convention on Forest" *A Step Toward Forest Conservation Strategy (1)* FC Interim Report 1998, p.12-16

NANANG, Martinus (1999) "Participatory Forest Management: A Case of a Benuaq Community of East Kalimantan" In FC Interim Report 1999(Yet to be published)

NANANG, Martinus (1999) "The State as External Constraints on Local Participation in Forest Management in Indonesia" *The Proceedings of the Third IGES International Workshop on Forest Conservation Strategies for the Asia and Pacific Region*, The University of Tokyo, 7-9 September 1999, p.88-102 (Also available in the Web)

YAMANE, Masanobu (1999) "Scope of the Research on Structural Analysis of the Regional Forest Destruction" *A Step towards Forest Conservation Strategy (1)* Interim Report 1998, p. 419 - 425

YAMANE, Masanobu (1999) "Preliminary Study on the Causes of 1998 Large Scale Forest Fires in the Southern Part of the Russian Far East" *A Step towards Forest Conservation Strategy (1)* Interim Report 1998, p. 467 - 473

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IGES Forest Conservation Project (2000) "IGES-LIPI Workshop on Forest Conservation: Developing Strategic Principles for Indonesia and the Philippines" Proceedings of the IGES-LIPI workshop in Jakarta, 29-30 June 2001, p.167

IGES Forest Conservation Project (2000) "Report on the International Workshop Transition to the Sustainable Forest Management Strategy in the Russian Far East Ecoregion in the 21 Century" Khabarovsk, 19-21 September 2000, p.49

INOUE, Makoto (2000) "Indonesian Forest Policy and the Role of NGO" *A Step toward Forest Conservation Strategy (2)*, p.335-346

INOUE, Makoto (2000) "Causes and Size of 1997/98 Forest Fires in Indonesia" *A Step toward Forest Conservation Strategy (2)*, p.347-359

NANANG, M. and INOUE, M. (2000) Local Forest Management in Indonesia: A Contradiction between National Forest Policy and Reality" *International Review for Environmental Strategies*, Vol. 1 (1), p.175-191

NANANG, Martinus (2000) "Constraining Conditions for Local Participation in Forest Management: A Case from East Kalimantan" *A Step toward Forest Conservation Strategy (2)*, p.63-84

YAMANE, M. and CHANTHIRATH, K. (2000) "Lao Cypress Forests : Causes of Degradation and the Present State of Conservation in Lao P.D.R." *International Review for Environmental Strategies*, Vol. 1 (1), p.119-133

YAMANE, M. and LU, W. (2000) "The Recent Russia-China Timber Trade, An Analytical Overview" *A Step toward Forest Conservation Strategy (2)*, p.441-456

(ii) Contributions to journals outside of IGES

FY1998

INOUE, Makoto(1998) "Evaluation of Local Resource Management Systems as the Premise for Introducing Participatory Forest Management" *Journal of Forest Economics*, 44(3)

INOUE, Makoto(1998) "Toward Institutionalization of Various Participatory Forest Management Systems in Lao P.D.R." *Proceedings of IUFRO Inter-Divisional Seoul Conference, October 12-17, 1998*

INOUE, Makoto (1999) "Development and Conservation of Tropical Forest" Chapter 12, *Introduction to South-East Asian Studies*, edited by Cultural Study Center and Sophia University, p.157-168, Iwanami Shoten

INOUE, Makoto and NAGATA, Shin (1998) "Forest Resources and Global Environment" Chapter 2, *Sustainable Utilization of Bio-Resources*, edited by Kazuhiro TAKEUCHI and Manabu TANAKA, p.23-58, Iwanami Shoten

KURODA, Yoichi (1998) "Copper Mine Development in Equadore" *Newsletter,* Society of Environmental Sociology

KURODA, Yoichi (1998) "Encounter With People Who Protect World's Forest" *Monthly Bulletin Japan Public Sector Union*, 66, p.50-51

KURODA, Yoichi (1998) "The Current Status and Background of Forest Fires in Indonesia" *History and Geography*, p.16-19

NAMURA, Takayuki and INOUE, Makoto(1998) "Land Use Classification Policy in Laos: Strategy for the Establishment of an Effective Legal System" *Journal of Forest Economics* 44(3), p. 23-30

FY1999

HYAKUMURA, Kimihiko(2000) “The Response of Local People Through the Forest Conservation Policy in Lao P.D.R. : Case Study of National Bio-diversity Conservation Areas” *Proceedings of the 111th the Japanese Forestry Society Conference*, The Japanese Forestry Society, p.16

INOUE, Makoto(1999) "Shinrin Chiiki Hatten Ron" *Shinrin, Ringyo, Sanson Mondai Kenkyu Nyumon*, edited by Shoji FUNAKOSHI, Chikyusha, p.15-34

INOUE, Makoto(2000)"Actors and Institutions of Participatory Forest Management Systems in South East Asia: A Forestry-Sociological Approach" *Journal of Forest Economics*, 46(1)

KOMATSU, Kiyoshi (1999) “International Framework on Forest Conservation” *Global Net* Vol 104, p.20-21

KOMATSU, Kiyoshi (1999) “Do Governments Play for Time?” *JATAN NEWS* No.40, p.8.

YAMANE, Masanobu (1999) “Toward Forest Conservation Strategy in Russian Far East” *Global Net,* Global Environemtal Forum No.101, p.2-4

YAMANE, Masanobu (1999) “Strategic Research Toward Forest Conservation Strategy in Asia-Pacific Region” *Kankyo*, Japan Environmental Association, Vol.24, No.5, p.13-14

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INOUE, Makoto (2000) "21st Century: Utilization and Management of the Tropical Forest" *Agriculture: A Challenge against the 21st Century-50 Proposals to Save the Earth-*, edited by The University of Tokyo Graduate School of Agricultural and Life Sciences , p.142-143, Sekai Bunkasha

INOUE, Makoto (2000) "Mechanism of Changes in the Kenyah's Swidden System: Explanation in Terms of Agricultural Intensification Theory" *Rainforest Ecosystems of East Kalimantan: El Nino, Drought, Fire, and Human Impacts*, edited by Edi GUHARIDJA, Mansur FATAWI, Maman SUTISNA, Tokunori MORI and Seiichi OHTA , p.167-184, Springer-Verlag

INOUE, Makoto (2000) "Participatory Forest Management" *Rainforest Ecosystems of East Kalimantan: El Nino, Drought, Fire, and Human Impacts*, edited by Edi GUHARIDJA, Mansur FATAWI, Maman SUTISNA, Tokunori MORI and Seiichi OHTA , p.299-307, Springer-Verlag

INOUE, Makoto (2000) "Swidden Agriculture in the Context of the Tropical Forests Conservation" *JICA Frontier*, No.8, p.8

INOUE, Makoto (2000) "The Crisis of the Eco-system and the Local Areas: Kalimantan" *World History of the Local Areas 12: A Local Perspective*, edited by Seiji KIMURA and Eiji NAGASAWA, p.53-85, Yamakawa Shuppansha

INOUE, Makoto (2000) "The Pattern of Local Development: Kalimantan" *Unique Logic of Local Development*, edited by Younosuke HARA(Area Study Series 10), p.245-298, Kyoto Daigaku Gakujutsu Shuppankai

INOUE, Makoto (2000) "The People and the Forest of the Tropical Regions" *Study on Problems of Agricultural Structures*, No.203, p.64-112

INOUE, Makoto and NANANG, Martinus(2000) Indonesia" *Asia Kankyo Hakusho 2000/01*, edited by Japan Environmental Council and Asia Kankyo Hakusho Editorial Committee, p.241-247, Toyo Keizai Shinposha

KOMATSU, Kiyoshi (2000) "New International Framework for Sustainble Forest Management" *Monthly OISCA*, May 2000, p.12-13

YAMANE, Masanobu (2000) "Recent State of China-Russia Boarder Timber Trade" *Mokuzai Joho Magazine*, September 2000, p.5-9

YAMANE, Masanobu (2001) "Forest Degradation and Natural Forest Protection Program: Recent Situation of World's Timber Trade(China 2)" *Green Power Magazine*, Mar. 2001

YAMANE, Masanobu (2001) "Increasing China's Log Import From Russia: Recent Situation of World's Timber Trade(China 1)" *Green Power Magazine*, Feb. 2001, p.6-7

5. Lectures at Workshops and Seminars

FY1998

Date	Titles	Lecturers	Place
Jun. 7, 1998	"Socio-Environmental Impact of the Proposed Copper Mine in Equador" Spring Gathering of the Society of Environmental Sociology (the Society of Environmental Sociology)	Yoichi KURODA	Ashio Community Hall/Ashio
Jun. 28, 1998	"Global Forest Issues: View from a NGO Activist" Study Group on Development and NGOs	Yoichi KURODA	Kokugakuin University/Tokyo
Jul. 11, 1998	"Natural Resources Development and Import in the Post War Japan and Social Ecological Conflicts in Overseas" International Labor Research Center's Monthly Study Meeting (International Labor Research Center)	Yoichi KURODA	Hosei University/ Tokyo
Oct. 29, 1998	"Analysis of Long Term Impact of Forest Fire" JANNI's Serial Lectures	Martinus NANANG	Senior Work Tokyo/ Tokyo
Nov. 18, 1998	"Tree Planting, Is It Good or Bad ?" People's Forum 2001 Lectures on Environment (People's Forum 2001)	Yoichi KURODA	Bunkyo Civic Center/ Tokyo
Nov. 20, 1998	"GIS Application on Nature Park Management: Case Study on Deer Habitat Evaluation at Tanzawa Mountain in Kanagawa Prefecture" The Third Bio Region Section Meeting for the GIS Study	Masanobu YAMANE	Shonan Village Center/Hayama
Nov. 27, 1998	"Supporting Measures for the Participation of Local People for Forest Management" Second IGES International Workshop on Forest Conservation Strategies for the Asia and Pacific Region (IGES, Global Industrial and Social Progress Institute(GISPRI))	Kiyoshi KOMATSU	National University of Singapore/ Singapore
Dec. 5, 1998	"Asia Regional Workshop on Underlying Causes of Deforestation and Forest Degradation" Underlying Factors of Indonesian Forest Resources Dependency in the Post War Japan	Yoichi KURODA	Anyer/Indonesia
Dec. 6-10, 1998	"Adaptive Strategy & Socio-Cultural Change in Forest Resource Scarcity" Workshop on Community-Based Forest Management (JANNI-LBBPJ)	Martinus NANANG	Samarinda/ Indonesia
Dec. 18, 1998	"IGES Research Project on Forest Conservation Strategies for the Asia and Pacific Region" The Sixth Northeast Asia and North Pacific Environmental Forum Workshop	Masanobu YAMANE	Yueyang, Hunan Province/China
Jan. 18-22, 1999	"Underlying Factors of Overseas Forest Resources Dependency in the Post War Japan" Global Workshop on Underlying Causes of Deforestation and Forest Degradation	Yoichi KURODA	San Jose/Costa Rica
Mar. 2, 1999	"Addressing the Underlying Causes of Deforestation and Forest Degradation in Far East Russia" Seminar on Far East Russia Forest Conservation Strategies (IGES, FOE Japan, Global Environmental Forum)	Masanobu YAMANE	Shonan Village Center/Hayama

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Date	Titles	Lecturers	Place
Sep. 7, 1999	"Presentation on External Constraint on Local Participation in Forest Management in Indonesia" The Third IGES International Workshop on Forest Conservation Strategies for Asia and the Pacific Region (IGES)	Martinus NANANG	The University of Tokyo/Tokyo
Sep. 7, 1999	"External Constrains on Participation of Local People in Lao P.D.R." The Third IGES International Workshop on Forest Conservation Strategies for Asia and the Pacific Region (IGES)	Kimihiko HYAKUMURA	The University of Tokyo/Tokyo
Sep. 8, 1999	"Outline of Brain Storming Forum on IFF and the Convention on Forest" The Third IGES International Workshop on Forest Conservation Strategies for Asia and the Pacific Region (IGES)	Kiyoshi KOMATSU	The University of Tokyo/Tokyo
Dec. 20, 1999	"Situation on Negotiation of a Convention on Forest" Working Group on Sustainable Utilization of Living Resources (Association on Environmental Policy and Law)	Kiyoshi KOMATSU	Commercial Law Center/Tokyo
Feb. 16, 2000	"IGES Strategic Study on Siberian Forest Conservation" The Seminar on Forest Conservation in Siberia (GEF, FOE-Japan)	Masanobu YAMANE	Global Environment Information Centre / Tokyo

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Date	Titles	Lecturers	Place
Apr. 1, 2000	"The Response of Local People through the Forest Conservation Policy in Lao P.D.R.: Case Study of National Bio-Diversity Conservation Areas" The 111th Japanese Forestry Society (The Japanese Forestry Society)	Kimihiko HYAKUMURA	Nippon University/ Fujisawa
Jun. 29-30, 2000	"Forest Loss in the Asia-Pacific Region" IGES-LIPI Workshop on Forest Conservation: Developing Strategies for Indonesia and the Philippines(Lembaga Ilmu Pengetahuan Indonesia(LIPI), IGES)	Masanobu YAMANE	LIPI/Jakarta/ Indonesia
Aug. 2, 2000	"Cause of Forest loss in Asian and Pacific Region" IGES-NUOL Workshop on Forest Conservation: in Lao P.D.R. and Vietnam(Faculty of Forestry, National University of Laos(NUOL), IGES)	Masanobu YAMANE	NUOL/Vientiane/Lao P.D.R.
Sept. 19, 2000	"Towards Sustainable Forest Management in the Russian Far East: Strategic Recommendations Based on IGES Studies" International Workshop on Transition to the Sustainable Forest Management Strategy in the Russian Far Eastern Ecoregion in the 21 Century(Khabarovskiy Krai Administration, Economic Research Institute(ERI), Far Eastern Representative of World Wildlife Fund(RFE-WWF), Forest Trends, Far Eastern Forestry Research Institute, Friends of the Earth Japan, Ecodal, IGES)	Masanobu YAMANE	ERI/Khabarovsk/ Russia
Sept. 19, 2000	"Towards Forest Conservation Strategies in the Asia and Pacific Region: Outline and Outputs of IGES Forest Conservation Project" International Workshop on Transition to the Sustainable Forest Management Strategy in the Russian Far Eastern Ecoregion in the 21 Century(Khabarovskiy Krai Administration, Economic Research Institute (ERI), Far Eastern Representative of World Wildlife Fund (RFE-WWF), Forest Trends, Far Eastern Forestry Research Institute, Friends of the Earth Japan, Ecodal, IGES)	Masanobu YAMANE	ERI/Khabarovsk/ Russia
Sept. 19, 2000	"Forest Loss in the Asia-Pacific Region" International Workshop on Transition to the Sustainable Forest Management Strategy in the Russian Far Eastern Ecoregion in the 21 Century (Khabarovskiy Krai Administration, Economic Research Institute (ERI), Far Eastern Representative of World Wildlife Fund (RFE-WWF), Forest Trends, Far Eastern Forestry Research Institute, Friends of the Earth Japan, Ecodal, IGES)	Masanobu YAMANE	ERI/Khabarovsk/ Russia
Sept. 19, 2000	"Current State of Timber Trade from the RFE to Asia-Pacific Region" International Workshop on Transition to the Sustainable Forest Management Strategy in the Russian Far Eastern Ecoregion in the 21 Century (Khabarovskiy Krai Administration, Economic Research Institute (ERI), Far Eastern Representative of World Wildlife Fund (RFE-WWF), Forest Trends, Far Eastern Forestry Research Institute, Friends of the Earth Japan, Ecodal, IGES)	Masanobu YAMANE	ERI/Khabarovsk/ Russia

Jan. 16, 2001	"Outline of 1st-phase Research Outputs from IGES ST Sub-team" 4th International Workshop on Forest Conservation Strategies in Asia and the Pacific Region	Masanobu YAMANE	The University of Tokyo/Tokyo
Jan. 17, 2001	"Enhancing Community Participation in Forest Management: A Reference to Some Indigenous Communities of East Kalimantan" 4th International Workshop on Forest Conservation Strategies in Asia and the Pacific Region	Martinus NANANG	The University of Tokyo/Tokyo
Mar. 13, 2001	"The Causes of Recent Forest Degradation in the Russian Far East" The 3rd Seminar on the Forest Conservation Strategies in the Far-East Russia(Friends of the Earth Japan, Global Environmental Forum, IGES)	Masanobu YAMANE	Earth Partnership Plaza/Tokyo
Mar. 16, 2001	"Study on Participatory Forest Management of National Conservation Forest in Lao P.D.R." Presentations on FASID Research Fellow Program (Foundation for Advanced Studies on International Development(FASID))	Kimihiko HYAKUMURA	FASID/Tokyo
Mar. 28, 2001	"The Issues on Participatory Forest Management in Lao P.D.R.: Case Study on Conservation Forest" The Workshop on the Implecation of Decentralization on Natural Resource Management and Conflict Resolution in Indonesia (World Bank Institute(WBI), FASID, Bogor Agricultural University)	Kimihiko HYAKUMURA	Bogor/Indonesia

6. Participation in Committees outside of IGES

FY1999

Hosting organization	Name of the committee	Participant from IGES	Term of office
Environment Agency of Japan	CDM Committee	Yoichi KURODA	The whole year

FY2000

Hosting organization	Name of committee	Participants from IGES	Term of office
Faculty of Forestry, National University of Laos	Visiting Researcher (Survey on Biodibersity In Lao P.D.R.)	Kimihiko HYAKUMURA	Aug. 21-Sept. 20, 2000
Forest Development Technological Institute	Committee on Urgent Countermeasures for WTO's Next Round	Masanobu YAMANE	Jun. 2000-Mar. 2001
The National Museum of Ethnology	Joint Researcher (Applied Anthropology of the Geo-Environmental Problems)	Kimihiko HYAKUMURA	Apr. 1, 2000-Mar. 31, 2001

7. Field studies

FY1998

Date	Purpose	Place	Participants from IGES
Aug. 6, 1998	Meeting on Research Cooperation between IGES FC LA Team and APCEL	National University of Singapore (APCEL)/ Singapore	Hiroji ISOZAKI
Aug. 9-25, 1998	Survey on Underlying Causes of Deforestation and Forest Degradation in Far East Russia	Khabarovsk/Russia	Masanobu YAMANE
Aug. 24-Oct. 6, 1998	Survey on Forest Management by the Bahau Sa' People in East Kalimantan, Indonesia	Matalibaq Village (East Kalimantan)/Indonesia	Martinus NANANG
Nov. 29-Dec. 6, 1998	Supporting Preliminary Research for the Legal System of Lao P.D.R.	Vientian/Lao P.D.R.	Kimihiko HYAKUMURA
Nov. 29-Dec. 7, 1998	Preparatory Research on Legal System Related to Forest Conservation in Lao P.D.R. and Vietnam	Vientian, Hanoi/Lao P.D.R., Vietnam	Kiyoshi KOMATSU
Mar. 9-17, 1999	Source Material Collections about Technical Development and Technical Transfers for Developing Country	Vientian/Lao P.D.R.	Kimihiko HYAKUMURA

FY1999

Date	Purpose	Place	Participant from IGES
May 3-14, 1999	Collecting Information on Framework on Forest Conservation at International Level by Attending the Third Meeting of Inter-governmental Forum on Forest	Geneva/Switzerland	Kiyoshi KOMATSU
May 6-31, 1999	Field Research on Participatory Forest Management in the Site	Muara Begai (East Kalimantan Province)/ Indonesia	Martinus NANANG
Jun. 9-18, 1999	Field Research on Russia - China Timber Trade	Heirongjiang, Beijing/China, Primorskiy/Russia	Masanobu YAMANE
Jul. 2-30, 1999	Hearing the Bio-diversity Conservation from Department of Forestry, Donors Pre-Field Study on Forest Management in Phou Xang Hae National Bio-diversity Conservation Area	Vientiane Municipality, Savanakhet Province, Phou Xang Hae National Bio-diversity Conservation Area/Lao P.D.R.	Kimihiko HYAKUMURA
Aug. 2-5, 1999	Collecting Information on Situation of Negotiation toward Convention on Forest by Attending "Costa Rica- Canada Initiative East and Southeast Asia Regional Meeting"	Kuala Lumpur/Malaysia	Kiyoshi KOMATSU
Oct. 2-26, 1999	Field Research on Participatory Forest Management in the Site	Muara Begai Village (East Kalimantan Province)/ Indonesia	Martinus NANANG
Oct. 31- Nov. 15, 1999	Field Research on the State of the Forest Policy in the Russian Far East	Khabarovsk, Vladivostok/ Russia	Masanobu YAMANE
Jan. 9-Feb. 10, 2000	Field Study on Forest Management in Phou Xang Hae National Bio-diversity Conservation Area	Phou Xang Hae National Bio-diversity Conservation Area/Lao P.D.R.	Kimihiko HYAKUMURA
Jan.31-Feb.11,2000	Collecting Information on Framework on Forest Conservation at International Level by Attending the Forth Meeting of Inter-governmental Forum on Forest	New York/U.S.A	Kiyoshi KOMATSU

FY2000

Date	Purpose	Place	Participant from IGES
Jul. 1-31, 2000	Fieldwork on Political Ecology of Local Forest Management	Tanjung Jaan village, West Kutai Distric(East Kalimantan)/Indonesia	Martinus NANANG
Aug. 21-Sep. 20, 2000	Field Research on Participatory Forest Management	Phou Xang Hae National Biodiversity Conservation Area/Lao P.D.R.	Kimihiko HYAKUMURA
Sep. 21-Oct. 2, 2000	Research on Recent Forest Policy	Khabarovsk/Russia	Masanobu YAMANE
Oct. 31-Nov. 11, 2000	Research on New Forest Policy	Beijing/China	Masanobu YAMANE
Jan. 20-Feb. 19, 2000	1) Negotiation on Collaboration between IGES FC and Indonesian Ministry of Forestry, Indonesian Institute of Science (LIPI), and Center for Social Forestry Mulawarman University 2) Fieldwork on Political Ecology of Local Forest Management	1) Ministry of Forestry and State Crops, Indonesian Institute of Science, Center for Social Forestry Mulawarman University 2) Tanjung Jaan village, West Kutai District, East Kalimantan/Indonesia	Martinus NANANG
Jan. 22-Feb. 21, 2001	Negotiation of the Future Research Cooperation with the Forestry Sector of Government in Lao P.D.R. Field Research on Participatory Forest Management in the Site	Department of Forestry, National University of Laos (Faculty of Forestry), Savannakhet Provincial Agriculture and Forestry Office, Phou Xang Hae National Biodiversity Conservation Area/Lao P.D.R.	Kimihiko HYAKUMURA

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