IGES International Workshop on Forest Conservation Jul. 1998

IGES International Workshop on Forest Conservation Strategies for the Asia and Pacific Region 21–23 July, 1998

Institute for Global
Environmental Strategies

IGES International Workshop on Forest Conservation Strategies for the Asia and Pacific Region

July 21(Tue.) - July 23(Thu.), 1998
Hayama, Kanagawa, Japan

Organized by
The Institute for Global Environmental Strategies

Contents

Greeting

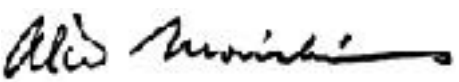
I would like to express my gratitude to you for your participation in the IGES International Workshop on Forest Conservation Strategies for the Asia and Pacific region.

Forest conservation is a key issue which the international community now faces. The present situation needs to be improved in view of the strong correlation between deforestation, decreasing bio-diversity and global warming. Forest conservation is given great importance in Agenda 21 and documents that followed. IFF(Intergovernmental Forum on Forest) is engaged in an effort to reach international consensus on forest conservation under CSD. In response to this trend, IGES has set-up a forest conservation project as its 1 st phase project.

This research project aims to prepare international strategies for conservation and sustainable management of forests in Asia and and the Pacific region. It intends to propose necessary supporting legal measures and policies, and determine basic elements to be included in world forest strategies based on analysis and examination of various forests including boreal forests.

The research activities begun in April. During the prior preparatory phase before April, we already became aware of the importance of exchanging information and experiences with other researchers and NGOs in Asia. Therefore, we decided to hold this workshop to clarify the role of IGES in forest conservation, through finding out underlying causes of deforestation and forest degradation, and through investigation of actual situations and problems that the countries under study now confront.

We, the members of the IGES Forest Conservation project, are determined to present various forest conservation strategies for the Asia and Pacific region. We earnestly ask for your assistance and support of the project.



Prof. Akio Morishima
Chair of the Board of Directors
Institute for Global Environmental Strategies (IGES)

Program

Jul. 21 (Tue), 1998 Auditorium

9:30 - 9:45	Mr. Kazuo Matsushita: Opening remarks

Session 1: Country Reports of Underlying Causes of Deforestation and Forest Degradation

9:45 - 10:00	Yoichi Kuroda: Addressing Underlying Causes of Deforestation and Forest Degradation, NGOs Process / IGES Initiative, An Introduction
10:00 - 10:20	Germelino M. Bautista , Reflections on the Philippine Environmental Crisis
10:50 - 11:05	Coffee Break
11:05 - 11:25	Mia Siscawati: Underlying Causes of Deforestation and Forest Degradation in Indonesia : A Case Study on Forest Fire
11:25 - 11:40	Discussion
11:40 - 12:00	Amrit L. Joshi: Underlying Causes of Deforestation and Participatory Forest Management Policy in Nepal
12:00 - 12:15	Discussion
12:15 - 13:15	Luncheon
13:15 - 13:35	Pankaj Sekhsaria: Deforestation in India: Overview and Proposed Case Studies
13:35 - 13:50	Discussion
13:50 - 14:00	Break

Session 2: Timber Trade Policy for the Sustainable Forest Management

14:00 - 14:30	Jairo Castano: ITTO's Perspective on Trade and Environment
14:30 - 15:30	Panel Discussion: Perspectives on Timber Trade and Forest Conservation in Asia, Pacific-rim Region Ruperto P. Alonzo, Jairo Castano, Yoichi Kuroda, Osam Hashiramoto, Eishi Maezawa and Mia Siscawati
15:30 - 15:50	Coffee Break
15:50 - 17:35	Conclusive Discussion for Day One
18:30 - 20:00	Reception

Jul. 22 (Wed), 1998 Room 5 & Auditorium

Session 3: Discussion of Underlying Causes and NGO Regional Process

9:00 - 10:30	Additional Report, Pearmsak Makarabhirom: Deforestation Process in Thailand
10:30 - 10:50	Coffee Break
10:50 - 12:15	Exchange of Personal Research Experience and Discussion
12:15 - 13:15	Luncheon

Session 4: Political Ecology of Forest Management

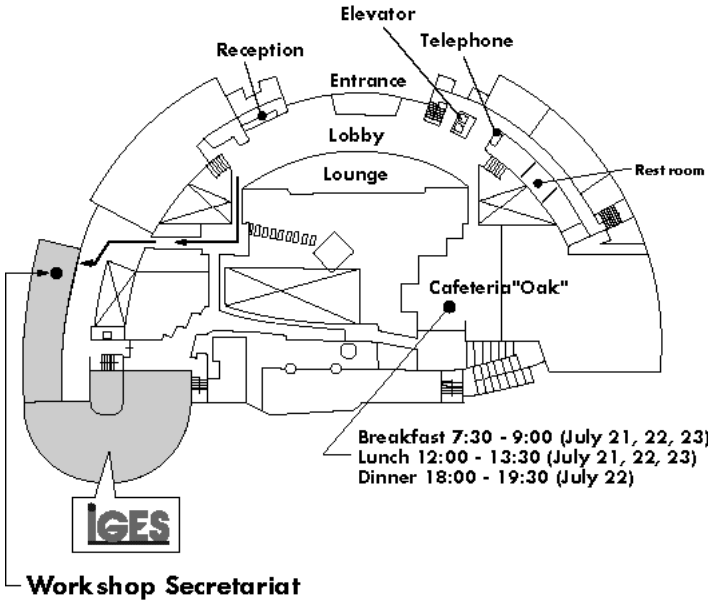
13:15 - 13:55	Sudha Vasan:Political Ecology of Timber Rights in the Western Himalayas
13:55 - 14:15	Discussion
14:15 - 14:55	Bishnu B. Bhandari: Participatory Resource Planning in Wetlands of Nepal, A Case Study of Ghodaghodi Tal
14:55 - 15:15	Discussion
15:15 - 15:30	Coffee Break
15:30 - 16:10	Sandra Moniaga: Advocating for Community-Based Forest Management in Indonesia's Outer Island: Political and Legal Constraints and Opportunities
16:10 - 16:30	Discussion
16:30 - 17:30	General Discussion
18:00 - 19:30	Dinner

Jul. 23 (Thu), 1998 Room 6

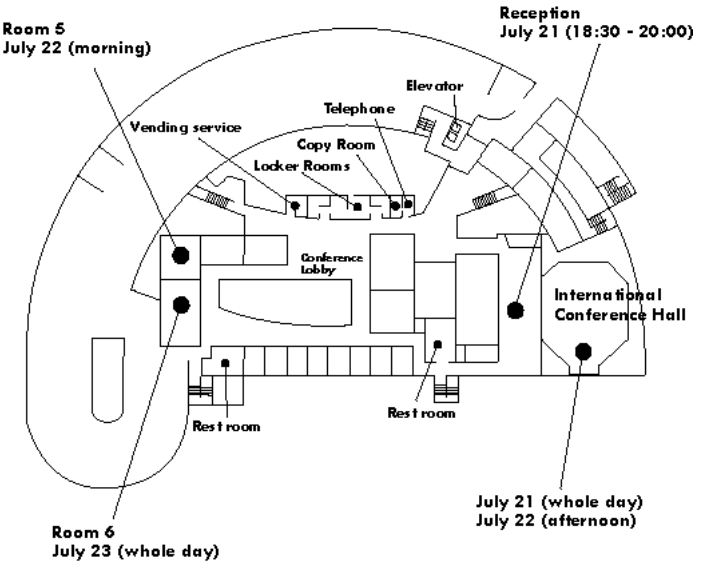
Session 5: Country Reports of Forest Policy

9:30 - 10:40	Li Xiaoping: Forestry Policy in China The Past, Present and Future
10:40 - 11:00	Discussion
11:00 - 11:15	Coffee Break
11:15 - 11:35	Khampha Chanthirath and Khamvieng Xayabouth : Outline of Forest Policy Development in Lao P.D.R.
11:35 - 11:55	Herman Hidayat: Empowering Communities through Social Forestry, Outline of Forest Policy in Indonesia
11:55 - 12:10	Discussion
12:10 - 12:20	Akio Morishima: Closing Remarks
12:20 - 13:15	Luncheon

First Floor



Conference Floor



Chairperson's Summary

Session 1
Day 1: In the morning of 21 July 1998
Country Reports on Underlying Causes of Deforestation and Forest Degradation in the Asia-Pacific Region
Chairperson: Dr. Bishnu B. Bhandari
Reporter: Mr. Martinus Nanang

Summary of the Session

1. Mr. Yoichi Kuroda presented an overview of efforts to address underlying causes of deforestation and forest degradation which included background, goals and objectives, NGO initiatives and major projects. He pointed to increased crises and conflicts facing forests globally, failure of the UNCED and IPF to meet this challenge, and the need to treat root causes as the focal points of any environmental agenda. The goals and objectives of NGO/IGES initiatives are (1) to address underlying causes through case studies, in-depth studies, and regional and global workshops, (2) to raise public awareness on underlying causes, as well as (3) to build partnerships for solutions. The main activities include regional workshops and global workshops (Costa Rica, Jan 1999 and IFF 3 in Geneva Jan 1999).

2. Dr. Germelino M. Bautista, director of the Institute of Philippine Culture (IPC), in presenting "the nature of environmental problems in the Philippines" emphasized that deforestation in the Philippines is related to the land tenure management system, economic status of the people, timber preference, government policy, and the limitations of the existing economic structure. Government initiatives since President Aquino include the establishment of protection areas and wildlife sanctuaries, suspension of logging licenses, ban or restriction on the sale of endangered species, delineation of ancestral land, participation of communities/democratization, promotion of equitable management, and the funding and establishment of a market-based incentive system. These initiatives have been hampered by the difficulties encountered in trying to sustain a large scale market based approach, the fact that they have been conducted on a micro-level that ignore the larger connections that a more holistic approach might address as well as being, on a whole, disconcerted.

3. In response to Mr. Herman Hidayat's question, Mr. Bautista mentioned that companies are remiss in replanting trees because the penalty is minimal. Three million ha. of land have been designated for indigenous people. Market participation is open to indigenous peoples but they have not benefited much from the process.

4. Ms. Mia Siscawati talked about deforestation and forest degradation in Indonesia where forests fall under the legal protection of the government and fire is the direct cause of deforestation. In 1997/98 million hectares of forest were burned. Other causes of deforestation are commercial plantation, transmigration, infrastructure development, mining, and logging activities. Underlying causes include the national forest land use system, state corruption, and failure of

government intervention.

5. In response to Mr. Y. Seki's question about the economic reason for deforestation Ms. Siscawati explained that exploitation of natural resources is closely related to macro and micro economic policy. In Irian Jaya, for instance, 7 million ha. of forest are to be converted to an internationally funded large scale venture. As an answer to Mr. Pankaj she said that the process by which corporations acquire land is not transparent; and open to question. The military has acquired vast tracks of land.

6. Mr. A.L. Joshi was talking about deforestation and participatory forest management in Nepal. Unlike Indonesia, the Philippines and India, community forests in Nepal are nationally regulated. The forestry staff simply administers national laws in regard to determining policies that will benefit local communities and granting forest use permits. This process was implemented in 1978 and amended in 1993/1995. The main thrust of the law stipulates that any part and any amount of forest can be handed over to local communities. The local communities in turn can establish forest priorities, determine commercial development policies, spending, establish price regulations, transportation plans as well as amendments to the existing law.

7. In response to Dr. Alonso he said that half a million hectares of forest are for production and communities are empowered to export timber. Mr. Hidayat was told in response to his question that originally community forests were on degraded land. Then it shifted to sustainable forests with watersheds and buffer zones within protected areas. Community forestry focuses on protection of land and the use of only indigenous plants.

Session 2
Day 1: In the afternoon of 21 July 1998
Timber Trade Policy for the Sustainable Forest Management
Chairperson: Prof. Ruperto P. Alonzo
Reporter: Dr. Yeo-Chang Youn and Mihoko Shimamoto

Summary of the Session

1. Mr. Jairo Castano, ITTO presented from the perspective of trade and the environment. In his presentation, he introduced ITTO, including its background, objectives, activities and accomplishments, Target 2000 and seven priority actions for the target, ITTO's concern with timber certification and sustainable forest management, market transparency as a means to achieve SFM, evaluation of their activities for SFM, and future perspectives of ITTO.

2. Panel discussion was contributed by Mr. Osam Hashiramoto(Director of Timber Trade Division, Forestry Agency of Japan), Mr. Eishi Maezawa(Forest Conservation Officer,WWF Japan), Mr. Yoichi Kuroda(IGES), Ms. Mia Sasciwati(RMI/Bioforum, Indonesia), Mr. Jairo Castano(ITTO) and Prof. Ruperto P. Alonzo(Philippines).

3. Ms. Sakuma (People's Forum 2001, Japan) commented on the ITTO's activities and policy. She criticized ITTO's orientation toward more promotion of tropical timber trade and further liberalization rather than the promotion of sustainable management of tropical forests. She questioned about the way of harmonization for different countries to the common objectives of sustainable forest management.

4. Mr. Jairo Castano agreed with Ms. Sakumo's opinion on the difficulty in harmonizing the international consensus to different country's situations.

5. Mr. Hashiramoto commented on the WTO's free trade policy of commodities including forest products. According to him, the Committee of Trade and Environment of WTO should recognize the positive and negative sides of trade liberalization in forest-based products. He also mentioned the pressure from the on-going APEC's free trade promotion trend, whose demands for the abolition of tariffs as well as non-tariff barriers on timber products would produce severer conditions for Japanese domestic forestry which may not promote real sustainability of the region's forest management.

6. Mr. Eishi Maezawa explained WWF policies especially with regard to their timber certification initiative. He argued that the Forest Stewardship Council (FSC)'s scheme is an actual performance level standard compared with the management system level standard of ISO. He talked about the important roles that Japanese consumers could play in the favor of forest products certified for supporting sustainable forest development.

7. Ms. Mia Siscawati reviewed the history of Indonesian forest destruction after 1967 mainly by timber harvesting, and some attempts for the development

of timber certification schemes by different parties in Indonesia, including multi-stakeholder process as well as industry. She stressed the importance of the democratic process in timber certification. She said that the ITTO target 2000 is too ambitious to be realized. She mentioned the potential of traditional, community based forest management in timber certification.

8. Mr. Kuroda presented a model framework, which can explain the process of forest destruction by transnational forestry corporations both in domestic and international dimensions which can serve as a parallel process. He expressed the need for development of a new kind of model, which could explain the links of direct and underlying causes and ultimately their connections to the SFM both from the quantitative and qualitative aspects.

9. Ms. Siscawati suggested that all stakeholders should be involved in review processes for the criteria of certification.

10. Mr. Joshi suggested the potential roles of community forestry as a means of better and more effective implementation for timber certification.

11. Mr. Maezawa questioned the possibility of accomplishing the ITTO Target year 2000 and the orientation of ITTA.

12. Mr. Castano agreed, to some extent, that ITTA supports the situation of producer's countries and stressed the harmonization of systems of member countries.

13. Mr. Kuroda questioned policies of the Japanese government which permit an ever increasing inflow of foreign forest resources while nevertheless there is a growing domestic forest stock in Japan allowing that European countries support domestic forestry in more direct manners such as the " De-coupling" policy.

14. Mr.Hashiramoto stressed that the Japanese forest management and ownership scale is generally too small to survive in such an international free trade regime situation, despite of the government supports.

15. Ms. Shimamoto didn't agree with Kuroda's argument that implied the absence of sufficient government support for domestic forestry communities, and she mentioned that Japanese forest management costs are actually much higher than those in, for example, the UK are.

16. Mr. Castano questioned the potential of timber certification advocated by WWF for SFM in the tropics.

17. Prof. Makarabhirom suggested the importance of local people's inputs for SFM.

18. Mr. Castano said ITTO has already incorporated participatory approaches for SFM in their member countries in tropics and that ITTO has been organizing some training courses for producers' countries on this aspect.

19. Mr. Kuroda mentioned that in many countries timber production exceeded the annual allowable cut (AAC) both in the North and the South and expressed a

need for international political efforts and wills addressing necessary changes of timber and other commodities' production and consumption patterns in the region as well as in the global level.

20. Mr. Hashiramoto commented on the limitations of ITTA, and said ITTO's target year of 2000 might be too idealistic.

21. Ms. Sakuma suggested a need to introduce some measures for controlling imports of foreign forest resources produced from unsustainable sources.

22. Mr.Hashiramoto answered that it would be impossible under WTO rules.

Session 3
Day 2: In the morning of 22 July 1998
Discussion and Conclusion of Underlying Causes, NGO Regional Process
Chairperson: Mr. Yoichi Kuroda
Reporter: Mr. Li Xiaoping

Summary of the Session

1. Dr. Pearmsak Makarabhirom explained his view that deforestation in Thailand is caused by multiple factors such as forestry and agricultural policy, including the growing teak production and agricultural plantation of such products as rubber, cassava and sugar cane. He pointed out that policies in certain sectors have resulted in wide scale destruction causing serious heavy erosion and loss of the soil. He then elaborated on the role of community forests act, coastal natural resource management, watershed protection and management, and new cabinet decision concerning on forest management in Thailand.

2. International trade, tourism, and agricultural expansion in Thailand were discussed in a historical context as leading causes for deforestation.

3. Ms. Mia Siscawati reported the conclusions from the informal meeting on the UC / NGO process held in the evening of July 21 after session two. This meeting confirmed that 1) the regional workshop in Indonesia will be held on November, 1998(and later rescheduled for December 4-6 due to fund raising reasons), 3) that those who will present case studies, guest speakers (CIFOR and others), senior government representatives, international agencies such as The World Bank, ADB, UNEP, UNDP, IFF, other interested groups and researchers will be invited for the regional workshop, as well as 4) the proposal for case studies of India, Nepal, Thailand, Indonesia and Japan was proposed.

4. In a brainstorming session for the UC case studies, Ms. Sudha Vasan stressed the importance of case studies. She suggested that researchers should select case studies that can best represent and demonstrate some common factor nation wide and that they should adopt methodology that can cover all levels and scale of the issue.

5. Mr. Yoshiki Seki presented his case study from research in the Philippines stressing historical and political perspectives. He concluded that main forces of deforestation are the exploitative management of timber licenses and pasture leases, which are owned mainly by Chinese businessmen, military and politicians.

6. Mr. Jin Satoh gave a brief presentation of his fieldwork in Thailand. He presented some conceptual framework of the land tenure system. There are national forests, of which such as protected forests and privately ownership of the forests as two main forest ownership. He argued that overlapping land ownership by government and community is widely observed and this tendency causes greater pressure on these lands. Local communities and landless

populations are getting pushed into the buffer areas of good forests, called the "rich forest, poor people paradox".

7. Ms. Mia Sicawati outlined the plan for Indonesian UC case studies. Due to time constraints, there would be no new research but input would be provided from the several different networks such as; 1) agrarian land reform, 2) mining network, 3) agricultural plantation network, 4) community forestry network, and 5) network of lawyers.

8. Mr. Pankaj Sekhsaria pointed out the difficulties in practicing a case study that can be generalized nation wide in India mentioning the large areas and diverse situation in his nation.

9. Mr. Yoichi Kuroda underlined that fund and time for the regional workshop is limited and stressed necessity to give explanations on the relation among the factors of local, national and international levels. He also pointed out the importance of case studies for Japan to compare historical perspective of forest degradation process in pre-modern Japan and its exploitation of resources overseas in the modernization and post-war period.

10. Prof. Ruperto Alonzo referred to the "Diagnostic Framework of the UC Case Studies" and suggested that its criteria could be applicable to distinguish the different situations to be chosen within one country.

11. Ms. Mia Siscawati and Mr. Yoichi Kuroda reminded that it is important for the case study participants to incorporate guidelines provided by the global secretariat and regional focal point within the diagnostic framework provided by the IPF. Because these guidelines are new to everyone, careful considerations of specific local conditions are necessary to determine how to best utilize them.

Session 4
Day 2: In the afternoon of 22 July 1998
Political Ecology of Sustainable Forest Management
Chairperson: Mr. Herman Hidayat
Reporter: Mr. Pankaj Sekhsaria

Summary of the Session

1. Ms. Sudha Vasan of Yale University in the USA presented "Rights and Relations: Political Ecology of Timber Rights in Himachal Prudish, India". She introduced "Forest Rights and Forest Management" including the general situation and ownership of forest resources in India, a story about house building, "The Anderson's Forest Settlement (1886)" which has been the basis for forest rights of Himachal Prudish. "T.D (Timber Distribution)," describing changes in increments due to increasing population, land-fragmentation, economic growth and increasing timber price. "Timber Harvest and Tree Planting in Himachal Prudish ", "Process of T.D. Sanction and Organization Structure of DFFC (Government Agency) Himachal Prudish" was also introduced. In conclusion, Ms. Vasan suggested a holistic management of natural resources, inter-sector cooperation and a greater focus on administrators before policy formulation.

2. Mr. J. Sato questioned the difference of the utilization of forest products between the villagers and common society. Prof. P. Makarabhirom asked about the definition of forest management for the community and foresters. Mr. Joshi, Nepal, inquired about implementation and policy making, and attitudes about local involvement among the people who live along flatlands. Forest exploitation during the British era of colonization, the differences in responsibilities, laws on forest practices between the villagers and officers, migrants attention to forest management, timber distribution for local people and their markets were also questioned and discussed.

3. Dr. B. Bhandari presented "Participatory Resource management in Nature Reserves, A Case Study of Ghodaghodi Tal (Lake) System in Nepal". He introduced the "Causes of Deforestation and Degrdation," "Conservation Approaches" as well as "Participatory Processes, its Advantages and Lesson Learnt".

4. Prof. Makarabhirom asked about the illegal timber trade in Nepal. Prof. Inoue asked about local forest management practices, and Sandra from Indonesia asked about how the PRA method is being used for facilitating community participation in forest policy reform. Mr. Joshi joined the discussion about the debates in parliament over empowerment of local people and allowing them to manage forest resources.

5. Ms. Sandra Moniaga from the Institute for Policy Research and Advocacy, Indonesia, presented "Politico-legal Constraints and Civil Society Movement in Promoting and Advocating the Community-Based Forest-System Management in Outer Island of Indonesia". The presentation discussed the rapid deforestation and violations of indigenous and other local peoples' rights, and evaluated the

local indigenous resource management as a "Sustainable Community-Based Ecosystem Management". The report suggests that there is no respect for indigenous knowledge natural resources management and advocates more rights be granted to indigenous people's for forest management and land use in an effort to promote a suitable community based resource management policy in India

6. Mr. Seki commented on the concept of social forestry as a method of participatory management. Mr. Sam from Vietnam commented on the difficulties of forest management and the conflicts between governments and local people. Dr. Youn from Korea suggested indigenous rights over land use must be encouraged with the support of parliament members, central government and local governments. Dr. Bhandari of IGES questioned the ability of local peoples to challenge the power of the government on forest resource management. Prof. Inoue commented that local people have to learn forest management initiatives concerning resource monitoring, managing and marketing. Mr. Kuroda commented on forest management in Indonesia regarding big companies, the role of the government and the responsibility of the international community to stem the tide that is eroding natural resources in Indonesia. Dr. Youn responded with encouraging results of research that promotes a new forest paradigm.

7. A General Discussion also chaired by Mr. Hidayat was held by the above three speakers and other participants about

- Legal issues in forest management
- Political democracy and natural resource management
- NGO's role and their participation in Forest management
- Actions for sustainable forest management through community forestry and local peoples' empowerment

Session 5
Day 3: In the morning of 23 July 1998
Country Reports of Forest Policy
Chair Person: Ms. Sudha Vasan
Reporter: Dr. Jin Satoh and Kimihiko HYAKUMURA

Summary of the Session

1. Mr. Li Xiaoping presented on the Forest Policy in China, The Past, Present and Future.

2. A participant pointed out the lack of information about local knowledge. A participant asked the reason for the closing down of small-scale factories. Mr. Li Xiaoping commented that our ancestors have developed extensive local knowledge. But, generally, people have exploited resources more than conserving them.

3. A participant asked about the place for obtainment of medical herbs. Mr. Li Xiaoping answered that scientists teach plantation techniques for herb production, instead of allowing people to exploit forest resources. They try to restrict small-scale industries since they are responsible for so many illegal dealings and consumption. Pollution created during the production process has also become a problem. That's why they try to close down factories.

4. A participant asked who monitored the plantation activity. Mr. Li Xiaoping answered that plantation is compulsory. People have to either plant or offer labor. The government allocates specific locations for planting. Another participant commented that there seems to be more of an emphasis on planting, rather than conservation. He doubted the reason that the government gave for not more often emphasis to the conservation of natural forest as well. Mr. Li Xiaoping reiterated that they have a plan to minimize the cutting of trees in the natural forest area. There is a government initiative to do so.

5. A participant asked what forest policy in China at the general level is successful. Mr. Li Xiaoping commented that for bio-diversity conservation, the establishment of nature reserves and national parks are the most effective policies. However, there are people living inside those areas. There are many other examples of successful plantation.

6. A participant asked what China's cultural appreciation towards Chinese old growth forest is and how the Chinese people's attitudes and government policy towards conserving nature including the civil society's ability to criticize the government is. Mr. Li Xiaoping answered that there has been very little international movement of forest industries to foreign countries. The demand for old growth forest is very large of course. But we cannot provide more of those domestically, though there is illegal cutting of forest.

7. Mr. Khampha Chanthirath presented on the outline of Forest Policy Development in Lao P.D.R.

8. A participant inquired about the role and system of shifting cultivation and kinds of non-timber forest products in Lao P.D.R., Mr. Khampha answered that shifting cultivation is the major cause of deforestation in Lao P.D.R.. Because of the growth in population, the cycle of shifting cultivation has been shortened. In addition, there are indirect effects of forest fire caused by shifting cultivation. They have many non-timber forest products, such as Cardamon, Ratan and some traditional medicinal plants. But they have problems in marketing them abroad.

9. Mr. Herman Hidayat presented on Empowering Communities through Social Forestry.

10. A participant suggested that a successful implementation of Shorea javanica is dependent on the Market demand and asked for the reason for the success in this place and how they implement it in other places. Mr. Herman Hidayat answered that local people have their own Market network. In this case, as a result of negotiation with a middleman, the price of Shorea javanica stays very high. If other people try to implement it to another place, it may be difficult because of land ownership.

11. Mr. Martinus Nanang commented that in other cases there is no demand at all and thus there is no market. This was my experience with a community in a remote area of East Kalimantan.

Opening Remarks

OPENING REMARKS OF IGES INTERNATIONAL WORKSHOP, FOREST CONSERVATION STRATEGIES FOR THE ASIA AND PACIFIC REGION

Kazuo MATSUSHITA
Acting Vice President, IGES, Japan

I. INTRODUCTION

Good morning, distinguished participants, ladies and gentlemen,

First of all, I would like to express my heartiest welcome to all of you for attending this International Workshop on Forest Conservation Strategies for the Asia and Pacific Region, hosted by the Institute for Global Environmental Strategies, or "IGES" for short.

My name is Kazuo Matsushita, Acting Vice-President of this institute.

I would like to talk briefly about IGES and its Forest Conservation project.

II. OUTLINE OF IGES

IGES is an international research institute which carries out policy oriented research and related activities to develop and formulate innovative policy instruments and environmental strategies for sustainable development ("Strategic Research"). The results of the Strategic Research are expected to be applied to a broad range of policy making entities, such as national and local governments, industry, NGOs and the public so that sustainable development can be achieved globally, inter alia in the Asia-Pacific Region.

IGES started its initial research activities here at the Shonan Village Center in Kanagawa Prefecture on April 1 of this year.

IGES is engaged in the following four areas:

1) Carrying out Strategic Research

2) Applying research results to policy decisions and actions

3) Training of researcher and policy makers

4) Disseminating and exchanging research information

IGES will implement six strategic research projects during its first phase of activities (1998 - 2000).

The first project is "Climate Change". This project will set forth policy tools in preparation for the COP 4 Climate Convention. It will also assist developing countries in addressing climate change issues.

The second project is on "Urban Environmental Management". This project

will present innovative ideas and models which will guide the urban environmental management policies in the next century. It will also put forth concrete strategies for environmental preservation of specific cities, in order to be incorporated in development assistance projects.

The third project is "Forest Conservation", which I will elaborate upon later.

The fourth project is "International Cooperation Environmental Education". This project aims to develop strategies to improve the quality of environmental education by presenting environmental education programs to the media, NGOs, industry, children, and educators. The fifth project is "Environmental Governance". This project will assist Asian countries in building capacity to overcome their environmental problems, and improve their policies on environmental issues.

The sixth and final project is on "a New Development Pattern". This project will redefine the quality and content of current economic development and propose a new development pattern for a sustainable society.

IGES has already built cooperative ties with 35 environmental institutes around the world. The institutes that have signed our charter include: 10 national administrative organizations, 4 international organizations, and 21 research and academic institutions. We hope to strengthen both research and personnel exchanges with these institutions.

III. OUTLINE OF THE FOREST CONSERVATION PROJECT

Needless to say, all forests are important not only for production of timber and other products, but also for conservation of bio-diversity, water generation and prevention of global warming. However, the natural characteristics of forests differ from place to places. Even for forests with the same natural characteristics, desirable management methods vary. This makes it difficult to conduct scientific and objective discussion of any alternative policies and actions based on common global criteria.

At the Earth Summit in 1992, forest conservation was recognized as a key environmental issues. Although, the Earth Summit adopted the Agenda 21 and the Forest Principles, which called for actions to prevent deforestation, it failed to convene a Forest Convention. After the Earth Summit, a number of international initiatives emerged, such as the Intergovernmental Panel on Forests (IPF), World Commission on Forests and Sustainable Development (WCFSD) and others, in order to find out possible solutions to halt worldwide deforestation and degradation of forest lands. At the Special Session of the General Assembly of the United Nations to Review and Appraise the Implementation of Agenda 21 (UNGASS), in June 1997, it was agreed that the work should continue to reach international consensus on forest conservation. The task to shape concrete action in the international community was forwarded to the Intergovernmental Forum on Forests (IFF) which was expected to finalize the direction of international solutions on this critical matter for the benefit of all human societies.

Also, at COP3 of UNFCCC held in Kyoto last December, forests were recognized as an important source of CO2 absorption. However, in my view, due consideration should also be given to bio-diversity as well as to the conditions of local communities.

Against this background, an international agreement on forest conservation has to be reached through well-balanced measures, focusing on the transcending aspects of all societies recognizing its underlying causes of these transcendence and their relations to each other. An agreement should not be based solely on the forest sector or on the direct causes of deforestation. This discussion should be carried out with a wide range participation, including government and forest related sectors, as well as local residents and NGOs.

Comprehensive study on sustainable forest management has just begun.

Our research project sets the following two goals:

1) to prepare international strategies for conservation and sustainable management of forest in the Asia and the Pacific Region, and to propose necessary supporting legal measures and policies,

2) to propose basic elements to be included in a world forest strategy based on analysis and examination of forests including boreal forests.

The following four sub-themes were selected in the first phase of the project (1998-2000).

1) Structural Analysis of Regional Forest Destruction and Underlying Causes of Deforestation and Degradation.

2) Timber Trade Policy to Support Sustainable Forest Management

3) Participatory Forest Management.

4) Legal and Administrative Supporting Measures for Sustainable Forest

IGES has started a forest conservation research project for 1998-2000 working in cooperation with three researchers, two visiting researchers, and over fifty researchers in Japan and in the Asia-Pacific region. These researchers have various fields of speciality, and come from various sector and separate countries of the Asian Pacific.

IV. THIS WORKSHOP

The Forest Conservation project of IGES aims to propose international strategies to conserve and sustainably manage forests in the Asia-Pacific region. It also aims to propose legal and policy measures to implement such strategies. We are also analyzing and reviewing the state of forests in regions other than the

Asia-Pacific region, such as the forests in the Northern region, and aim to propose basic elements to be included in global forest strategies.

Although we just began our forest conservation project this past April, we knew through our earlier activities the importance of exchanging information and experience with other researchers and NGOs in Asia. That is why we decided to organize this international workshop. We would like to clarify the role of IGES through investigating the underlying causes of deforestation and forest degradation, and through investigation of actual situations and problems that the countries under study confront now.

In this workshop, in addition to our project members, we have participants from the Forest Agency of the Government of Japan, ITTO and NGOs. Sixteen guests from nine countries have been invited to this workshop. With such diverse participants, and on the basis of your extensive knowledge and experience, I am convinced that this workshop will provide a unique opportunity to discuss the current status and direction of forest conservation in the Asian - Pacific region.

V. CONCLUDING REMARKS

In the coming three days, we are going to discuss a number of important agenda items. I sincerely hope that the discussion and debated conducted during the workshop will yield significant input for the strategic research on forest conservation.

Thank you for your kind attention and I hope that you enjoy your stay at Hayama.

Country Reports on Underlying Causes of Deforestation and Forest Degradation in the Asia-Pacific Region

ADDRESSING UNDERLYING CAUSES OF DEFORESTATION AND FOREST DEGRADATION, NGOS' PROCESS AND IGES INITIATIVE AN INTRODUCTION

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I. BACKGROUND

Alarming past and current trends in global deforestation and forest degradation document a deepening forest crisis worldwide. Asia Region has lost 95% of its frontier forests. Apart from the Mediterranean and Middle East - where all such forests have disappeared, this represents the world's greatest loss of frontier forest outside of Europe. South Asia sub-region countries such as India and Bangladesh, as well as East Asia sub-region such as China, Korea and Japan today have only small patches of their original forest. On main land Southeast Asia, most frontier forests are gone. Some remaining important isolated pockets are confined primarily to Burma, Laos, and Cambodia, where war and civil unrest until recently inhibited further development. Large amount of Asia's remaining forests are found in the insular Southeast Asia, particularly the four big island of Indonesia, including Borneo, Sumatra, Sulawesi, and Irian Jaya (West Papua). Even here, however, industrial logging has been threatening most of the accessible forests along their coasts and major rivers. More than half of Asian last remaining frontier forests are under moderate or high threat, particularly from logging and international timber trade, which are followed by oil and natural gas extraction, mining, large scale plantation development, including oil palm, transmigration schemes, large dams and other industrial development projects. These development schemes made good forests and land scarcer, and have a significant impact on indigenous communities in these outer islands whose livelihoods are deeply depend upon them.

In addition, rapid disappearance of remaining old growth forests in the Northern Hemisphere has come to be an international concern. The destruction of such forests in the Pacific Northwest of United States and Western Canada, due to industrial logging in the past decades, particularly those in the 1980`s under Reagan administration in The United States was brought to a wide public attention. Environmental movement mobilized public protests and successfully prevent many of Federal logging plans through their law suits in the federal supreme court. Endangered Species Act and " Spotted Owl" come to be the token symbol of these disputes. Even the President Clinton's efforts to solve these problems by starting with his initiative to hold " The Forest Conference" in Portland and subsequent proposal (Forest Plan) could not provide the prescription for the cure. Crisis of the old growth forests in British Columbia also generate even greater international attention, especially when 800 people were arrested in Crayquat Sound in Vancouver island. This episode was symbolized the serious dispute between forest industry and environmentalists as well as threatened first nations (North American Indigenous peoples).

Further more, after the collapse of former Soviet Union, crisis of Siberian boreal forests and its potential contribution to the worsening the global climate change became a truly global concern. A few years back in Japan, one national TV documentary film drew much attention from Japanese public on the forest destruction in Far-East Siberia. This new concern also brought more cautious approach for the environmentalists who have been involved tropical timber reduction campaigns to look at the sift of tropical timber to Siberian timber in plywood production as a raw material. Another huge boreal forest zone in Northern Canada, although it has lesser extent of public awareness and higher immediate development threats, may become a major source of the GHG emission on this planet.

II. THE UN RESPONSES- FROM UNCED TO IPF

1. UNCED Related Decisions

During the last decade, the forest crisis has received increasing attention and has prompted many initiatives by governments and intergovernmental agencies, such as: "The Tropical Forestry Action Plan(TFAP)", Chapter 11 of Agenda 21(Deforestation) and the non legally- binding "Forest Principles" (agreed at 1992 Earth Summit), The National Forest Programs (NFP) in many countries, and the regional processes to develop and apply "Criteria and Indicators" for sustainable forest management (SFM). Still, these and other responses remain insufficient to achieve significant changes and reversal of the current alarming trends. In other words, these responses were found largely ineffective for solving, or even improving these critical situations.

2. The Reason for the Failure and "Underlying Causes"

Why they were failed? A number of prominent environmentalists believe that many of the prescriptions made by governments and international agencies only dealt with the symptoms and rarely addressed "Underlying Causes" or "Root Causes". As the result, those efforts never reached truly responsible actors which may dictate that massive forest destruction continue as it is.

1) What are" Underlying Causes" of Forest Ecosystem Destruction?

Most of the agents which might promote forest destruction noted earlier were largely what we call immediate or direct causes of forest destruction. Those were merely the result of national development policy goals, or export-oriented economies driven by the current international economic conditions. Many of the national legislation with regard to forest and land use, tenure and their management decisions were heavily influenced by these broader development objectives. In addition, some of the ecologists also might find real root causes in the intensified and large scale production and consumption patterns in distance cities or in foreign consumption centers (Urban cores) with their own political, economic and financial systems. Indeed, according to some renowned archeologists and historians, it became to be apparent that there is much evidence

which shows similar courses of forest destruction as we have now, even in the ancient urban cores- periphery relationship in China, Mesopotamia, as well as Mediterranean area in some millenniums before.

Direct / Proximate causes, Indirect Causes and Underlying (Root) Causes.

Since inquiry into "underlying causes" is a new aspect of the whole sets of forest questions, there are no established explanations on what are underlying causes and what are others. Although there have been tremendous number of books and papers written about " tropical deforestation", some may find the mixture of these causes with some different characteristics in them. For example, Intergovernmental Panel on Forests (IPF) explained as follows.

Direct Causes

- Harvesting of timber, fuelwood, or games above the capacity of the forest ecosystem to replace the quantities extracted;
- Excessive selectivity of species, size and form cut;
- Overgrazing;
- Air pollution;
- Pollution of forest watercourses;
- Soil erosion within the forest;
- Anthropogenic fires;
- Depletion of biodiversity;
- Introduced disease or pest species;

Underlying Causes

- National policies;
- Failures of policy or planning;
- Insecurity of tenure;
- Absence of alternative sources of forest goods and services or substitutes for them;
- Failures of regulation or control;
- Land speculation;
- The temptation of a profitable market;
- Absence of employment;
- Land hunger;
- Displacement of populations;

- Farming failure;
- Improved accessibility;
- Displacement of Populations by other land uses;
- Greed and corruption;
- Unwise intensification of land use;

(IPF document, E=CN.17/IPF/1996/2, 13 February 1996,P13-15)

Recent WWF US's study of "Root Causes on Biodiversity Loss" utilized a more systematic explanation on a similar subject. It uses 4 different scales such as Time (Temporal), Geographical, Political and economic levels. It also utilizes 3 level of causal scales: Distant Determinants(Global Scale)- Intermediate Determinants(National Level) - Proximate Determinants(Local Level)-Environmental Change

First level Processes

Examples:

- Change in Method of Production
- Change in Living Conditions
- Change In Socioeconomic Relation / migration, land tenure

Second Level Processes

Examples:

- Change in Productive System- Expansion of Commercial crops / Industrialization

Third level Process

Example:

- Change in National and International Development Policies
- Change in National and International Markets
- It also suggested to accumulate case studies in various different places and develop conceptual models to examine their interlinkages and the degree of influences

("Root Causes of Biodiversity Loss- An Analytical Approach" Pamela Stedman-Edwards, For the Macroeconomics for Sustainable Development Program Office, WWF USA, April 1998)

For Example, a peculiar distant determinants demonstrating a cause and effect relationship is the annual number of houses being built in Japan. It is widely believed by the timber business world that it largely determine or heavily influence

the rate of logging in many key timber exporting countries, provinces in the Asia and the Pacific Rim region. Recent economic crisis in East Asia supports this belief. After the crisis and shrinking market became obvious, newspapers reported the closures of many logging camps in Canada, as well as the many of the Southeast Asian timber exporting countries.

Chain of Custody or Causalities

These analyses will not stop here, because there are many other factors which determine the numbers of annual housing start in Japan and other East Asian countries. All these potential determinants and factors in both proximate, intermediate, and distant places form what they call a " Chain of Custody" or Causalities. It is necessary to analyze their linkages and extent of influences among each other. This could be applied to other major causal relationships such as those between the trends of paper consumption, GDP and timber production. Similarly, Agriculture and plantation sectors, mining and energy resources development sectors have those complex chains of custody as well. It is apparent that it requires cross-sectoral approaches and both quantitative and qualitative analysis in order to understand those complex relationships sufficient enough to identify the strategic points for the possible solutions. In addition, historical aspects would be important to understand the development of those linkages. Thus we will be able to assess the true cause and effect relations and what should be the key points to tackle with. Major changes of domestic legislations, regulations and policies with regard to land tenure, land and resource use might be the reflection of the changes of those complex factors mainly from the out side of forest sector.

2-3. From "Intergovernmental Panel on Forests (IPF)" to " Intergovernmental Forum on Forests (IFF)"

Given the lack of progress on combating deforestation since UNCED and in order to promote and monitor the implementation of Chapter 11 of Agenda 21 and the Forest Principles, the UN Commission on Sustainable Development (CSD) in 1995, established "Intergovernmental Panel on Forests (IPF)" to address a wide range of Forest-related issues, including one element, entitled: " Underlying Causes of Deforestation and Forest Degradation". The IPF produced a final report in early 1997 containing a set of 135 "Proposals for Action" that governments have agreed to implement. This package of proposals was formally endorsed at the June 1997 UN General Assembly Special Session (UNGASS) of the implementation of Agenda 21.

As a follow-up to the IPF, at UNGASS, governments established the Intergovernmental Forum on Forests (IFF) :

(i) To promote implementation of the 135 IPF proposals for action;

(ii) To monitor such implementation

(iii) To address matters left pending by the IPF (e.g., financial resources, transfer of technology and trade and environment).

The Forum was also mandated to identify the possible elements of and work

towards consensus on international arrangements and mechanisms, for example, a legally binding instrument of all types of forests.

In the first meeting of the IFF (IFF -I) held in New York from October 1st to 3rd which defined its terms of reference of the three-year work program, participants decided to include analysis of underlying causes of deforestation and forest degradation in the program of work, "including transboundary economic forces, taking into account a historical perspective and the pressures exerted on forests by other sectors, notably agriculture in the quest for food security" ("Report Of The IFF On Its First Session" E/CN.17/IFF/1997/4, p.12, 10 Oct.1997). This issue was incorporated under Category II, related with matter left pending and other issues arising from the program element of the IPF process.

III. A JOINT INITIATIVE TO THE IFF ON ADDRESSING THE UNDERLYING CAUSES OF DEFORESTATION AND FOREST DEGRADATION

1. A NGOs Initiative

Participants in the IFF-I meeting affirmed the important role of NGOs and other major groups in the IFF process as observers on a fully participatory basis. Indeed, governments encouraged inputs from major groups in all activities under the IFF program of work. At IFF-I, NGOs announced a particular interest in contributing to the IFF deliberations on underlying causes. At one of the formal plenary sessions, a group of nearly 20 NGOs presented a joint statement expressing their willingness to contribute-with their intellectual, organizational and financial capacities-to a joint initiative on national and international underlying causes designed to help inform the IFF discussions on this topic. The NGO statement included the following elements:

(i) An offer to organize, in partnership with governments, the global workshop on national and international underlying causes referred to above. The statement invited governments and international agencies to join NGOs as partners in organizing this workshop, and suggested that the workshop could include:

- presentations by governments of their case studies using the diagnostic framework;
- proposed by IPF-with a focus on solution-oriented approaches to address underlying causes; and
- presentations by NGOs and indigenous peoples on relevant reports and case studies on this subject.

(ii) A proposal that the workshop organizers prepare a synthesized report of the results, focused on solution-oriented approaches, and that this report form the basis for a review by the IFF on the progress being made in implementing the IPF Proposals for Action on underlying causes.

These proposals put forward by the NGO-coalition at IFF-I, were welcomed

by many participants. Several governments, for example, expressed their willingness to join as partners in the process and the Costa Rican Government officially offered to host the global workshop. UNEP, the lead agency on underlying causes within the Interagency Task Force on Forests also expressed strong interest in cooperating with the process.

More specific ideas on the project were discussed at an informal meeting held during IFF-I among representatives of governments, NGOs and intergovernmental agencies who showed interests with the initiative. Subsequently, an Organizing Committee was formed to help advance this initiative, beginning with the elaboration of a framework project proposal and preliminary fundraising efforts. A partnership of the World Rainforest Movement and the Netherlands Committee for IUCN was asked to serve as a joint global secretariat for the process.

2. Overall Approaches, Goal and Objectives

The main challenge of the project was to involve all of the main actors and stakeholders on underlying causes in a broad participatory process and to move beyond general discussion to concrete solutions and actions. A strong emphasis was put upon developing national, regional and global partnerships between governmental and non-governmental actors and IPOs aimed at developing solution-oriented approaches towards addressing underlying causes. The project sought to bring out the viewpoints of local communities and other major groups and ensure that local visions and priorities would be fully taken into account in future proposed actions. For this reason, there was a strong emphasis on the regional preparatory process in the overall project.

Presently, there is a regional process in every continent (Latin America, North America, Africa, Asia, Oceania and the Pacific, Former USSR-countries=CIS and Europe) as well as specific workshop for indigenous peoples which will discuss and further elaborate upon the results of the regional processes.

3. Regional Preparatory Process

This regional process began in the spring of, 1998, and the dates and locations of regional / indigenous peoples organizations workshops have been decided as followed:

CIS region :	July 29 , Krasnoyarsk, Siberia
Oceania :	September 28-29, Fiji
North America :	October 1-2, Winnipeg, Canada
Latin America :	October 8-10, Santiago, Chile
Africa :	October 26-28, Accra, Ghana
Asia :	December 4-6, Bogor or North Sumatra
Indigenous Peoples :	January 1999, Quito, Ecuador
Global Workshop :	January 18-22,1999, San Jose, Costa Rica

In order to carry out these preparatory processes, workshop, brainstorming sessions and internet-facilitated dialogue process are being conducted. The preparation and collection of case studies on underlying causes in the various regions will form an essential element of the regional process. It should be ensured that valuable existing case studies and other, generic in-depth studies are being incorporated in the over-all process. All important stakeholders from governmental, non-governmental and indigenous people's organization are encouraged to undertake such studies and to participate the process.

Through workshops and other activities, these case studies and additional, generic in-depth studies on specific topics, will be presented and analyzed in order to identify:

(i) Commonalties among underlying causes at the national, regional and international levels;

(ii) The main obstacles to addressing the specific underlying causes in each region;

(iii) General solution-oriented approaches to address these obstacles, including various political, legal, economic, financial, social and institutional mechanisms which can be used to address" causative chains"; and

(iv) Practical policy reforms and other specific measures to address these underlying causes.

4. Asian Regional Process

1) Joint Focal Points

In the earlier steering committee for this initiative, Mia Siscawati from Bio Forum Indonesia and Yoichi Kuroda from the Institute for Global Environmental Strategies(IGES) were appointed as joint regional focal points in order to facilitate the process.

2) Preparatory Process

Due to the large diversity of the perspectives in Asia, we decided to organize various preparatory processes. For example, it is necessary to deal with many different languages in order to reach out to various stakeholders in the region, national NGOs process need to be facilitated wherever possible. Thus far, NGOs and a government from some countries expressed their interest in joining the process. Included among these countries are India, Nepal, Bangladesh, Indonesia, The Philippines, as well as Japan and Korea. 5 case studies will be funded by the global secretariat and we will seek for more funds to support some additional studies from other key countries as well as in-depth studies with regard to this region.

3) Thematic Discussion for In-Depth Studies and the Synthesis Report

We are planning to initiate an inter-net facilitated discussion forum on certain key themes which relate to the underlying causes discussion. Number of key areas are need to be discussed in order to create common understandings about these

potential underlying causes and key actors / factors, inter alia, on trade and environment, production and consumption patterns, the impact of international financial institutions such as IMF, The World Bank and Asian Development Bank, export credit agencies (Export-Import Banks, and others), international debts and Structural Adjustment Policies (SAPs), the role of transnational corporations (TNCs), and others(See Box 1-2).

4. ABOUT THE IGES WORKSHOP

This is the first IGES`s Workshop on Forest Conservation since IGES officially began. The purpose of this workshop is to discuss some key themes for the IGES forest conservation program to shape our strategic research. Although most of the subjects have some relationship to underlying causes, the first 3 sessions are planned for the relevant NGOs and researchers to discuss how this regional process should be prepared and implemented.

The first session is designed to discuss some selected country studies, namely, from Indonesia, Philippines, Nepal and India.

Reports from NGOs and researchers will be presented. Session 2 will be a panel discussion on "Trade and Environment". Trade provides us some real linkages between what`s happening in forests and what`s happening in the consuming countries and in the large cities. An ITTO expert will present a paper on this subject and a panel discussion with NGOs and a representative from Japanese government.

The third session is designed for general discussion on this subject, including discussions for some methodological questions on the underlying causes studies.

5. REMAINING QUESTIONS FOR FUTURE DISCUSSIONS

Although bulk of studies has been made by their investigations did not necessarily are not necessarily elucidate underlying causes.

It is necessary for us to clarify the differences between proximate or direct causes and indirect and underlying (root) causes. In addition, it is required to understand the linkages on all these causes, that is, what we call " Chain of custody" as implied in the IPF Proposal for Action. In addition, deforestation and forest degradation must be considered as a historical process so that historical analysis would be able to provide the basis for the in-depth analysis. Further more, thorough examination is necessary on trade and environment, particularly in terms of forest quality or degradation aspect.

Cross- sectoral examination, such as the relations between plantation development and northern consumption and production patterns must be scrutinized. From my understanding, for example, logging in the "frontier forests" as defined by World Resources Institute and the state of the international timber trade may have much deeper linkages than those opinions which appeared in various trade-environment related official documents, but this subject has not yet thoroughly studied(See, "The Last Frontier Forests-Ecosystems & Economies on the Edge", Dirk Bryant, et.al.,WRI 1997). Finally, underlying causes of forest

degradation and deforestation in the developed countries or the Northern temperate and boreal zones need to be clarified which may show some historical aspects of international linkages. Various determinants and factors in these countries including the "Chain of Custody" need to be examined in detail in this context.

REFLECTIONS ON THE PHILIPPINE ENVIRONMENTAL CRISIS

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I. THE NATURE OF FOREST PROBLEMS IN THE PHILIPPINES

The Philippine forest is clearly manifested in its denuded mountains and eroded and unproductive slopes, and the conditions of human poverty in the midst of a deteriorating natural ecosystem. Over this century, the Philippines had lost about 15 million hectares of forest land. By 1996, the country was left with only 5.49 million hectares of lands with some forest vegetation. Deforestation has not only reduced the stock and biodiversity of flora and fauna, it has also contributed to a set of off-site impacts, like drying up of some mountain creeks during the summer month, the increasing occurrence of forest fires, groundwater depletion, coral reef damage and its effect on the stock of fishery resources.

II. UNDERLYING FACTORS OR CAUSES OF DEFORESTATION PROBLEMS

The following explanations has traced environmental problems to:

1) the absence of tenure, management, and valuation of the natural resources;

2) the economic status, time preference, and present income-maximizing interest of resource users and industries;

3) government policies in support of the growth of the natural resource-based industries, and

4) the limitations of the existing economic structure and the weak enforcement and developmental capacities of government.

III. APPROACHES AND POLICY RESPONSES TO ENVIRONMENTAL PROBLEMS

The government adopted two general approaches to environmental management: community-based forest management (CBFM) and market-based incentive (MBI) system. These two approaches reflect the debates since the 1970s and 1980s with regards to 1) the role of the State in the economy, 2) democratization, people's participation and empowerment; and 3) growth with equity, and sustainable development. The rise of private voluntary organizations (PVO), non-governmental organizations (NGOs) affirmed the presence of individual and community initiative. It demonstrated the growing dispersal of political and economic power and underscored the fact that development is no longer the prerogative of the State.

IV. COMMUNITY- BASED FOREST MANAGEMENT AND MARKET-BASED INCENTIVE SYSTEM

The Community-Based Forest Management is an effort to promote the participation of the forest and coastal communities in the market. The objective of more equitable access to resources is further justified by the view that if formal access rights or a secure tenure is granted to communities residing close to the resources, they will responsibly undertake sustainable forest management activities. Forest-dependent communities are said to be its most appropriate front line managers and stewards. Since its inception in 1989, the program has grown from a pilot area of 47,572 hectares to about 3 million hectares in 1996. A market-based incentive (MBI) system consists of various types of payment instruments, like charges, taxes, performance bonds, as well as refunds, credits, and tax exemptions. In contrast to the traditional regulatory framework which imposes standards, mandated pollution-control technologies, and rules of conduct, these market-based instruments change the cost of production and profit associated through a particular technology, leading producers and polluters to weigh the net benefit of a new technology or production arrangement.

A foremost limitation of the CBFM and MBI approaches to environmental management is their scale of operation. Both programs are basically applied at the micro level. CBFMs are scattered in patches all over the country. Some of the communities under the program face the threat of unsustainability due to limited financial resources or lack of alternative employment opportunities.

Concretely, government has implemented environmental programs highlighting in different degrees the democratic, participatory, equitable, or technically sustainable components of resource management. In their implementation, conflicts may arise. Whether a more integrative umbrella program, applicable to a wider area can be achieved will spell the difference between effective management of resources in the Philippines or scattered success stories in an overall context of failure.

UNDERLYING CAUSES OF DEFORESTATION AND FOREST DEGRADATION IN INDONESIA: A CASE STUDY ON FOREST FIRE

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I. INTRODUCTION

For several months started in July 1997, an area of South-East Asia stretching from Thailand and Philippines to Malaysia and Irian Jaya has been covered in smog, caused by vast forest fires on the main islands of Indonesia. The fires created ecological, social and economical problems. For humans, the smog has caused illness and deaths from respiratory diseases, along with hunger, shipping accidents and misery for the 70 million people living in affected areas. This paper will first look at ecological, economic, and social impacts of forest fires, the causes including intermediate causes, secondary causes and underlying causes. It will then discussed on link between forest fire and underlying causes of deforestation and forest degradation in Indonesia.

II. THE INDONESIAN FORESTS: AN OVERVIEW

Indonesia possesses one of the largest areas of tropical forest in the world. In fact, Indonesia possesses very rich biodiversity in its forest cover, with over a dozen major forest formations. The natural diversity and distribution of forest formations in Indonesia are a function of primary factors: rainfall regime; elevation; and soils (Dick, 1991). The Indonesian islands have a tropical maritime climate that is strongly controlled by the Indian Ocean to the west and south and the Pacific Ocean to the north and east. Mountains over 2500 m are common in most regions, and Irian Jaya boasts both the highest point between the Himalayas and the Andes (Mt. Puncak Jaya at 5002 m). At the local level, the most important influence on vegetative cover is the nature of the soil. The physical and chemical properties of a soil depend largely on the characteristics of the parent materials from which it was derived, local climate, and age as a function of the length of time it has been exposed to the destructive weathering actions of climate. These environmental factors have combined to produce a rich Indonesian forest mosaic, ranging from evergreen rainforest to savanna woodlands, and tidal mangrove to sub-temperate montane and sub-alpine forests.

III. FOREST LAND USE POLICY: AN OVERVIEW

Since having independence, all Indonesian natural resources controlled by the State (The Constitution of 1945, Article 33). Referring the Basic Law, the Basic Forestry Act No. 5/1967 stated that all Indonesian forests are claimed to be State Forest Land. Following the Basic Forestry Act, Forest Land Use Policy

(referred as TGHK) was established under Government Regulation No. 33 in 1970 and formalized in a set of Minister of Agriculture Decrees in 1980 and 1981. The deadline completing Forest Land Use Policy (TGHK) designations was 1985. Bureau of Planning of the Ministry of Forestry declares the width of Indonesian state forest is 140 million hectares comprising 113.8 million hectares of permanent forests and 26.6 million hectares of convertible forests. Based on Forest Land Use Policy, the permanent forest is categorized into: 1) production forest (64.3 million hectares); 2) protection forest (30.7 million hectares); 3) natural conservation area and nature preserved forest (18.8 million hectares); 4) convertible forest (26.6 million hectares). But nowadays forested permanent forests is 91.7 million hectares in width comprising 51.3 million hectares of production forest, 24.8 million hectares of protection forest, 15.3 million hectares of nature reserve, and 19.8 million hectares of convertible forest (Ministry of Forestry, Directorate General of Forest Protection and Natural Conservation, 1997).

IV. INDIGENOUS COMMUNITY-BASED FOREST RESOURCE MANAGEMENT SYSTEMS

The Indonesian forests have been well managed and protected by local communities since millennia through strong traditional community-based forest resource management, which use traditional knowledge and traditional law systems. Many researchers resulted that the practice of indigenous community-based forest resource management systems in Indonesia has existed for centuries among people who live near the forests. They continues to exist today in Central and East Kalimantan where swidden agriculture farmers of Dayak manage simpukng fruit agroforests, rattan agroforests areas, and Lembo agroforests area (in East Kalimantan) that mimic natural forest; in West Kalimantan where the Dayak manage tembawang (Dipterocarp agroforests).; in Lampung, Sumatra where Krui people manage damar agroforest areas that also mimic natural forest; in Bali where Tenganan people manage mixed protection and production agroforests area; and in West Java where Badui and Kasepuhan people manage their mixed protection and production tree garden through traditional agroforestry system. These practices are different from management by government agencies or industrial firms by being generally smaller-scale, more decentralized, and oriented towards a diverse mix of consumption, market and cultural needs.

V. FOREST FIRES IN INDONESIA

Fires have been burning out control on several Indonesian islands during 1997 and still being continued of this year. Main centers of the disaster were Kalimantan (Indonesian Borneo), Sumatra and Irian Jaya, others also reported from Sulawesi and Java. Up to two million hectares of forest and non-forest land had already been burnt.

The fires are not new problem for Indonesia. There was a big forest fire on the island of Borneo which burning for several months during 1983. It was at the

time thought to be the biggest forest fire in history took place in Borneo. Combined effects of fire and drought destroyed 25,500 km2 of primary and secondary forest and a further 7,500 km2 of settlement areas. Kutai National Park was virtually destroyed by the fire, and in some Dipterocarp forest areas left unburnt by the fire, 70 percent of the bigger trees died of drought (Leighton, M and N. Wirawan, 1986). Since then, the cycle of forest fires in Borneo appears to be increasing and fires were reported to be larger than ever before, during 1994, creating such a smoke haze that flights out of Kalimantan had to be cancelled for long periods.

Table 1. Forest Fire in Indonesia

Forest Fires (main reas)	Year	Affected area in ha
Kalimantan/Sumatra	1982/83	3.5 - 3.7 million
Sumatra/Kalimantan	1986	~ 1 million ha
Kalimantan/Sumatra	1991	~ 500.00 ha
Kalimantan/Sumatra	1994	300,000 ha
Kalimantan/Sumatra/ IrianJaya/Java/Maluku/ Sulawesi	1997	1.7 - 2 million ha
East Kalimantan	1998	so far 283,000 ha

Source : Bobsien A. and Hoffmann E. (1998).

VI. FIRES IMPACTS

The fire has had an enormous series of side effects on ecology, economy and socio-culture which occur in a local regional and global scale.According to Bobsien and Hoffmann (1998), besides the immediate impacts there are many follow-up impacts which will only unfold their full effects in medium and long-term (see Table 2) after discussion on social impacts.

1. Ecological Impacts

Missed-use and over-use of fire as a cheap method of land clearing has caused massive changes to the vegetation of large areas in Indonesia. Fires in non-adaptable-to-fire forests can result in long-term or permanent change of vegetation cover, even more forest can be lost altogether and replaced by other vegetation. In Kalimantan in many places of original dipterocarp forests are already replaced by alang-alang grasslands through repeated burnings (Bobsien and Hoffmann, 1998). Total number of alang-alang grasslands in Indonesia which has been predicted are around 11 million hectares (Mudhyarso, pers. comm. 1998). These phenomena emerged due to all environmental media in forests such vegetation,

soil, water and area are affected through forest fires which then lead to the situation where the ecosystem functions are seriously affected.

Forest biodiversity is endangered or lost as an immediate impact of forest fire.Number of tree species is likely to decline after fire. In total approximately five percent of trees in Indonesia are already currently classified as globally threatened (WWF, 1997). Indonesia as one of six mega-biodiversity countries in the world which has a comparatively high amount of endemic plant and wildlife species, has been facing problem with increasing threatened species due to over-exploitation of forest resource and the species distinction will furthermore increase through the forest fires. The fires damaged habitat, feeding ground and roaming areas of wildlife (the case of Muara Kaman Nature Reserve, East Kalimantan), they also caused change of wildlife behaviour (the case of Nasalis larvatus (Bekantan) of Muara Kaman Nature Reserve), and accelerated rate of the loss of highly endemic Black Orchid species in Kersik Luay Nature Reserve, East Kalimantan (Telapak, 1998). A million hectares of peat forest which are being converted into rice-fields under the Government One-Million Rice-Fields Project may already on fire in Central Kalimantan. CIFOR has identified the main fire problem in Indonesia as coming from a one million-hectare area of peat forest being drained for a government rice-planting project. It is also predicted that the 1983 fires still burning deep in peat (WWF, 1997). Fires in these peat forests are dangerous because the fires can go deep underground and can continue to burn - uncontrolled and unseen - for months. The contribution of tropical peatlands to the global carbon cycle is higher than those of most of the temperate zones and about 15 % of the global peatland carbon may reside in tropical peatland (RAMSAR, 1997). Fires in peatlands can make future regeneration more difficult as they kill tree roots and destroy seed banks. South East Asian countries, particularly Malaysia and Indonesia, hold to over 60 % of global resources of peatland (around 20 million ha).Five percents of the regional total were on fire at the end of 1997 (WWF, 1997).

The combined impacts of large-scale deforestation and forest fires may also contribute to ecological changes on national, regional as well as global scale.Immediate transboundary effects such as acid rain and air pollution is one problem.Other problem is Indonesia and her neighbor countries may likely be hit more frequently with greater intensity of regional droughts. Bobsien and Hoffmann (1998) explained the regional and global effects:

- The regional climate, including the hydrological cycle is closely linked to the global hydrological cycle and to global atmospheric circulation, which is the key determinant of the position and movements of tropical high-pressure areas. Large-scale biomass burning creates conditions in which future burnings is more likely, creating a spiral of further destruction. El Nino effects are likely to occur more often and more intensely. Haze reduces the sun radiation needed for primary production of plants, so the agricultural sector will suffer production losses.
- Carbon dioxide (a major greenhouse gas) generated by the 1997 fires equaled

that for the whole of Europe in one year. Such rapid destruction of carbon dioxide sinks and emission of greenhouse gases are likely to intensify the effect of the El Nino weather conditions and speed up global warming. According to Dr. Harger, Intergovernmental Oceanic Commission of UNCESCO, who has evaluated available climatic data from Indonesia since the beginning of climate data recording in the last century, El Nino has already increased its frequency and intensity. Some decades ago El Nino occurred only every 4-8 years and was less intense, however, in the last two decades the frequency of El Nino increased to 2-4 years. There is ample evidence, that El Nino could, in the future, occur every year. However, El Nino also amplified by local drought conditions.

2. Economic Impacts

Meanwhile forest fire in 1997 caused economical losses of US $ 3.5 to 7 billion from ecological impacts, hotel business, tourism, transportation, health and plantation (Elfian, 1998). A study conducted by the Singapore-based Economy and Environment Program for Southeast Asia and WWF Indonesia in October 1997 estimated financial losses - based on conservative estimates - at some US $ 1.4 billion in Indonesia, Malaysia and Singapore. This estimate did not include the tremendous loss of forest resource and damage to biodiversity. According to D. Glover, Director of the Economy and Environment Program for South East Asia, Indonesia's forest fires could cost S.E. Asia US $ 5-6 billion in short-term health-care plus losses in industrial production, tourism, timber and plantations (Jakarta Post 18.3.98).

Forest fire in 1981 damaging 60,000 hectares of forests was calculated having losses of US $ 951,000 and needed at least US $ 25,5 million to recover them. Those figures have not included economical loss on ecological values such as hydrological value, etc (Elfian, 1998). However, in 1982 / 1983 the great 'Borneo' forest fires produced economic losses of US $ 5.5 billion (Lennertz and Panzer, 1983 in Bobsien and Hoffmann, 1998).

3. Social Impacts

The smoke contains high concentrations of particulate matter and numerous chemicals that are harmful to health, especially when exposure continues over several months. In Padang, West Sumatra, the head of local health office reported that the haze his region has not only caused over ten thousand cases of respiratory tract ailments but thousands of others have complained of eye irritation and infections due to sulphur dioxide. The World Health Organization of Philippine office estimated that hospital visits for upper respiratory type problems were up 2-3 times usual levels when the smog was at its worst in Indonesia (WWF, 1997).In Malaysia and Singapore the effect on the human health was well documented when the limits of the so-called PSI (Pollutant Standard Index) was exceeded by 800 and more, with 100 PSI regarded as unhealthy limit and 300 as hazardous limit. Altogether in six Asian countries up to 70 million people were affected by haze. However, this is only a rough estimation since Indonesia has no sufficient pollution monitoring equipment (Bobsien and Hoffman, 1998).

The situation became worse for many people in East Kalimantan province due to the effects of drought and water scarcity. The author was in Samarinda, East Kalimantan for ten days in September 1997, personally experienced the serious water scarcity of the city which then led another various health problems. Social life was also seriously affected where schools, factories, and even airports had to close down for weeks. In February 1998, airport in Samarinda, East Kalimantan had to be closed for 17 days, in March 1998 airports in Central Kalimantan and North-Sumatra had to cease temporarily operation too. The risk of accidents with all kind of transport increased. On September 25 1997, A Garuda airliner carrying 222 people crashed shortly before landing at a north Sumatran airport after the pilot got confused in dense smoke, resulting in Indonesia's worst ever air disaster. On September 27, two ships collided in the Straits of Malacca, due to the smog, with 29 people lost. On October 19, a further collision between a passenger boat and tug left four people dead and a reported 21 missing, and soon afterwards a collision in thick fog on the Barito River resulted in 29 people drowning when a ferry sank. Indigenous communities who live inside and surrounding forest areas are most suffered from the fires. Before the fire came, they already had problem with access to their long standing swidden fields which have naturally regenerated but claimed as state forest land managed by private concessionaires. The fires destroyed most of the Dayak's (East Kalimantan indigenous people) income sources including rattan gardens, fruit gardens, mixed rice and crop fields, and communal forest areas which provided timber and non-timber forest products. That situation brought them to the serious food crisis situation.It became worse due to the incredible high price of food coming from other area because smoke influenced transportation system.

Cultural life of the Dayak people also affected by the damage of Dayak's community-based forest resource management system, since the system is integrated in their strong socio-cultural tradition.

VII. FOREST FIRES AS A RESULT OF DEFORESTATION AND FOREST DEGRADATION IN INDONESIA

Most of the fires are set deliberately, often illegally by commercial interests in Indonesia. Most of the fires happened in commercial plantation areas, transmigration land-clearing projects, one million rice field converted from peat-swamp forests, over-logged forests, secondary forests at production forest which are on-going managed by concessionaires, industrial timber estate areas (commercial plantation). The fires also happened in secondary forests of protection forest, nature reserves and wildlife sanctuaries, recreation forest, national parks and grand forest parks. The picture shows that forest fires in Indonesia happened in areas where deforestation and forest degradation have existed since the starting period of forest exploitation for economic and political purposes. It can be said that forest fire is also resulted from deforestation and forest degradation in Indonesia.Discussion about forest fire causes at the following paragraphs will give clear picture.

VIII. FOREST FIRE CAUSES

In a discussion paper the World Wide Fund for Nature distinguishes three categories of causes which created the forest fires in Indonesia (WWF, 1997): 1) Immediate causes include deliberately started fires, set mainly by plantation concessionaires; 2) Secondary causes include logging and conversion to more flammable species, which increase the likelihood of fire, coupled with a severe El Nino climatic effect, which may itself be intensified as a result of global climate change; 3) Underlying causes include national land use policy, government intervention failure.

1. Intermediate Causes

The Government of Indonesia has said that about 80 percent of the fires were started by commercial plantation owners, industrial estates and transmigration land-clearing projects. The Government of Indonesia has, for the first time, publicly identified suspected culprits. So far, 176 plantation timber and construction companies and transmigration scheme have been named as possible users of fire to clear land. These include a reported 43 Malaysian companies.

2. Secondary Causes

Fire risk is increased dramatically by the conversion of natural forests to rubber, oil palm and timber plantations, and by the logging of natural forests which opens the canopy and dries out the ground cover. Plantations are drier and trees are more spaced that natural tropical moist forest, thus supporting circumstances for fire to spread. Facts also mentioned that fires burned most easily in secondary forest. Selective logging destroys much of the moist undergrowth and the closed canopy that reduces the likelihood and impact of forest fires in natural forests. Drainage for agriculture such existed in one million hectare of rice field, also increase risks of fire.

3. Underlying Causes

All secondary causes above which increase fire risk such forest land clearing to large rice field areas, commercial plantations, logging are caused by national forest land use policy which allocate certain numbers of forested lands into production forest and convertible forest. Widespread corruption has caused and flourished widespread illegal practices in the Indonesian timber and plantation industry. Structural collusion between government officials and companies is one reason of high transaction cost for companies which then lead to breaking the law by forest companies such doing illegal logging, manipulating forest assessment report for the purpose of forest land use change, etc. Government intervention failure in encouraging (by subsidies) of timber estate development and of inefficient domestic pulp and paper industries. The intervention has led to the massive forestland clearing for timber estates using deliberate fires. Since newly established timber estates are still premature in term of providing raw material for domestic pulp and paper industries, it has led to the increased illegal logging and illegal re-logging of over-logged areas which increase fire risk.

IX. FOREST FIRES AND UNDERLYING CAUSES OF DEFORESTATION AND FOREST DEGRADATION IN INDONESIA

Deforestation and forest degradation can be attributed to many different causes. Some causes operate directly on the forest itself and are often easily recognizable in the field: these are referred to as "direct causes". Behind these direct causes, however, may lie a whole sequence of causes, each more indirect or remote than the one which precedes it; these are referred to as "underlying causes" (CSD, 1996). It has been identified that some of direct causes of deforestation and forest degradation in Indonesia are commercial plantation, transmigration, infrastructure development, mining, logging and fire. Previous discussion on this paper regarding ecological impact showed contribution of fire as direct cause of deforestation and forest degradation. The following sub-chapter focuses on the linkage of some underlying causes of deforestation and forest degradation in Indonesia, which are forest land use policy including logging, timber plantation, and conversion into big-scale agroindustry land, transmigration, and mining.

1. Indonesian Forest Land Use Policy - The Way towards Forest Fire

Primary rainforests which have not been undisturbed do not usually burn due to high moisture, and there are no natural causes for forest fires such as lightning. Indigenous forest dwellers have sophisticated land-use and forest resource management skills which are highly adapted to the sensitive environment. But when primary rainforests are greatly altered by activities such as logging, mining, conversion into big-scale agricultural land (e.g. agroindustry land), plantations, and settlement areas, these land-use changes influence many ecological characteristics.Many aspects of the misuse and mismanagement of rainforests in Indonesia have become subject of researches, NGO campaigns, public and political debate, but the results are quite far from success concerning the goal of achieving better protection of indigenous communities and rainforest ecosystems. International conventions, scientific programs and public/political debate excluded the issue of increased risk of forest fires. The 1997 Indonesian forest fires should be used as ample evidence of the misuse and mismanagement of tropical rainforests, which led to deforestation and forest degradation in Indonesia. Underlying causes of deforestation and forest degradation in Indonesia which is clearly linked with the forest fires issue need to be analyzed. For that purpose, it might be useful to divide Indonesian forest politics into three phases.

2. Logging Phase (1967 - now)

The year of 1966 was an event of political change when Soeharto - a long-power holder until May 1998 - took the power of the nation from his predecessor, Soekarno first president of Indonesia. Under His leadership, the New Order was beginning in 1967. It was also new era of forest resource management through establishment of The Basic Forestry Law of 1967 which influenced by national development policy affected by finance foreign debts.The Basic Forestry Law of 1967 constituted a legal instrument facilitating commercial access to and development of income streams from legal rights to forest resources. Article 5 of The Basic Forestry Law states all forest areas within the boundary of Republic of

Indonesia including natural resource in the areas are authorized by the government. The Basic Forestry Law is then being used as a mechanism to legitimize state claims of ownership over forest resources and to arbitrarily sanction the removal of local control from forest communities, including indigenous ones (Moniaga, 1993). Following the Basic Forestry Act, Forest Land Use Policy (referred as TGHK) was established under Government Regulation No. 33 in 1970 and formalized in a set of Minister of Agriculture Decrees in 1980 and 1981. The deadline completing Forest Land Use Policy (TGHK) designations was 1985. Based on Forest Land Use Policy, the permanent forest is categorized into: 1) production forest (64.3 million hectares); 2) protection forest (30.7 million hectares); 3) natural conservation area and nature preserved forest (18.8 million hectares); 4) convertible forest (26.6 million hectares). Until 1966 some 75 % (144 million ha) of Indonesia was covered with tropical rainforest. The common prevalence of the prized tree species Dipterocarpaceae in Kalimantan and Sumatra made Indonesian rain forest one of the most valuable in world. Large scale logging of timber began as a follow up of establishment of the Basic Forestry Law in 1967 when all Indonesian forests were declared state property.The Basic Forestry Law also followed by opening of opportunity for foreign investments in logging activities. All policies enacted during that period supported the exploitation of the Indonesian rainforest as part of national development policy mainly to finance foreign debts. During the timber boom in the 70's with the help of well-connected foreign companies Indonesia became the worlds biggest raw log exporter. Timber became the second biggest earner after oil and gas in the Indonesian economy after the oil price decrease in 1982. By 1983, 560 logging concessions had been granted on 65.4 million hectares, more than the total area of Indonesia's production forests stated in the Forest Land Use Policy. Before designation completion of Forest Land Use Policy (TGHK) in 1985 which included forest lands demarcation, it has been commonly known that logging companies operate within unclear demarcation areas.Over-logged areas within conservation areas (national parks, nature reserves) is evidence of the mismanagement. In 1980 the government changed its forest policy by introducing ban on raw log export, and promoting development of plywood industry. By the late's 80's Indonesia was the world largest plywood-producer and has achieved a 75 percent market share in the mean time. However, overestimation of forest resources, poorly managed large-scale operations, non-compliance of concessionaires to the principles of sustainable forestry, lack of law enforcement, an overcapacity in the plywood industry and meager reforestation resulted in rapid exploitation of primary forests (Hurst, 1990). After continuos short-term and profit-oriented timber exploitation, forest coverage in Indonesia had decreased to 119.3 million ha (62 %) in 1982 (RePPProt 1990) and 92.4 million ha (48,6 %) in 1983, including plantations and vas logged-over secondary forests (Bobsien and Hoffmann, 1998).WALHI, a strong environmental group, stated that only 53 million ha (37 %) primary forest are left in 1998. The deforestation rate for the time period between 1982 and 1993 has reached an incredible 2.4 million ha / year. In comparison: FAO in 1990 stated that the annual deforestation rate of tropical forests worldwide is 987 million ha (Bobsien and Hoffmann, 1998).

3. Timber Plantation Development Phase

The overall macroeconomic situation and the specific situation in the relevant policy fields created high need for policy change. Since Indonesia's oil resources will be depleted soon (~2005), and the country will then not only lose oil export revenues but will become an oil importer, the national development planners like to boost the economic performance of other sectors. Amongst other promising businesses pulp and papers as well as agrobusiness (especially tree crops) were identified to be further potential export revenues. On the other hand, in the mid 80's there was clearly visible evidence in forestry sector of an up-coming timber crisis due to over-logging. At that time industrial plants in some parts of Sumatra already suffered from raw material shortages, and in 1990 timber shortages also emerged in Kalimantan.In the initial stage the government tried to solve the problems by establishing timber estates program (to refer as HTI, Hutan Tanaman Industri). In order to resolve the dilemma, the government seemed to settle on timber estates as a scheme for providing alternative sources of wood. For this reason, three types of timber estates were proposed: a)HTI pertukangan, hardwood plantations to relieve supply shortages of construction and woodworking raw materials; b)HTI kayu energy, timber estates to supply raw material for fuelwood and charcoal production; and c)HTI kayu serat, timber estates to support the pulp, paper and rayon industry. Third type of timber estates which is pulp and paper plantation received the most attention and investment by the private sector and government since pulp and paper business is the most profitable one.Despite the originally purported goal by the government to use timber plantations to counter hardwood shortages, in practice the thrust of the timber estate scheme is creating fast-growing tree plantations to support the development of the pulp and paper industry. In 1990, the Ministry of Forestry started granting Industrial Timber Plantation Rights (HPHTI) which allow concessionaires to plant and harvest plantation timber on so-called unproductive areas of permanent production forest. Various government ministers stated that Indonesia is aiming to become the greatest supplier of paper pulp and palm oil in the world.Thus in the 90's is an enormous program is underway to convert primary forest into timber as well as rubber and oil palm plantations in Indonesia.

4. Large-Scale Oil Palm Plantation Phase

Another ambiguous governmental development program to increase export revenues is the development of tree-crop (oil palm, coffee, cocoa and pepper) plantations. Plantation development also serves the government's long standing goal of relocating people from densely populated island of Java to the outer islands (to be referred as transmigration program). Official incentives include low-cost financing for estates where 80 % of the land belongs to smallholder transmigrants and 20 % to the company. Some 35 companies are developing plantations in conjunction with transmigration. However, only the big conglomerates can afford the investment costs of setting up transmigration sites. There is a recent trend that Malaysian businessmen seek for land to establish new plantations in Indonesia. Some of the reasons are: a) Malaysia's over-aged rubber plantations and decreasing oil-palm production; b) In Indonesia land can be cleared more

easily owing to the lack of control and the Indonesian counterparts freely take out the remaining trees (Bobsien and Hoffmann, 1998).

Until 1996, Indonesia exports of palm oil products has increased 32 % since the last five years, and were worth more than $ 1 billion. Government plans call for the production of 7.2 million tons of crude palm oil by the year of 2000, with the plantation area move at 2 million hectares and the Ministry of Agriculture has announced that an additional 1.5 million hectares will be added in 1998 as part of a new policy to address the monetary crisis (CIFOR, 1998).With respect to the present economic crisis the palm oil business is very attractive, because investment needs and operation costs are in Rupiah, but export sale will return investment in dollars. The government then lifted its export ban on palm oil on April 22 1998. The integration of Forestry and Plantation into one Ministry in 1998 which support "one-roof" authorization of forest lands conversion into plantations, can be used as evidence of government ambiguous plan on plantations. Some measures of the IMF package directly concern the palm oil sector. For example, Point 39 requires Indonesia for removing "all formal and informal barriers to investment in palm oil plantation" - a requirement which is clearly detrimental to environmental concerns, because it will highly increase additional pressure from international investors to convert forest land.Point 50 of the IMF catalogue requires the government to "reduce land conversion targets to environmentally sustainable levels by the end of 1998" - a requirement, which is contradictionary to the first one, and the timing is ill-fated to prevent major forest fires in 1998.

5. Logging, Timber Plantation, Oil Palm Plantation and Forest Fires Relationship

1). Logging Case

Official report of local government office of East Kalimantan stated that total areas on 1998 fire since January 1998 are at least 489,280 ha which includes 299,846 ha of logging companies areas (60 %), 85,803 ha of industrial timber estates (18 %) (Telapak, 1998).

Logging activities in Indonesia basically have opened up forest canopies and resulted in widespread forest roads, clear-cuts and degraded secondary forests. Poor logging practices in the absence of enforcement of logging regulations caused severe damage to primary forests. The ecological impact of logging alone is severe enough to result in a significant increase of fire risk especially in times of periodically occurring El Nino droughts.In 1982/83 some 3.5 million hectares of Indonesian forests burned, including some 378,000 ha in East Kalimantan, an event that remained widely uncovered by the media. At time logging activities was in the highest peak, meanwhile timber plantation development was not a major issue in the national development planning agenda (Bobsien and Hoffmann, 1998).

2). Plantation Case

The role of timber plantation and tree-crop plantation business as a major and immediate cause for the forest fires in 1997 was officially stated by the Indonesian government. Minister of Environment stated that about 80 % of the fires were started by plantation owners, industrial estates and transmigration land-

clearing projects (see table 3). Indonesia has, for the first time, publicly identified suspected culprits. So far, 176 plantations, timber and construction companies and transmigration projects have been named as possible user of fire to clear land, despite a ban on burning during the unusually long dry season.

Large-scale plantation establishment of pulp and paper estates ((150,000 ha each) or tree crops (some of them 100 - 100,000 ha) inevitably requires bigger scale burnings. It is important to note that the monoculture softwood plantations dramatically increases the fire risk.By using fire to establish, for example, Eucalyptus plantations or Acacia plantations, such plantation themselves will hold a huge fire potential in future. It is because the plantations are drier and trees are more evenly spaced then natural tropical moist forest.

Many oil palm plantations were also identified as using fire for land-clearance in 1997. Fires were also sometimes used to deliberately blur the boundary of concessions and to acquire more lands. From 176 companies have been named as possible users of fire there are reported 43 Malaysian companies.

Table 3. Areas affected by fire during July-September 1997 and during January - April 1998

Forest Type	July-Sept. 197	July-Sept. 1997	Jan.. April 1996
Production Forests (Logging)	576,000 ha (33.7 %)	37 %	105,900 ha (42 %)
Conservation area	45,000 ha (2.6 %)		75,600 ha (30 %)
Plantation area	796,000 ha (46.55%)	43 %	71,000 ha (28 %)
Peat Swamps area	260,000 ha (15,20%)	12 %	
New Transmigration area	30,000 ha (1,70%)		
Swidden Agriculture area	3,000 ha (0,2 %)	9 %	
Total	1,714,000 ha (100%)	100 %	252,500 ha (100%)

Source: Bobsien and Hoffmann (1996)

X. CONCLUSION

Excessive forest fire is direct cause of deforestation and forest degradation in Indonesia. But evidence suggests that forest fire is also resulted from deforestation and forest degradation. Underlying causes of forest fire such as national forest land use, government intervention failure in encouraging (by subsidies) development of timber estate as well as domestic pulp and paper, and structural widespread corruption, can also be referred as some of underlying causes of deforestation and forest degradation in Indonesia.

XI. RECOMMENDATION

It is strongly recommended that actions on addressing underlying causes of forest fire which will directly relates to addressing some of underlying causes of deforestation and forest degradation should be taken by government of Indonesia immediately. Otherwise remained forest resource of Indonesia will continue to deplete, and high losses of ecological, socio-economic cost could harm current economic and financial crisis faced by Indonesia.

ACKNOWLEDGEMENTS

I would like to thank Yoichi Kuroda of IGES, Sandra Moniaga of ELSAM, Nani Saptarianingsih and Ulli Susanti of RMI, for their assistance and cooperation in preparing this paper.

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UNDERLYING CAUSES OF DEFORESTATION AND PARTICIPATORY FOREST MANAGEMENT POLICY IN NEPAL

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I. INTRODUCTION

Nepal has about 54 percent of surface area under vegetation cover. Different type of vegetation cover and other information is as follows:

Table 1: Profile of Nepal

Type of Land	Area/ number
Total Land	14.7 m. ha
Cultivated land	3 m. ha (21%)
Forest Land	5.5 m ha (37%)
Grass Land	1.75 m. ha (12 %)
Shrub Land	0.71 m. ha (5%)
Others	3.7 m. ha (25 %)
Human Population (1981)	15. 02 m.
" (1991)	19.50 m.
" (1997)	21.66 m.
growth rate (1991)	2.1 %
Literacy (1991)	39.6%
Men	52 %
Women	16 %
Livestock (1985)	6.2 m.

Source: MPFS 1989 and Central Bureau of Statistics 1996

Percentage of forest area and forest biomass in different ecological regions of Nepal is given in the table 2 below.

Table 2: Forest Area and Forest percentage in Different Ecological Regions

Ecological Zone	Forest Area (million hectare)	Percentage (%)
High Himal	3.3	22.4
High Mountains	3.0	20.5
Middle mountains	4.4	29.9
Siwaliks	1.9	12.9
Terai	2.1	14.3
Total	14.7	100

Source: MPFS 1989

Phytogeographically, Nepal is known to contain plants and animal species as found in different ecological regions. A total of 118 ecosystem, 75 vegetation types and 35 forest types have been identified. The vegetation contains more than 6,500 species of flowering plants, over 1,500 fungi species, over 3,500 species of lichens. Equally diverse is the range of fauna. It is estimated that and over 6,000 species of moth are found in Nepal.

II. CAUSES OF DEFORESTATION

Deforestation, meaning changing forests into other land use, and forest degradation, meaning deteriorating in quality of forests, are one of the biggest environmental problem in Nepal. Although not scientifically, trees have been cut from long time for different purposes like increasing agricultural area, fulfilling local demand of firewood, fodder, timber, leaf litter and agricultural implements as well as for resettlement programs; and building roads and reservoirs for hydro electric projects.

In Nepal, most of the families depend upon agriculture for their livelihood. Their agriculture is very subsistence. The main components of the subsistence farming specially in the Hills of Nepal are land, humans, livestock and forest. All these components are very inter-related with deforestation and forest degradation. For the purpose of analysis only these cause will be spelt. Out of those different causes, main causes of deforestation and degradation are explained below.

1. Agricultural Production

Deforestation in the Hills of Nepal has a long history of two hundred or more years. In the pasts, there were hundreds of independent territories in the area, now called Nepal. All Kings of those territories perused expansion of kingdom. To achieve this objective, they expanded the armies, but this led to greater demand for arable land to feed their soldiers. Mahat et. al (1987) claims that deforestation in Nepal has a long tradition that has been observed by the government since the eighteenth century. Forests, which were given to warriors as a reward, were used for agriculture to continue expansion of the army. There was also a need for growing more food when the kingdom went on expanding on the seventeenth and eighteenth century. At that time also many forest land were converted into agricultural land. In 1768, there was a royal order decreeing that all lands convertible into fields should be reclaimed and that if any homesteads were built on such land they should be removed. Presently also main basis of Hill farming is compost of leaf litter brought from the forests. On the basis of the study Mahat (1987) claims that 50 percent of the leaf litter produced by the forest are removed annually for composting. So, agricultural production is the biggest reason for forest degradation in the Hills of Nepal. This argument is also supported by Bajracharya (1983) on the basis of his study on a village in eastern Nepal.

In the Terai, deforestation has continued through the present. After control of malaria, and until 1965, the government allowed deforestation in the Terai, the southern plains of Nepal, to raise land revenue. At the same time government of

Nepal launched the resettlement program for the poor and natural disaster affected people, who had no land. So large area of forest in the Terai were opened and cleared for resettlement. At the same time government wanted to resettle the poor people, who were encroaching on the forests in many parts of the Terai. From 1964 to 1985, about 570,000 hectare of forests land in the Terai and Siwaliks has been converted for agriculture production (MPFS, 1988). Hence, agricultural expansion in Siwaliks and Terai is the biggest reason for deforestation in Nepal.

2. Firewood

In Nepal, for all household residing in the Hills and many residing in the cities, firewood was the only fuel available for heating and cooking. In cities also until 10 years ago, people could not afford kerosene, electricity and liquid petroleum gas. It is reported that firewood accounts for more than 90 percent of all wood consumption. (MPFS, 1988). However, only scattered and isolated efforts have been made so far to access the quantity and pattern of fuel biomass used by rural populations. Fox (1984) says that firewood consumption is influenced by family size, cast and season. Due to change in temperature, altitude of the village also effects the amount of per capita firewood consumption. Master Plan for the Forestry Sector estimates 75 percent of firewood come from the forest and shrub land. Intensity of firewood availability varies from location to location. Its availability is big problem in and around the cities where there is concentration of population. However, recently many households in town have switched to kerosene from the firewood.

In brief, for majority of the people the only alternative available was firewood. But the estimate of per capita consumption of firewood varies greatly from 0.1 cubic meter to 6.67 cubic meter per annum, however, the distribution is clustered around 1.0 cubic meter (Thompson and Warburton, 1988). This resulted demand of 10 million cubic meter of firewood ten year ago and 18.5 million cubic meter presently (NPC, 1994). Demand for firewood is directly related to population size and Nepal is among the world's least developed countries with a high and rising density of population. Rural population density reaches over 1,500 square kilometer of cultivated land and there are districts in the Mid Hills with even higher densities.

3. Livestock

In the Hills of Nepal animal rearing is integral part of human life. They keep animals like cattle, goats and sheep for dung, milk, meat and cash. Livestock play a major role in nutrients recycling, draft power, transportation, food and cash income during the emergency. In different altitude of Nepal, there are many species, which are used as tree fodder. Hopkins (1987) reported more than 60 species of fodder trees in Nepal and lopping of these trees to feed animals is very common.

However, there is also excessive free grazing in the forests and browsing continues as a part of traditional livestock management in the Hills. These excessive and uncontrolled grazing has also resulted serious problem by

destroying new regeneration and plantations. Forest fire is also related with livestock because many herdsmen make deliberate fire in anticipation of new tender grasses, which will be palatable to livestock.

The population of these animal in 1991/92 was 17.2 million including sheep and goats, almost equivalent to that of humans (NPC, 1994). Such large herd demands a large supply of grasses and tree fodder. Fodder is especially necessary in the winter when the grass is dormant. So, the demand for tree fodder is also a big factor in forest degradation (Bajracharya, 1983; Macfarlane. 1976; Mahat et. al, 1987). At present, local people are committed to cutting trees for fodder, firewood and other tree products for their survival. A survey on different sources of nutrients availability shows that about 50 percent of total digestible nutrients come only from the forests (Rajbhandari and Pradhan, 1991).

4. Unemployment

Unemployment also increases deforestation especially in the areas where there is market for firewood. For many people in the vicinity, going into the forests, cutting firewood and selling it in the town is the only survival alternative available. It is still surprising to see local people bringing hundreds of loads of firewood to sell in the town. This is also true for many towns in the Terai of Nepal. Similarly, a group of villagers gather and go to forest to bring timbers. The timbers sold in the towns illegally are much cheaper than the timber sold from legal channels and illegal channels.

Due to the problem of unemployment not only the firewood and timber but also other forest products like orchids are collected and sold illegally. Similarly endangered wildlife products such as hides, skins, horns, bones, musk are collected and sold illegally in different places.

Table 3: Total Digestible Nutrients (TDN) Availability from Different Sources in '000'metric tons

Ecological Zones	Cultivated Land	Pasture Land	Forest Land	Shrub Land	Others	Total	Percentage
Terai	1,132.2	28.8	333.3	0.5	1.08	1,501.9	23.0
Siwaliks	263.2	11.9	839.4	10.4	—	1,124.9	16.3
Mid Hills	539.1	169.8	1,036.9	139.2	0.6	1,886.6	28.9
High Hills	105.0	294.1	944.7	61.5	0.7	1,406.0	21.5
Mountains	21.3	482.3	89.5	22.6	0.1	615.8	9.4
Total	2,060.8	986.9	3,250.8	234.2	2.4	6,534.1	100
Percentage	31.5	15.1	49.8	3.6	0.0	100.0	

5. Tourism and Trekking:

Tourism is very popular in Nepal, which is one of the main source of income for the country. Trekking is one of the popular activity of tourists who come in Nepal. Although tourism has very positive impact in local people but their impact on forest and biodiversity is serious. Tourists follow certain tracks for their trekking depending upon the duration of trekking. Annapurna area is very famous for long trekking of two to three weeks. Similarly, other short duration trekking routes like Helambu is famous among tourists. Due to arrival of tourists, there are many small teashops, hotels and lodges in concentrated along these trekking routes. These hotels and lodges demand big amount of timber for construction and firewood for cooking and heating. As the result, the forests along these routes are heavily damaged. It was mandatory to all trekkers to take amount of kerosene necessary for their cooking, heating and lighting purposes by the government of Nepal. Although there are strict rules and regulation and mitigation programs to protect forests, deforestation and degradation still is continuing in these areas.

III. EXTENT OF DEFORESTATION

Assessment of deforestation is not possible before 1964. Because, for the first time, forest survey was carried out by Forest Resources Survey Office of Department of Forests only in 1964 on the basis of aerial photographs and forest resources maps were prepared only after 1964. In that survey, land with 10 % or more crown cover has been classified as forestland. So, it is forest degradation until crown cover is reduced to 10 percent and when crown cover is reduced below 10 % then it is deforestation. Due to the tremendous population pressure there is higher need of firewood, fodder, timber and agricultural implements, reducing density of forests and resulting wide spread forest degradation in the Hill of Nepal. A study done by Water and Energy Commission shows that percentage of crown cover is reduced significantly. Forest of the Hills which has the crown cover of more than 70 % in 1964-65 is reduced from 40% to 13% in 1978-79. Similarly in Siwaliks and Terai such forests are reduced to 12% from 41% and 37% from 44% respectively, which is indicated in the Table 4 as follows:

Table 4. Change in percentage of Crown Cover from 1964 to 1978

Region	Crown Cover					
	10-40%		40-70%		>70%	
	1964	1978	1964	1978	1964	1978
Middle and High Mountains	18	35	42	52	40	13
Siwaliks	17	11	42	77	41	12
Terai	16	7	49	56	44	37

A nationwide land use survey was conducted by Land Resources Mapping Project in late seventies. The survey was based upon 1975 satellite images and 1978 aerial photographs. This survey has also analyzed forest resources and forest resources statistics was also published. Changes in forest area of natural forests according to these surveys are as follows in Table 5:

This shows that forest area in the High and Middle Mountains has not decreased significantly. But forest degradation is wide spread in the Hills. However, the rate of deforestation is high in the Siwaliks and Terai. Form 1964 to 1978 net loss of forest area is 380,000 hectares most of which are in the Siwaliks and Terai. This result is also supported by the many analysis done by such as Water and Energy Commission (Neild, 1985) and Master Plan for the Forestry

Table 5. Change in Area of Natural Forests 1964 - 1979 (in '000' ha)

Regions	1964-65	1978-79	Area Change	Percent Change	Annual % Change
High and Middle Mountains	3,950	4,000	+50	?	0.1
Siwaliks	1,740	1,475	-265	-15	-1.2
Terai	780	590	-190	-24	-2.0
Total	6,460	6,080	-380		

Sector (HMG / ADB / FINNIDA, 1988 e). These figure are against the original misperception of continuing high rate of deforestation in the Hills of Nepal which many agencies has conceived such as (Eckholm, 1978).

FRIS has also done a National Forest Resources Inventory using satellite images and field verification. This report also shows some reduction in area of forest as well as area of woody vegetation. The Table below presents brief status of woody vegetation in 1978 and 1992 and 1996 in three regions. From above analysis, it is clear that deforestation and degradation can not be generalized for entire Nepal. Hills have the problem of degradation; and Terai and Siwaliks have the problem of deforestation.

According to the estimation of Master Plan for the Forestry Sector (HMG / ADB / FINNIDA, 1988 b), by 1985 Nepal should lost about 570,000 ha of forests most of which is in Terai and Siwaliks.

Table 6: Percentage of Woody Vegetation in Different Year

Region	1978/79	1992	1996
Eastern	44.3	37	—
Central	46	42	—
Western	30.3	—	27.3

IV. SOCIO-ECONOMIC AND ENVIRONMENTAL IMPACTS OF DEFORESTATION

Nepal has experienced a full range of the known deforestation-related problems like shortage of firewood, timber, tree fodder and medicinal plants, soil erosion, land slides, floods, siltation of lakes and reservoirs and increase in peak flow and decrease in minimum flow. Further more in some places, some additional local symptoms of deforestation are evident.

1. Decrease in Firewood Production

Firewood and timber deficit in Nepal is estimated at 2.6 million tons and 0.25 million cubic meters per year respectively. This is estimated to increase to 3.5 million tons and 1.2 million cubic meters respectively, by the year 2000, if current practices continue (Master Plan, 1988). Now it is common for many villagers to walk from morning to evening to collect a back load of firewood. Women's labor has increased by 1.13 hours per day particularly for collection of firewood, tree fodder and grasses (Kumar and Hotchkins, 1988). The ratio of firewood demand to supply is estimated as 2.3:1 in the Mid Hills and 4:1 in the drier Far-western Hills (Blaikie 1988).

2. Natural Disaster

Every year there has been landslides and floods, resulting in human and animal death and causing damage in millions of Nepalese rupees. According to Ministry of Home Affairs, in an average 300 lives are lost, 8600 homes are washed and 12,000 to 15,000 hectares of arable lands are washed away every year in Nepal by landslides and floods (NPC, 1991). These are at least a partly a consequences of deforestation.

3. Decrease in Agriculture Production

In Nepal agricultural productivity has not increased in spite of government's effort in agricultural extension (NPC, 1991). Farmers used to put composts made from dung and old animal bedding material. The amount of composts was decreased. Because, firewood is less available, both dung and leaf litters are being used to cook the food. Farmers say that the size of the corn cob and wheat grains has reduced due to decrease in fertilizers. In khet fields where farmers show four manas of seeds and used to get one muri of paddy, now they need areas with eight mans seeds to get one muri (Blaikie, 1988).

If households were able to get kerosene and chemical fertilizer, then deforestation and forest degradation might not be so clearly linked to land degradation. It is estimated that for sustainable hill farming in Nepal, more forests land is needed to get sufficient fodder and animal bedding which will ultimately used as fertilizer.

4. Decrease in Biodiversity

Loss of biodiversity is occurring at all level; ecosystem and communities are being degraded and destroyed. Species are being driven to extinct due to deforestation and other activities. Deforestation has more effected plant diversity. Even if some threatened species survive, its genetic diversity is widely reduced due to deforestation. For example, many kind of orchids are on its way to extinction. But, due to lack of baseline data magnitude of such loss is not exactly known.

5. Damage to Cultural Heritage of Indigenous People

Damage done by deforestation to the unique cultural heritage of tribal people is irreparable. Chepang tribes in the Mid Hills of Nepal used to make wooden utensils and barter those with cereals, now their way of life is forced to change either into agriculturist or laborer. Valli and Summers (1993) explain that people in the Himalayas used to take Yak and sheep to Tibet and south to Nepal for trading salt, cereal and clothes etc. Because few forests are left, local people in different trading route campsites hesitate to allow grazing for animals or give permission for firewood necessary for traders. So, it is believed that those traders have to change their life style greatly before construction of road forces a change in their life style. Valli and Summers further adds

> A caravan, traders with groups of animals carrying food stuff, burns much firewood in a day as villagers burns in a week. The caravanners pay two rupees per sheep for pasture right to DFO but destruction is much higher. They are extremely discouraged due to CF program.

Today, thousands of hectares of mountain lands are even without grass leading to extreme gully erosion. Thus deforestation is not only threatening the survival of the people of Nepal but also jeopardizing the beauty of magnificent the Himalayas. So, deforestation in Nepal results degradation of scenic beauty of the Himalayas. In long run, deforestation and forest degradation could also damage the eco-tourism of the country e.g. trekking, hiking and rafting, etc.

V. STRATEGIES APPLIED BY THE GOVERNMENT

1. MPFS Strategy

His Majesty's Government of Nepal has applied different strategies to cope

with deforestation and land degradation. Master Plan for the Forestry Sector has mentioned following strategies:

- reduce consumption of forest products which include use of energy saving devices, waste minimization, use of alternate species, research and development for reducing consumption, etc.
- increase production of fuel-wood, timber, fodder
  - by promoting community forestry, private forestry, leasehold forestry
  - by initiating intensified management of national forest
  - by giving higher priority to community forestry
- make effective harvesting and distribution by freeing internal trade and transport of timber and fuel wood from all restrictions, promoting internal market system etc.
- improve pasture and livestock management by integrated forage development program and coordinated research
- adopt decentralization policy by entrusting users for protection and management. Empowering users by means of training and extension programs
- generate employment in local level for poor and land less people from different forest development works
- promote private involvement by
  - Updating legislation
  - Reducing land tax on private forests
  - Increasing land ceiling for private forests
  - Supporting private entrepreneurs by providing technical assistance, training and extension

2. Ninth Plan Strategies

Strategies mentioned in proposed Ninth Plan (1997-2002) are as follows:

- Adopting participatory forest management by empowering local user
- Initiating ecosystem based holistic management approach
- Sustainable increase in production and poverty alleviation, not utilizing forests for non forestry purposes
- Establishing a revolving fund for forest development from 25 percent of the income received from sells of forest products.
- Strengthening inter sectoral coordination for better efficiency
- Involving private sector and non governmental organizations in forest development

3. Other New Strategies

1). People's Participation

Most of the development programs in Nepal are also related with upliftment of the poor. Almost all forest management practices effect local people. Because forest development is also going to benefit local people, they take keen interest on forest development and contribute their labor. So, people's participation is recognized as one of the very important basis of sustainable forest management. Originally more rights and responsibilities for the local people were given only in the community forestry. Later on, this idea is also incorporated in watershed management. Recently, people participation became an important integral of biodiversity conservation in conservation area management and buffer zone management. Now, local user groups are formed in watershed management, conservation area management and buffer zone management. In these user group appropriate share to woman representation is also considered.

2). Income Generation

Because, most of the villagers in Nepal are very poor and depended in natural resources, their involvement is necessary in all development programs. However, they can not contribute unless their problem of hand to mouth is solved. So, to make a real successful project, income generation must be one of the basic components of the programs. Considering this, Ninth Plan (1997 - 2002) of HMG has taken poverty alleviation as the prime objective. Hence, income generation component is included in many forest development projects wherever it is possible.

3). Involvement of NGOs

Forest and biodiversity resources of Nepal are very scattered in the country. Even endangered animals like snow leopard, musk deer etc. are found in High Mountain region. It is just not possible to mange those resources by the government alone. So, non-governmental organizations are mobilized as necessary for sustainable forest resource management. King Mahedra Trust for Conservation of Nature is a prominent national NGO involved in forest resource management in Western Nepal. This NGO is managing 7,629 square kilometer of land as Annapurna Conservation Area Project from past 11 years. Similarly, international NGOs like The Mountain Institute, WWF, IUCN etc. are involved in biodiversity conservation and sustainable forest resource management in Nepal.

4). Sector Program Approach

Involvement of many donors in the same area often creates problems due to different norms followed by different donors like additional donor employed staff, different levels of incentive etc. So, recently HMG / MFSC is giving priority for involvement of one donor in one area either in component-wise or in region-wise. DANIDA is involved in Natural Resource Management Sector Assistance Program (NARMSAP), where Community Forestry, Watershed Management, Tree Improvement Program and Institutional support components are implemented. Similarly, USAID is implementing Community Forestry, Biodiversity and Income

Generation component in Mid Western Development Region of Nepal where no other donors are working. Similarly, the World Bank is on the way to support the government managed forest resources in the Terai which is not yet managed systematically. The government managed Terai forests is one of the biggest potential financial resource of Nepal.

5). Coordination among Donors and Government

Being a small land locked country, Nepal has maintained relations with many countries and organizations in the world as its development partners. In such situation lack of coordination with donors could result inefficient use of resources and duplication of the programs. To avoid such complications MFSC has formed Forestry Sector Coordination Committee (FSCC). All donors are members of the committee, FSCC discusses problems and give advice to the government, maintains uniformity in program implementation and also avoids duplications. The FSCC meets twice every year; however, there are small working groups and sub groups which meet often as necessary.

VI. SOLUTIONS AND PROGRAMS TO SOLVE DEFORESTATION AND DEGRADATION IN NEPAL

1. Community and Private Forestry Program

As the priority was given for community forestry development program, more efforts were put for its development. Most of the donors are involved in the community forestry programs. As the result, one of the best forest legislation were enacted in Nepal empowering local forest users and by July 1998, 6,658 forest user groups were formed to mange community forests. They are managing 0.45 million hectares and 733 thousand households were involved. However, actual participation and forest areas managed by users are much more higher than the record due to poor communication information system.

In the past basic objective of community forestry was sustainable management of forests to fulfill basic need of local user only in forest products. However, recently the objective is widened to include forest based income and employment generation activities as basic need for rural life support system and conservation. So, new activities in community forestry also include management of non-timber forest products mainly medicinal and aromatic plants.

1). Initiation of Participatory Forestry in Nepal

National Forest Policy 1976: In Nepal, for the first time people's participation was thought necessary only in 1976. This is outlined in the National Forest Policy published by the Department of Forests (DoF). That policy mentioned that people's participation would be sought for protecting forests from fire, theft and abuse. This was first documented official publication in Nepal, which has envisaged people's participation in forest development. Before this document all official reports had not felt need of people's participation. Forest management was confined to forest protection through policing role.

1978 Amendment on Forest Act 1961: Two years after the publication of National Forest Policy 1976, Forest Act 1961 was amended. This amendment added clause 29 which gave, for the first time, right to government to handover parts of national forest as community forest (as called Panchayat Forest and Panchayat Protected Forests) to local people as the owners of the forests for protection, management and production of forest products for their subsistence need of firewood, timber, fodder and other forest products.

This amendment was followed by enactment of Community Forest Rules 1978 (as called Panchayat Forest Rules 1978 and Panchayat Protected Forest Rules 1978) which gave authority to Conservator of Forests to handover piece of government forest to local panchayat, a smallest elected political unit existed in villages. This rule was amended again and again to hand over forests to the group of communities who are real user in practice as explained in the table 7.

2). Background of Community Forestry Policy and Programs

With enactment of community forest rules in 1978, community forestry program was implemented throughout Nepal. In 29 hill districts, the program was implemented from the loan assistance of the World Bank with technical assistance from FAO, which covers 38 hill districts presently. In other hill districts, grant assistance was provided by the different donors which include USAID, ODA, Australian, Swiss, Germany etc.

Because, the community forest was new approach, there was absolutely no experience with the DoF. In the beginning most of the foresters were skeptical and scared thinking whether community forestry is transferring authority of DFOs to the local people. In the initial years only very poor sites such as steep slope, very dried land, highly degraded forests were handed over to the local people. However, as the time passed foresters as well as local people started realizing that community forestry is the only way to save and manage the existing forests in the hills and many parts of the Terai of Nepal as well as fulfilling the need of local people. While implementing this program big gap was identified with DoF staff to orient them towards the need of community forestry from its traditional approach of forest protection. Similarly, the gap was identified with local users on social and technical aspects of community forestry. To reduce these gaps massive training and extension programs have been implemented in all community forestry projects.

In last twenty years many technical, social, institutional and legal problems were experienced. Technical and social problems were mostly solved through training and farmer to farmer programs. Institutional problems were solved by institutional capacity building such as converting community forestry assistants into regular community oriented rangers of District Forest Office. To solve the legal problems, there were many amendments in Community Forestry Rules as well as new Forest Rules were enacted in 1995 in line with new Forest Act 1993. In summary evolution of the Community Forest Rules are explained and given below in table 7:

Table 7. Evolution of C.F. Legislation in Nepal

Subject	*1978 Rules*	*1979 Amendment*	*1987 Amendment*	*New Act 1993 and Rules 1995*
CF area benefit share % to community	not more than 125 ha (PF) 250 ha. (PAF) 40%	125 ha. 500 ha 75%	no limit no limit 100%	no limit no limit 100%
To be spent from the benefit	50% (for forestry)	50% (for forestry)	100% (for forestry)	Surplus fund for any community development
Pricing of products	not less than royalty	not less than royalty	not less than royalty	as per FUG's decision
Plan Preparation	by DFO	by DFO	by community	by community
Plan approved by	Conservator	Conservator	Regional director	DFO
Boundary	Political	Political	Political	Use practices
Management units	Panchayat (political unit)	Panchayat	User's committee under Panchayat	User Groups (assembly)
Chaired by	Elected village leader	Elected village leader	selected any body by political body	Selected by the assembly by consensus

Source: (Joshi, A.L 1997)

Main Features of Present Community Forestry Legislation

a. Any part of accessible forests can be handed over to the communities who are traditional users of the forests, if they are interested to manage the forests.

b. Any amount of National Forest can be handed over to the Forest User Groups (FUG) if they indicate that they are capable of managing the forests.

c. Conversion of national forests to community forest has priority over conversion to any other forest use such as leasehold, protected and production forests.

d. CF boundaries are fixed by traditional use practices rather than administrative boundaries.

e. District Forest Officers are authorized to recognize FUGs and hand over Forests to FUGs. This authority was vested with higher officials or the center in the past.

f. Forest User Groups (FUGs) have to manage the CF as per their constitution

and Operational Plan (OP) which are approved by the District Forest Office (DFO).

g. FUGs are autonomous and corporate bodies with perpetual succession.

h. FUGs can plant long term cash crops, such as medicinal herbs, without disturbing the main forestry crops.

i. FUGs can fix prices of forestry products irrespective of the government royalty.

k. FUGs can transport forest products simply by informing DFO.

k. FUGs can establish Forest Based Industries based on the resources available in their CF.

l. FUGs can use surplus funds in any kind of community development works.

m. FUGs can amend their OPs simply by informing the DFO.

n. Any government and non-government agency can help user groups to be organized and to manage CF.

o. FUGs can punish any members who break the rules of their constitution or OP.

p. DFOs can take community forests back from FUGs if they operate against the OP. However, the DFO must give the forest back to newly reformed FUG as soon as possible once the problem is resolved.

Source: (Joshi, A.L., 1997)

3). Achievement of the Community Forestry Program

Although community forestry program in Nepal was started in 1978 with enactment of Community Forest Acts and Rules, the initial progress was very slow. The CF Rules was amended in 1987 which compelled Village Development Committees (Village Panchayats) to implement the CF program through the user committee. There could be many user committees in one VDC. In 1989 Master Plan for the Forestry Sector was also published which gave high priority to community forestry. However, it took the speed only after reinstallation of democracy in 1990. Achievement of the Community Forestry Program until the May 1996 is given below in table 8.

By July 15 1998, 6,658 Forest User Groups are managing 0.45 million hectares and 733 thousand households were involved. World Bank study has indicated that from community forestry program additional benefit of rupees 660 per hectare per year is received. Even if the recognized community forest area is little, but there is wider impact on the areas around those community forests. From the management of these community forests, local people started getting firewood, fodder and timber as well as started generating income. The money earned by FUGs were spent for community development activities like building and

Table 8: Forest handed over to May 1996

Year	Handed over number	Area (ha)*	Household (No.)
1987/88	3	79.8	398
1988/89	34	518.84	2,732
1989/90	29	1,916.48	5,356
1990/91	54	1,949.99	5,189
1991/92	354	1,991.89	37,506
1992/93	634	3,592.14	73,303
1993/94	950	63,308.43	99,249
1994/95	1,390	*98,530.91	141,159
1995/(May 1996)	(325)	26,983.28	39,255
Not Mentioned	(1,583)	116,446.99	181,531
Total:	5,356	362,551.5	585,658

*Total Forest area of Nepal = 5.5 m. ha.

Potential CF area = 3,355 m. ha (61%)

Percent of Potential CF already handed over =11% (362,551.5 ha.)

It will take 20-30 years to handover all potential CF.

Source: (Joshi, A.L 1997)

operating schools, running classes, constructing drinking water and irrigation canals etc. So, it is seen possible that community forest could act as center for community and village based economic development.

Acharya et. al (1993) gave concrete example of involvement of women in the community forestry program in the Hill of Nepal. After comparing aerial photograph of two hill districts (Kabhre Palanchok and Sindhu Palchok) of Nepal taken in the year 1964 and 1978, Gilmour (1988) claimed that to make up for the scarcity of tree products resulting from deforestation, farmers have planted tree on their farm at the rate of 120 trees per hectare per year. However, to compensate completely for the deforestation rate, 590 trees per hectare per year were necessary.

2. National Forestry Program

For management of government owned forests, operational forest management plans were made for 14 districts and four are under process. From the implementation of these operational forest management plans, it is estimated to earn rupees 5 billion (77 million US $) as revenues to government where as costs to manage these forests were estimated as only rupees 700 million (11 million US $) in five years from 14 districts. Because benefits from these forests are much higher than its costs, sustainable management of Nepalese production forests is economically beneficial to the country. According to the WB estimate, if all Terai forest are managed, then it is expected to give additional income of rupees 810

million (12 million US $) per year over what has been local users are getting today. However, these plans could not be implemented due to lack of financial resources and sustainable management of these Terai forests is yet to be practically initiated. For implementation of these operational forest management plans, HMGN / MFSC is proposing to establish a revolving fund where 25 percent of the amount received from sell will be deposited for future forest management activities.

3. Watershed Management

Soil erosion and watershed degradation problems were very extensive in Nepal. Efforts were made to reduce these problems by establishing District Soil Conservation Offices, preparing and implementing integrated sub watershed management plans and training local people in conservation measures. Emphasis was given on biological conservation measures, however conservation by constructing structural measures using local material were also practice extensively by the farmers.

4. Biodiversity Conservation

Biodiversity Conservation is continued to be an important part of overall forest management including endangered species conservation, management of corridors and connectivity, wetland management etc. Protection of biodiversity inside protected areas was continued. Recently, management of buffer zone and conservation area are major program in biodiversity conservation with involvement of local people. In these programs local people were empowered for the management of the forest in the buffer zone and conservation areas. In buffer zone management also community forestry user group principle is applied to fulfill the need of local people. Government has also legally committed to give up to fifty percent of income from protected areas for local community development including sustainable management of protected areas and all sectors involved with communities in the buffer zone.

5. Non-Timber Forest Products

Although non-timber forest products posses great potential for income generation in the mountains, this potential is not completely tapped. World Bank study has indicated that from the cultivation of Chiraito (Swertia augustifolia) a medicinal shrub, rupees 30 thousand per hectare per year can be received. However, this area is getting increased attention in the Ninth Plan period with the objective of poverty alleviation and income generation. Almost forestry programs and projects include non-timber forest product management for employment and income generations. It has become very popular in the community forestry and private forestry program.

VII. CONCLUSION

In fact, there was severe deforestation and forest degradation in Nepal. Various reports suggest that deforestation and forest degradation, which has occurred in the middle hills, was common for last hundreds of years ago and rate

of deforestation is neither rapid nor of recent origin. However forest degradation is continuing in the Hills. In the Terai and Siwalik deforestation is wide spread legally due to government resettlement programs and illegally clearing of forest for agriculture. In general, main causes of deforestation are agricultural production, need of firewood, forage for livestock as well as local unemployment and lack of management from the government.

To cope with deforestation and forest degradation Mater Plan for the Forestry Sector and Ninth Five-Year plan has put forward many strategies. Periodic as well as annual program are being prepared and implemented according to those strategies. Out of these program community forestry program in Nepal is very successful. By July 15 1998, more that 7,000 Forest User Groups are managing 0.5 million hectares and about 800 thousand households were involved. Due to user groups management of community forests most of the artificial problems or over population related problem, at least in the Hill, have been resolved and it is progressing very fast. Quality of forests is improving in the Hill of Nepal and amount of greenery has been increasing. Community Forestry Program of Nepal is the one of the grand success in the history of forest protection and management. So, for other countries also community forestry program of Nepal, i.e. policy formulation and forest management is good example to implement as per need of the concerned people of different regions.

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DEFORESTATION IN INDIA
OVERVIEW AND PROPOSED CASE STUDIES

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I. INTRODUCTION

India is a vast country - encompassing a large canvas of habitats, and ecological niches; rich in bio-diversity and simultaneously supporting a rich, and vibrant diversity of human cultures.

The environments are as diverse as can be imagined ; from the Himalayas in the north, the long coastline touched by the Arabian Sea on the west and the Bay of Bengal in the east to the islands of Andaman and Nicobar and the Lakshadweep. From the deserts of Rajasthan and Gujarat in the west to the teak forests of Central India to the thick and towering rainforests in the Northeast. Large parts of India like most other parts of South Asia and for that matter the rest of the world were till recently covered in thick forests.

This region is probably best known for the civilizations that flourished in the valleys of its great rivers like the Ganges, the Yamuna and of course the Indus. These were civilizations that reached a high degree of sophistication, and urbanization. What are much less known are the innumerable, small, vibrant, diverse and extremely sustainable forest cultures that survived and flourished and continue to do so even today in the areas where the forests still exist?

II. LOCAL TRADITIONS AND CONSERVATION

There are several continuing examples of many such small communities; taking self propelled initiatives outside the formal structures of law and governance to protect their forests. In their endeavor to safeguard their environment and protect their forests they are often in direct conflict with powerful political and economic structures which are themselves driven by major vested interests.

The best known case of this is the Chipko movement in the Himalayas (Hegde, 1998; Weber, 1987). The villagers rallied together to save their forests by hugging the trees from the axe of the contractors who were issued licenses without the consent of the local people. Much earlier to this movement, though similar in its action is the story of the Bishnois in the desert state of Rajasthan (CSE 1984-85). The religious tenets of the community prevent them from causing any harm to any living thing. A few centuries ago a situation arose when the ruler ordered the cutting down of the trees of the area. The people of this community protested. They hugged the trees to protect them and in the process paid a very heavy price. The king's men ruthlessly chopped down the protesters before chopping down the trees. Even today the villages of the Bishnois are a pleasant sight where trees

grow all around inspite of the desert like environment and various animals like the endangered Blackbuck find freedom and safety in a people's sanctuary.

In addition, across the country there are innumerable sacred groves (Gadget, 1975; Gadget and Vartak, 1976; Induchoodan, 1991; WWF, 1996); patches of forests that have had a sacredness and sanctity attached to them for centuries. Often it is a forest dedicated to the local deity and in many places like in the western ghats these remain the only surviving examples of the rich and virgin forests that once clothed the mountains.

More recently we come across the well-documented cases where communities are taking the initiative in protecting their forests. For instance Jardhar (Kothari, 1995) is a village in the Garhwal Himalayas about 12 hours drive away from New Delhi. Here the village has come together on its own initiative to protect the forests on the hills around their village. With the help of the Delhi based environmental group Kalpavriksh they have even prepared a community register of their biological, ecological and environmental knowledge. Additionally they have a 'Beej Bachao Andolan' (Save the seeds campaign) wherein the villagers have taken it upon themselves to save the great agricultural diversity of their area and have started a seed bank on their own.

Similar is the case in the Alwar district of Rajasthan where the coordinated action of a series of villages; protecting the forests, preventing grazing, tree cutting, and building a series of small bunds across the water streams has actually brought the river Arvari back to life (Patel, 1997). The river which had over the years turned into a seasonal stream now once again flows perennially. Enthused by the initiative of the villagers the government too responded positively and schemes like those under Joint Forestry Management are being implemented in the area.

Many such initiatives, experiences and experiments are going on in the country today. These are however not necessarily the trends, but just the exceptions to a rule. There is a basic conflict of interest here. For the various small communities like the ones mentioned earlier forests mean home and are an important (and often the only) source of livelihood and survival. The same forests have a different interest for others; the government may look at it merely as a source of revenue while for industry it is only the timber or the raw materials. This results in huge, though remote controlled processes of deforestation and destruction that the locals neither understand and have absolutely no control over. However life in the great plains where most of the political and monetary muscle lies goes quite unaffected (at least immediately and directly) by what happens in these forests far away.

III. ROLE OF THE BRITISH

In recent history large-scale destruction of the forests began with the British who wished to utilize the timber and the natural resources for the expansion and continuation of the empire. An idea of the commercial onslaught on India's forests by the British has been pieced together by Gadgil and Guha (1992). Quoting from a number of sources, they show how the British navy's need for durable timber

was increasingly being met from India from teak *Tectona grandis* forests.

Vast tracks of forest were chopped to create the vast railway network that criss crosses India today. The main aim was the fast, cheap and efficient transport of inexpensive raw materials to the ports from the hinterlands of the country for export to Britain's industries and to ensure the fast movement of security forces to maintain the hold over the empire.

For instance, between 1869 and 1885, over 6,500,000 deodar Cedrus deodara sleepers were extracted from the Yamuna Valley forests in the Himalayas, which in turn was necessitated because the supply of teak and sal *Shorea obusta* from peninsular India was getting exhausted. Wood for railway sleepers and as fuel for powering the locomotives facilitated the expansion of both the railways and the British Empire.

The other major cause of deforestation immediately after independence was agricultural expansion, often state-sponsored. Much of the rich moist deciduous forests of the humid Terai region in northern Uttar Pradesh for example were cleared to provide land to immigrants from the newly created Pakistan. Most of the woodland once covering the Indo-Gangetic plains was also gradually converted to fields or grazing lands (Subramanium and Sasidharan, 1993). Indeed between 1951 and 1980, according to the Forest Survey of India (1987), over 26.20 lakh hectares (26,200 sq.kms) of forest was converted for agriculture purposes all over India.(Kothari, 1993)

IV. PRESENT SCENARIO

Many environmental historians hold the opinion that the large-scale destruction of the forests in India is rooted in the commercially oriented forest use and ownership policies of the British government and these have continued in their essence for several years even in post independence India. In more recent times it is the new policies and programs of development; rapid industrialization, urbanization and growing consumerism that has resulted in the wide-scale destruction of the forests.

In certain parts of the country; particularly the rainforest regions of the north eastern states bordering China and Burma and the remote islands of the Andaman and Nicobar, a lot of the forests have been fed into the plywood mills. Other parts of India have witnessed a spurt of large projects from big dams and thermal power projects to huge mines and massive industrial complexes. Many of these have been located in what were once thick forest areas. So these forests got drowned in the backwaters of the dam projects or got cleared for the mines or the industrial complexes.

What has been equally bad if not worse is that these projects very insensitively alienated the communities living in the forests, depriving them of their basic sources of survival, forcing them to move away; making them refugees if their own land.

With this destruction of the stake in and responsibility for the well being of the forests the people who have lived in and tended the forests for generations were forced to participate in and share the blame for destruction of the forests. This process continues even today in various forms in many parts of the country, resulting in the rapid decline in forest cover.

As mentioned earlier efforts are on to tackle these at various levels. Efforts are being made to simultaneously sensitize the govt. machinery (with its deeply entrenched colonial legacy) and to increase the confidence and involvement of the local communities in the conservation of the forests.

Another paradoxical situation has arisen recently. Though not related directly to the destruction of the forests, it still has great ramifications for the protection of India's wilderness areas. Various areas (amounting to roughly 4.5 percent of India's total geographical area) have been declared as sanctuaries and national parks to safeguard the rich wild wealth. Many local communities who lived in these forests were often moved out by force, or their accesses to the resources were curtailed in the belief that it was the best for the forest and the protection of the wild creatures. It is only now being realized that far from being useful this actually is detrimental, both, to the human communities that live here and to the forests that are to be protected and conserved. This process too has alienated a number of communities who could have otherwise been critical partners in the protection of the forests.

In very recent times there have been a number of cases where these very protected areas have been officially denotified to be handed over to larger commercial and industrial interests to mine the minerals that are found there or to set up complexes like oil refineries or cement plants, defeating in the process the very purpose of declaring the areas protected in the first place. This is a development that is strongly resented by the communities that once lived here and is also being opposed at all levels by environmental groups.

V. THE ROLE OF KALPAVRIKSH

Kalpavriksh has over the last couple of decades been involved in the above mentioned issues in various capacities and at various stages. Today one of the areas we are intensely working in are the processes of community involvement in the protection of forests; documenting already existing examples, preparing case studies and initiating processes that encourage joint management of forests and protected areas by the forest department and the local communities. A significant move has been the 'Building Bridges' dialogue where attempts are being made to bring together the diverse groups of people who are the major stakeholders in the issues related to forests. These include the local communities, government agencies like the forest department, conservationists, wildlife researches and enthusiasts and social activists. In various meetings over the last year or so many of these have come together for the first time and important common ground is being found, especially against destructive pressures by industrial and commercial forces.

As part of the Underlying Causes (UC) of deforestation case studies Kalpavriksh along with two other NGO's, Vrikshmitra (Friends of Trees) and the Parisara Samrakshana Kendra (Centre for Environment Conservation) hopes to be able to present at least 3 case studies from 3 different parts of the country comprising different forests, different social and political circumstances and different community responses.

The study sites are:

a) Gadchiroli district in Central India

b)Uttara Kannada district of the Western ghats

c) Little Andaman island from the Andaman and Nicobar islands in the Bay of Bengal

1. Gadchiroli District

Gadchiroli in Central India is one of the most forested districts in India with a predominantly tribal population. This case study is to be conducted by Mohan Hirabai Hiralal of the NGO Vrikshamitra in association with the residents of the village Mendha in the district.

1). Present Scenario

In recent years there has been an accelerated process of deforestation in the district of Gadchiroli. As in most cases it is the locals and the tribals who get blamed for the deforestation that is happening here whereas a closer look at the situation reveals that one of the major cause is without doubt policies of the government. Simultaneously the district has many tribal villages that are striving for more legal control over their forests. There is much village level self initiated forest protection committees that are attempting to regulate the unsustainable use of their forests. The case study will focus on the underlying causes of deforestation in this district and the effectivity of the local initiatives to control them. One such village is Mendha.

Legally the forests here belong to the state. Entry into and use of the forests by the locals here has been severely restricted by the various government agencies like the forest dept. At the same time however the state itself continues to carry out commercial forestry extraction and a part of the forest has been leased out to the paper industry for bamboo extraction.

2). Role of the Local Community

Mendha is a significant case because of the initiatives of the villagers, and their decisions which have contributed immensely in the conservation of the forests of the area. The village has established a very strong community organization of its own. It has various institutional structures like the Van Suraksha Samiti (VSS) or the Forest Protection Committee which takes the forest related decisions. The village has also been successful in establishing good relations with some sensitive government officials and Non Governmental Organizations and succeeded in facilitating inter-departmental co-operation among the various government

agencies working in the area.

The entire process has lead to the confidence of villagers in their own capacity to take responsibility over matters directly affecting their lives. One of the most important results of this has been the revitalization of importance of forests in the lives of the tribals and the need to protect, conserve and decide about it themselves.

In the last seven years the villagers have taken up a number of soil and water conservation programs, built a water hole for wild animals, controlled forest fires to an extent and framed regulations for the controlled extraction of biomass from the forest. They have also succeeded in stopping the indiscriminate and destructive extraction by the paper mill. They carry out daily patrolling and with the help of the Forest Department have punished those who have been caught violating the rules Forest Protection Committee (Pathak, 1998). Over the years the forest department has also recognized the work done by the villagers, and shown its appreciation by supporting the villagers against socially and economically powerful offenders.

The village has also brought its forests under the Joint Forest Management (JFM) scheme of the state government. This has not only formalized their position as the custodians of the forests but has also opened up the possibilities for negotiating benefits from the official forest related activities. In another significant move the village council has made it mandatory for all government and non-governmental agencies to seek its permission before carrying out any forest related activity in the village and the surrounding forests and this includes the powerful external commercial forces like the paper industry.

2. Uttar Kannada

Uttar Kannada is a heavily forested district in the state of Karnataka in the western part of the country. Roughly 80percents of the land here is still under forest cover. The district is unique in that it traverses five important terrestrial ecozones. From the west to the east there is the narrow coastal plain, the evergreen and moist deciduous forests of the Western Ghats, the dry deciduous forests and further east the scrublands, making it one of the important centres of biodiversity in the Western Ghats.

People have traditionally been involved in agroforestry and have maintained unique multi-tiered spice orchards dominated by betel nut (*Areca catechu*).

1). Destruction of the Forests

Forest cover in the area has been steadily coming down over the last several decades. The major causes have been many developmental projects like the paper industry, hydro projects and even a nuclear power plant. The West Coast paper mill has been responsible for the disappearance of a large chunk of forests. The mill has unfairly high subsidies and have been allowed to go on inspite of not having adequate effluent treatment facilities. They have even managed to get portions of the Dandeli Wildlife Sanctuary denotified for the purpose of bamboo extraction and continue to press for more denotifications of the protected areas.

The Supa dam was built over the river Kali in 1976. Large tracts of forests were submerged in the reservoir. The townships that were created for the government employees and for the dam also resulted in further destruction There is a proposal for a similar project over the river Sharawati but it has met with stiff opposition from the local communities. The forest department too has played a major role in forest decimation, particularly with large-scale commercial forestry operations, which are among the largest in the state.

2). Action of the Local Communities

In the late 1970's local communities got together and begun protesting against the indiscriminate destruction of the forests which had been relatively intact over centuries. They launched a movement called Appiko, akin to the popular Chipko movement of the Himalayas (Hedge, 1998). Since then various local groups have become involved in forest-related research and activism. In recent years they have also protested against coastal destruction; lobbying against major aquaculture projects, a barge mounted power plant and a huge a five star tourist resort. They have also exposed some of the harsh realities of the capital intensive Overseas Development Agency (ODA) funded JFM project in the area.

Pandurang Hegde who spearheaded the Appiko movement and is now with the Parisara Samarakshana Samiti will be conducting the case study on the underlying causes of deforestation in the district along with other volunteers individuals and groups.

3. The Andaman Islands

The Andaman islands are a special field of interest to me in particular and recently. I spent nearly four months looking at the logging industry in the islands.

1). The Local Tribes

The Andaman Islands are great interest and importance. Situated roughly 1,200 Kms from mainland India in the Bay of Bengal they are home to 4 tribal communities and an additional 2 that live in the Nicobar group of Islands. The Andaman tribes are the Great Andamanese, the Onge, the Jarawa and the Sentinelese, whereas the tribes from the Nicobar group are the Nicobarese and the Shompen .

The 4 groups that live in the Andaman Islands are of the Negrito origin and probably share a certain affinity to the other tribal groups in the region like the Semangs of Malaysia. Many theories exist of their origin but it is not yet fully clear how, why or when they came here. What is well known however is that the tribes here have been and continue to be extremely hostile even today and avoid all contact with the modern world outside. Of the 4 groups the Great Andamanese and the Onge have accepted the intrusions and contacts with the modern world (and have suffered excessively for that). The processes and forces of modern development have so destroyed them and their cultures that it is unlikely that they will be able to survive for too long as a viable group of people. In any case only 28 individuals survive of the Great Andamanese and about 100 of the Onge

(Census of India, 1995). The other 2 groups - the Jarawas and the Sentinelese have however fiercely safeguarded their identity and kept their distance.

The explanation for the behavior of the tribals lies in the history of these people. From what little is known the outside world has always treated these tribals very badly and only exploited them. The Arab traders, for example who plied their trade along these routes many centuries ago were known to have often taken these people for slaves. However the major intervention from outside came in the 1850's with the establishment of the British penal settlement for convicts from mainland India. Large tracts of forests that these tribals inhabited began to be cleared.

2). Destruction of the Forests

The establishment of the penal settlement and then independent India's resettlement and rehabilitation policy for the islands saw a huge influx of people. Thousands were brought here from mainland with the promises of land and resources. Vast tracts of forests continue to be cleared to accommodate all these people. It was then also realized that a source of employment; a source of income generation needs to be created to help these people survive here. The obvious industry thought of and promoted from the 60's has been the timber and plywood industry. Thus a situation was created wherein there was no option but to open up the forests for exploitation. Huge incentives and subsidies were offered to entrepreneurs who were willing to take the risk of establishing industry here.

This process has gone on uninterrupted for close to 4 decades now. Population too, based largely on large scale immigration has grown phenomenally adding considerable pressure on the forests and other natural resources of the islands. The results of the deforestation are clearly visible in a number of places. There is increased runoff; soil erosion is high which has choked the reefs surrounding the islands and many endemic and rare species of plants and animals are becoming rarer. Only recently has the realization dawned that the islands are a treasure house that needs to be valued and safeguarded with care.

Following this growth of awareness there has been in recent years a reduction in the official quotas of timber that can be harvested from these forests; a development being strongly resented by the industrial lobby. Consequently the private plywood industry has production facilities and capacities lying idle. In an ironic and interesting “robbing Peter to pay Pan” situation, private industry now begun importing timber from Malaysia and for the last financial year this import amounted to a substantial 25percents of the intake in the industries.

3). Fate of the Tribals

However what is extremely important in the context is the fate of the tribal communities. There has been no consideration for the fact that the first and foremost right over these forests and the islands is that of the tribals who have lived here for centuries and who would be completely destroyed if their forest home is so destroyed. Here we also have the classical case of a rich storehouse of biodiversity which could be lost even before it is comprehensively documented.

The Onge tribe for example uses a plant that recent modern research says may be highly active against the dreaded malarial parasite, Plasmodium falciparum, which causes the debilitating and often fatal malignant and cerebral forms of malaria (Kothari, 1997). Discoveries like these could change the face of medicine and benefit humankind in unimagined ways but only if the tribals are respected and their forests are protected from destruction.

4). The Onge

The Onge tribals live on the 700 odd sq. Km. Island of Little Andaman which is covered in thick evergreen forests. Like the Jarawas and the Sentinelese today, the Onge too were a hostile tribe at the turn of the century. Eventually they were befriended by the British. However they were the only group of people who lived on the particular island and this was the situation till as recently as the 1960's. Then the earlier mentioned policies of rehabilitation and resettlement of the Indian Government came into effect. Suddenly thousands of outsiders were settled here and the timber extraction operation was started in a big way. The combined effect of opening up of the island, the introduction of an alien people and culture and the destruction of the forests have devastated the extremely small community of the Onge. The community has always been a small one. Today there are only about 100 members of the Onge tribe that survive. Already vices of modern civilization like alcohol and tobacco have made deep inroads here and the exploitation of the tribals at the hands of the settlers goes on in many ways.

Policies of a government has not only initiated a powerful process of the destruction of some virgin forests it has also probably put a small viable forest community down the road to their doom.

In 1966 the Census of India report predicted that the possibility of preventing their (the Onge's) ultimate extinction seems remote of importance and significance in the case of the Onge is also the statement made in 1975 by Robert Allen who was sent to these islands by the International Union for the Conservation of Natural resources (IUCN) (Whitaker, 1985). He commented:

> "personally, I do not accept the census (1966) statement that the possibility of preventing their ultimate extinction seems remote. As a general rule, hunter - gatherer peoples have every chance of surviving as hunter - gatherers and of living well, provided:
>
> 1) they want to;
>
> 2) their economic and spiritual territory is conserved;
>
> 3) they receive appropriate medical help;
>
> 4) their numbers are in equilibrium with their environment;
>
> 5) they do not become demoralized, losing faith in their own way of life.
>
> He added:
>
> "...by economic territory I mean the full area of forest and coastal waters

used for hunting, fishing and gathering by a healthy stable population.... here is where the interests of hunter-gatherers like the Onge and the Jarawa, of peoples and governments like that of India and of conservationists coincide. If Little Andaman were declared a protected area, for use by the Onge alone, a unique area of tropical forest would be conserved, while at the same time assuring the Onge way of life. If an ethnobotanical program were also begun, studying and recording Onge plant knowledge, the Onge could be shown how much we value their environmental understanding, while the rest of the world would be shown both the potential of tropical forest plants and also how harmoniously some peoples can live in environments which at present we only know how to exploit by destroying."

More than ever it is today that these statements are of immense importance in the context of the Onge. Sadly enough if one looks at the history of the Onge and of the island of Little Andaman one realises what has happened in the last 3 decades is exactly opposite to what had been hoped and suggested by Allen.

The case study I propose envisages an in-depth look and analysis of the status of the forestry operations in the island of Little Andaman and the effect it is having on the Onge tribals and most importantly make suggestions to save the island's forest and the Onge who will otherwise be destroyed with the destruction of their forest home.

ACKNOWLEDGEMENTS

I would like to thank Ashish Kothari, Neema Pathak, Sunita Rao, Yashodara Kundaji and Sushruti Santhanam for their help and cooperation in the preparation of this paper.

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Timber Trade Policy for the Sustainable Forest Management

ITTO'S PERSPECTIVE ON TRADE AND ENVIRONMENT

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I. INTRODUCTION

The purpose of this paper is to present ITTO's view on trade and environment. The International Tropical Timber Organization (ITTO) is a commodity organization created in the early 80's bringing together countries which produce and consume tropical timber to discuss and exchange information and develop policies on all aspects of the world tropical timber economy. ITTO at present has 50 members (26 producers and 24 consumers) including the European Community, which account for over 75 percent of the world's tropical forest and more than 95 percent of the international trade in tropical timber.

The ITTO recognizes that a continuing supply of tropical timber on the world market depends on quality information about the trade and market place, efficient timber production and processing methods and sustainable forest management practices.

The relevance of the involvement of a trade-oriented organisation like ITTO in conservation is greater than thought. ITTO believes than a starting point for a sustainable timber trade is a land use policy on which sustainable forest management can firmly be based. Consequently, ITTO recognises the need for improvements in harvesting methods (specially in steep terrain), the extension of totally protected areas for nature conservation, improvements in the welfare of nomadic peoples, and manpower training and deployment for the planning, supervision and management necessary to achieve the standards of sustainability.

II. BACKGROUND

The origin of ITTO dates back to 1976 when tropical timber was proposed as a commodity to be included in the UNCTAD Integrated Programme on Commodities. The ITTA, one of the resulting commodity agreements, was finalised in 1983 and ITTO came to operation in 1986 with its headquarters established in Yokohama, Japan.

The ITTA objectives fall into three broad objectives:

- Effective consultation and co-operation between members on issues relating to the international trade and utilisation of tropical timber and the sustainable management of its resource
- Promotion, expansion, diversification and strengthening of tropical timber trade and greater market transparency
- Encouragement of reforestation and forest management, sustainable utilisation and conservation of the tropical forest and their genetic resources

The ITTA objectives were reinforced in 1990 with the adoption of the Year 2000 objective, which states that all tropical timber traded internationally by member countries should come from sustainably managed forests by the year 2000. It acknowledges that the continuity in business depends on the continuity of the resources on which the enterprise is based and sets a milestone for it with regard to tropical forests. In response to rapid developments in trade and environment issues, in particular, the watershed agreements reached in UNCED 1992, a new ITTA was adopted in 1994 and entered in force on January 1997. Under the new Agreement, objectives have been updated and refined, including those related to sustainable forest management, conservation and the environment. As a result of these comprehensive changes, the linkage between trade and environment has been given a clearer perspective within the purview of the ITTA, 1994. Indeed, the ITTA is an example of an agreement that integrates trade and environment.

The 50 country members compose the International Tropical Timber Council (ITTC), the governing body. In contrast to other international organisations, consumer and producer countries are equal partners in decision-making, policy formulation and project development. Also, environmental and trade NGOs take an active part in ITTC biannual deliberations.

The Council is served by four Committees -those of Reforestation and Forest Management, Economic Information and Market Intelligence, Forest Industry, and Management Services- established to review and monitor corresponding spheres of the Organization's operations.

III. THE IMPLICATIONS OF ITTA

The ITTA underlines clearly the recognition to the need for the trade-related objectives to be pursued in harmony with those pertaining to sustainable forest management, conservation and the environment. Indeed, the ITTA stands as one of the earliest attempts on the multilateral front at fostering a mutually supportive relationship between development and trade in tropical timber on the one hand and sustainable forest management and conservation on the other, preceding, inter alia, the Brundtland Report, 1987 and the historic United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992.

By giving conservation and trade equal importance, the ITTA brought about an unconventional type of commodity agreement. This seems strain to belief if considering that timber industry is assumed as one of the principal agents of tropical deforestation. However, for ITTO members, the notion is perfectly valid. Conservation through ecologically sound forest management can go hand in hand with sustainable development and must be pursued continuously.

Predictably, ITTO created many expectations, but it was never intended or equipped to be the total response to the dangers threatening the tropical forests.

It was certainly meant to catalyse the efforts of producer and consumer members to contribute to the solution and ITTO has certainly given significant contributions on this direction.

IV. ACTIVITIES AND ACCOMPLISHMENTS

One of ITTO's first interests was to know the extent to which the world tropical forest was being managed sustainably. This was assessed in the Study on the Status of Sustainable Forest Management, which led to the publication of the book 'No Timber Without Trees.' The findings pointed out that in 1988 little of the world's tropical forest was managed on a sustainable basis and that the methods for achieving this management tended to be quite specific to the countries.

These findings -implying that sustained yield management for timber is not, on its own, Sustainable Forest Management (SFM)- were a hard lesson to comprehend and even harder to adjust to and take on board. They certainly showed the enormous scale of the problem which ITTO was trying to tackle but, equally important, it also pointed to the solution. After all, sustainable management would ensure the continuity of the timber trade and the forest on which the trade depended.

This study spawned the development of guidelines for the practice of SFM.

Three sets of operational guidelines were developed and adopted by the Council in the early 1990's:

- Guidelines for the Sustainable Management of Natural Tropical Forest (1990)
- Guidelines for the Establishment and Sustainable Management of Planted Tropical Production Forest (1993)
- Guidelines for the Conservation of Biological Diversity in Tropical Production Forests (1993)
- Guidelines on Fire Management in Tropical Forests (1997)

These guidelines were followed by other pioneering works:

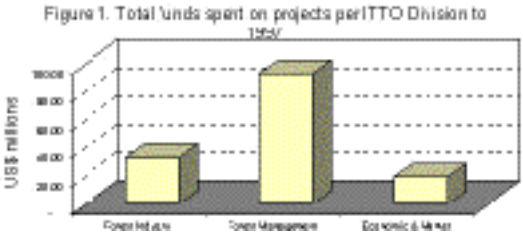
- Criteria and Indicators for Sustainable Forest Management(1991)
- Timber Certification: Progress and Issues (1997)

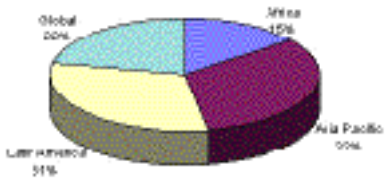
Work on the development of a definition of sustainable forest management and a set of criteria for measuring sustainable forest management that eventually led to formulation of Criteria and Indicators of SFM was initiated well before the launching of the Helsinki and Montreal processes for non-tropical forests after UNCED 1992. A Revised Version of Criteria and Indicators was finished in 1998.

Subsequently, ITTO sponsored several projects for the establishment of demonstration plantations meeting some of the Guidelines' standards; independent ITTO missions were despatched to Sarawak (1989) and Bolivia (1995) to assess forest management and offer recommendations for improvement; and

several projects have been approved for implementation in member countries with the view to enhancing capacity in managing tropical forests on a sustainable basis. While ITTO is not a development assistance agency, projects are an important aspect of the Organization's work and a primary means of assisting member countries to implement policy initiatives. Examples include pilot and demonstration projects, human resource development projects, and research and development projects. All projects are funded by voluntary contributions from member countries.

Figure 1 shows that 64 percent of ITTO total project funds has been spent on projects on Reforestation and Forest Management of tropical forest. Two-thirds of all funds have been equally distributed between Asia Pacific and Latin America (figure 2). The remaining proportion is shared by Africa and non country-specific projects, called 'global' projects, such as ITTO Guidelines on forest management.





In addition to the foregoing publications and other technical documents, ITTO also brings forestry discussions to policy makers and a wider audience on whose support a sustainable tropical timber trade depends. This information is made available in the ITTO quarterly-published newsletter Tropical Forest Update.

V. THE ITTO YEAR 2000 OBJECTIVE

The ITTO Year 2000 Objective emerged in the form of a commitment of all members made in Bali (Indonesia) in 1990 to achieve exports of tropical timber products from sustainably managed sources by the year 2000. It is, indeed, a courageous and challenging goal to be achieved within a short period of 10 years, given the stark reality of the complexities in bringing tropical forests under sustainable forest management. For ITTO, however, the commitment constitutes an important and timely shift from mere debate to real action.

Following the adoption of the ITTO Year 2000, further work had been undertaken towards operationalising the goal. This included the formulation of a strategy adopted in 1991 by which members would progress towards achieving

sustainable forest management and trade in tropical timber from sustainably managed resources by the year 2000. The strategy has since been incorporated as one of the operative objectives of the ITTA, 1994.

In 1995, aware of the short time remaining until 2000 and the need for a practical approach, the Council by Decision 8(X) identified seven priority actions by countries that are essential for progress toward the Year 2000 Objective in the short-term. These are to:

- Adopt a forest policy and apply legislation;
- Secure the permanent forest estate;
- Apply reduced impact logging;
- Train the work force, including supervisors, in reduced impact logging;
- Limit timber harvest to the sustained yield capacity;
- Raise public awareness that timber harvesting can be consistent with the sustainability of tropical forests;
- Focus forest research on the analysis and use of existing data and knowledge.

Other important efforts in this regard were the task of estimating the resources required to attain the objective and the development of a format for the sharing of information pertaining to the progress achieved towards the realisation of the goal. Voluntary progress reporting was subsequently made by members leading to the conduct of the Mid-Term Review in Manila in 1996. The outcome of the Mid-Term Review has indicated the prospect for a number of the producing members to make good progress towards the attainment of the ITTO Year 2000 Objective. For the other producing members, the way ahead lies in making progress in four keys identified areas on the basis of prioritised action.

The costs of bringing tropical forests under sustainable management are substantial and increasing. The ITTA, 1994 provides for the establishment of the Bali Partnership Fund to assist producing member countries for the sustainable management of tropical timber. Members and the international donor community are being asked to make pledges to the fund, which has received some initial contributions. With the year 2000 fast approaching, the attainment of the ITTO Year 2000 Objective will depend on the full commitment of members as well as the adequate provision of resources and expertise.

VI. TIMBER CERTIFICATION

Recently, timber certification has emerged as a focal point of international debate. ITTO, mindful of this new trend, has contributed to the debate with two publications Criteria and Indicators (1998) and Timber Certification: Progress and Issues (1997). Nonetheless, there is still a need to achieve international harmonisation and mutual recognition of standards and to develop a common set of criteria and indicators for sustainable management at the forest level to

assist the global certification process. To date, the slow progress in timber certification has meant that its potential role in promoting sustainable forest management on a significant scale globally is, at best, still unclear.

While aiming to a core set of criteria for evaluating SFM, it is also important to support the efforts of the World Trade Organization (WTO) to ensure that existing and new certification and eco-labelling schemes for wood products in importing and consumer markets are not used in a discriminatory way as a form of 'disguised protectionism'.

The issue of market access was raised within the ITTO in 1993 with a call for the assessment of international market trends, market share and conditions of market access. A reiteration of the importance of market access was made in 1996 which subsequently led to the decision in 1997 for the conduct of a study on The Impediments to Market Access for Tropical Timber. The study is currently being implemented.

VII. MARKET TRANSPARENCY AS A MEANS TO ACHIEVE SFM

The monitoring of progress towards sustainable forest management depends on having an accurate set of statistical indices of such aspects as the magnitude and pattern of timber production, the extent and nature of the trade, the rates of growth in the forests and the rate of forest loss. Following its establishment, ITTO embarked on building up its capacity in market intelligence through the conduct of studies on export market structures and end-uses. In-house statistical work was also launched at an early stage as a step towards market transparency. The ITTO Annual Review is an important and well-known publication, which summarises and analyses statistics for tropical timber production and trade and the trends they indicate. In the context of the ITTA, 1994, the Annual Review and Assessment of the World Timber Situation is conducted on the basis of all timbers

The Tropical Timber Market Information Service (TTMIS) complements the Annual Review task. MIS is a bi-weekly newsletter that collects, reports, analyses and disseminates up-to-date information on export prices for tropical forest products for a range of species and degree of processing. These comprehensive sources of up-to-date market intelligence has gone a long way towards meeting the objective set for it under market intelligence and market transparency. These services have increased the capacity of consumers and producers in the trading channel to anticipate market movements and trends with more confidence. A number of producer countries do not have either the adequate capacity to generate, compile or disseminate these data. This means that they are unable to exercise control over output relative to growth, which is necessary for taking even the first steps towards sustainable development. ITTO, in collaboration with selected international and national agencies, has instituted a series of regional workshops for training staff from producer countries in the design and management of effective statistical information systems. Positive results are already evident and

more consistent information are being forwarded for use in ITTO's statistical publications.

VIII. RELATIONS WITH OTHER INTERNATIONAL ORGANIZATIONS AND INITIATIVES

As provided for in the ITTA, ITTO operates closely with many other inter-governmental and non-governmental bodies working on relevant fields of interest. In the context of the follow-up on UNCED 1992, ITTO has been actively involved in major post-UNCED initiatives and has contributed significantly to the on-going global forest debate through the United Nations Commission on Sustainable Development (UNCSD), the IPF and the Inter-Agency Task Force on Forests (ITFF). Following the establishment of IFF as a successor to IPF, ITTO is continuing its contribution in 'Trade and Environment' issues. ITTO is officially consulted by the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) on proposals to list timber species in its appendices.

ITTO has also initiated consultations with FAO, UN/ECE, and Eurostat to explore the feasibility of developing a joint forest statistical questionnaire that could reduce overlapping of efforts in the collection of data and the burden of countries in submitting data to different international organizations.

IX. PROGRESS

Over the past years, great advances have been made in the three essential elements of the agreement. While it would be extreme to claim that progress is all due to ITTO's activities, it has made an appreciable contribution.

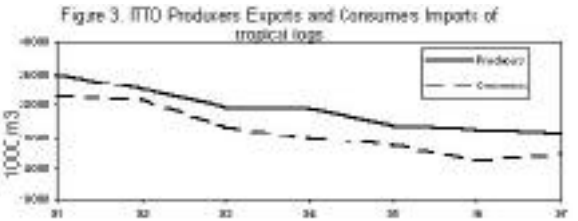
The collection, analysis and dissemination of production, trade and price information has increased the capacity of all marketing channel actors to appreciate market changes and take more optimal decisions. To bring better coordination to the export market, the Organization has supported projects to study and revise nomenclature and grading rules of tropical timber logs, sawnwood and plywood. The availability of all this information is undoubtedly a big step forward the market transparency objective.

In the last decade, greater share of the proceeds from the trade is reaching the producers, which is very consistent with the objective of increasing producer export earnings. A major proportion of this corresponds to processed wood products.

In fact, this growing process has been accompanied by a steady decline in tropical logs trade. Figure 3 shows that ITTO producers have decreased one-third their exports in the current decade. ITTO consumers, in turn, have had a similar drop in log imports in the same period. These trends in the trade of raw and processed timber show the shift to value added exports, which is consistent with

the objective in promoting domestic processing. Although ITTO has played a role in this process, it must be also considered that development and restructuring in producing countries have been concurrent, as well as policy intervention to limit raw wood exports.

The contribution of ITTO to forest management, research and development of low impact timber harvesting systems has been significant. Several projects in Latin America and Asia are showing that low impact logging is feasible. Much can be achieved through training in the handling of equipment, and better planning and control of timber harvesting operations. The corporate structure for field administration, supervision and management control (including helicopter logging) is a noteworthy example which could have even wider applicability.



ITTO has been also concerned with the development of methods and markets to allow greater use of lesser used species which can be harvested on a sustainable basis and non-wood forest products as an important alternative in the development of low impact timber management and diversification. The involvement of ITTO in conservation reserves and national parks as land policy has brought about several scientific findings. One outstanding result was the establishment of the Lanjak-Entimau / Bentuang-Karimum Biodiversity Conservation Area, about one million hectares in size between Malaysia and Indonesia, perhaps the largest transboundary reserve in the rainforest world. The area has allowed the protection of endangered species and perhaps the discovering of new ones to the science. Other ITTO projects include studies of downstream effects of upland timber management and mangrove forest management.

X. FINAL REMARKS

After all these years, the tropical timber trade has come a long way towards becoming an instrument of forest conservation rather than an agent of deforestation, and a much higher proportion of the tropical timber harvest is now processed in the countries of origin with the consequent gains in rural as well as national and social development. These and other advances have been noted. But, naturally, after a short time of its active operation, ITTO has much more to accomplish. Preliminary indications show that the low level of SFM assessed 11 years ago is rising significantly, with major improvements in some countries. This is a laudable achievement but there is still an enormous task ahead to reach SFM.

ITTO is aware of the fact that the task of upgrading and acquiring all the skill

required for the whole timber economy to conform to the standards of sustainability is clearly of a scale well beyond anything it can tacke on its own or, even, in conjunction with other international agencies.

Greater market transparency would ensure the objectives on improved market access for timber products, international harmonisation and mutual recognition of standards for timber certification, international commitments to a country certification process and assessing the international financial and technical assistance needed by developing countries. In addition, market transparency is essential for providing information to facilitate the independent market and economic analyses of the market competitiveness and long-run substitution of forest products and of the costs and benefits of implementing sustainable forest management in producer countries.

Public policies continue to be a major barrier to sustainable forest management in some producer countries. The result is inappropriate economic incentives creating inefficiencies in timber harvesting and short-term extraction for immediate gain, and a more long term and wide scale effect on the pattern of forest-based industrialization and its implications for the management of the forest resource base as a whole, including the conversion of forest land to agriculture and other uses. Improved market transparency is one key element in progress towards policy reform and full cost internalisation to promote sustainable forest management. It might be pertinent the consideration of the issue as to what international and national policies are required to facilitate sustainable forest management globally, and whether these policies need to be endorsed through multilateral agreement and commitments.

Political Ecology of Sustainable Forest Management

POLITICAL ECOLOGY OF TIMBER RIGHTS IN THE WESTREN HIMALAYAS

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I. INTRODUCTION

Timber Distribution (T.D.) is a unique policy in the colonial history of forest management. It is a policy in the state of Himachal Pradesh in India that provides every landowner with the right to harvest timber for the construction and repair of their houses. This policy while providing for a basic need of the local population is also the single largest reason for timber harvest in the western Himalayan region. It results in the harvest of 100,000 cubic meters of prime timber worth over twenty million dollars annually[1]. T.D. provides a singular example of provision of valuable rights to local society by the state. Although this policy also represents restriction of rights through regulation by the state, it is a unique case where local people have managed to retain rights to coveted resources over a century of social, economic and political changes. Ecologically, T.D. is significant as it represents the single largest reason for legal timber harvest in the middle and upper hills of the Indian Himalayas. This policy is also vital since user rights are recommended in most new participatory forest policy initiatives around the world. Timber distribution is a policy that has survived over a century and provides a good case to understand the impact of social, economic and political changes on a user rights policy.

Timber distribution has been policy of the forest department since the last century. Rights of local people to use state forests have been codified by forest settlements undertaken by officers of the colonial era. For instance in Kullu district of Himachal Pradesh, the Anderson's settlement[2] completed in 1886 still defines the forest rights of local people. This provides all landowners of the region with rights to:

- timber for building and repairing houses;
- grazing cattle, sheep and goats;
- wood for agricultural and domestic implements;
- grass and leaves for fodder;
- manure;
- fuel wood, splinters, torches, wood for funerals;
- medicinal roots, flowers, fruits, bamboo;
- several species of dry fallen wood.

All these rights are appended to agricultural land. The right holders are described in the settlement not by individual name, but by the name of the hamlet.

The rights of landowners of each hamlet are specified in particular forests and the detailed rights in each forest are also delineated in the settlement. With landlessness at less than 2% in this state, T.D. ensures timber for practically every family. The right to timber, previously unlimited, has now been restricted to only one or two trees once every five years. But the villagers still pay the same nominal amount fixed in the last century by the settlement. The rates for T.D. were fixed at 20% of the market rates at the time of the initial forest settlements, for all species that had a market value at that time. Today T.D. rates have become insignificant compared to current market rates.

Existing Ratio of T.D. Rates to Market Rates (1993):

Deodar1:	12328
Kail1:	29167
Fir1:	56083
Chil 1:	15132

The effective subsidy provided by the forest department under T.D. in 1992-93 was Rs. 795,600,000[3].

II. STUDY SITE

My study was conducted in Kullu district of Himachal Pradesh in India. Himachal Pradesh is a small state in the Western Himalayan region of India with 35.3% of its geographical area classified as forest area. There are three ago-ecological zones in the state - the lower sub tropical region, the middle moist temperate belt and the higher alpine, and snow covered areas. Ecologically it serves as the watershed region for several major national rivers, and faces all the travails of a fragile mountain ecology. Kullu district, in the moist temperate zone was selected as the main field site. Kullu has a population of about 301,000 persons, with a density averaging 55 persons / km^2. The annual population growth since 1981 averages 2.6% (the highest rate in the state), mainly due to in-migration of labor. Ninety six percent of the population in this district is Hindu by religion, and 2.9% are Buddhist.

Kullu district has an average land holding size of less than one hectare. The average land holding size declined from 1.16 ha to 0.94 ha from 1980 / 81 to 1987 / 88[4]. This decrease is attributed mainly to partition at inheritance. The economy of Kullu has seen considerable changes in the last three decades mainly due to commercial apple production and tourism. The main occupation cited by majority of the respondents was agriculture. Wheat, maize and barley are the main crops, although intercropping with pulses and beans is common. Cash crops such as garlic and off-season vegetables are increasingly being adopted by local people, and half the households in the study sample owned at least a few apple trees.

III. METHODS

The research was conducted over a period of one and one-half years, using a combination of methods. Political ecology, a research framework that combines ecological concerns and a broadly defined political economy (Blaikie and Brookfield, 1987; Neumann, 1992)[5] was used as a guiding tool. The study incorporates both individual and village level data with broader state and national level data. Within this framework, I used participatory rural appraisal tools to familiarize myself with the field and to define and refine the research questions. I used participant observation to collect data on relationships and activities. I surveyed individuals in two hamlet clusters in one district of Himachal Pradesh for much of the demographic and perception data. To further refine this data I interviewed key personnel. Finally archival research and department records help me trace the forest management aspects as well as the history of the policy.

IV. RESULTS AND DISCUSSION

In this discussion I will focus on one particular aspect of my study. I will discuss the issues that arise during implementation of the policy. This is a crucial phase that is often neglected by policy makers. But even well designed policies depend on proper implementation for their success.

Timber distribution policy is implemented by the Department of Forest Farming and Conservation (DFFC) of Himachal Pradesh. This is an organization similar to the Forest Department in other states of India. It is headed by officers from the Indian Forest Service (IFS) who are selected through an all India selection process. These IFS officers are charged with managing the forest and adapting policy at the state level. Below them are the Range Officers who are selected through a state level selection process. Next are the deputy rangers and lowest in the hierarchy are the forest guards (FIGURE 1).

Attitudes, problems and strengths of the higher level officers have been analyzed by some studies in the context of social/ community forestry, as these are the people who design the policy and decide if it will be implemented. However, the attitudes of the lower level staff has often been assumed rather than studied or analyzed. The actual field implementors of a policy are below the rank of the range forest officer. These people are recruited from the local area and interact on a daily basis with the local people for whom the policy is being implemented.

Forest guards are often faced with the dilemma of being both a forester and a villager. They are employed by the department and often expected to implement forest policies that restrict forest use of local people, they are also part of the local society. They are however an integral part of local society and are constrained by the various relations and obligations imposed by the local social code. They are unlike the higher officials who have less contact with local society and its customs. The higher officials are in many senses "outsiders" - they are recruited from other parts of India, are trained outside the state, and often live within forest colonies

separated from the local villagers. Their friends and relatives are distinct from their clients. Forest guards have a harder time keeping the two separate and this definitely affects the implementation of forest policies. Forest guards are enmeshed in the local politics. Hierarchies and divisions in local society like caste, class, gender, social and political power affects them as much as the villagers. To live in the villages they often have to follow the local customs and traditions and are bound by the social rules of kinship, friendships, and obligations. For instance, although a forest guard is expected to check the genuineness of applications of

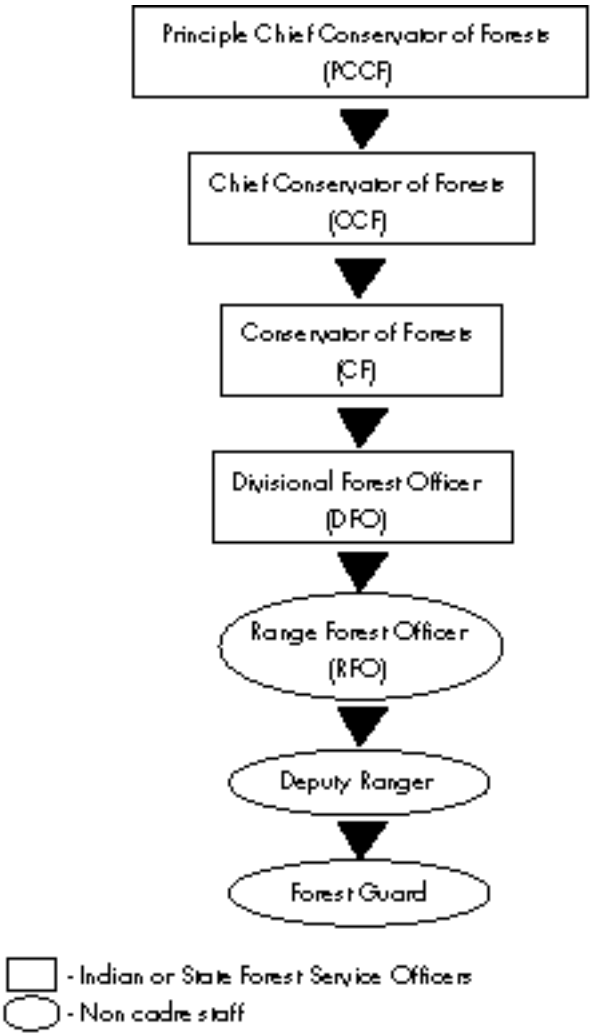
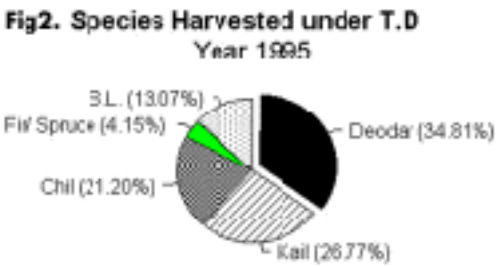


FIGURE 1 : Organizational Structure of the Department of Forest Farming and Conservation, Himachal Pradesh

timber, in reality it may not be socially possible for him to refuse the timber application of a powerful villager. They have to be provided the power, equipment, training and institutional support required to implement the policy. Is it possible for an unarmed single forest guard to stop gangs of illegal smugglers? Is it practical to raise plantations within project financial years, irrespective of seasonality? These are questions that need to be raised by policy makers. Before forest policies are made it is necessary to check if it is physically, financially and socio-politically possible / advantageous to implement a particular policy. Especially crucial are questions that are often neglected like what impact does the policy have on the workload of lower level staff, their power equation in the department and in local society, and their professional and personal identity.

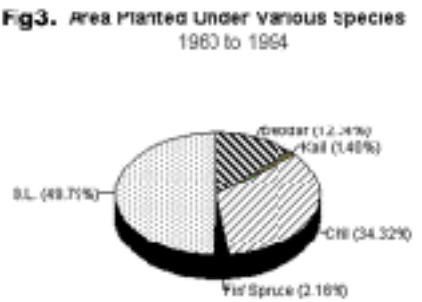
The other aspect of policy implementation is the integration of various policies and projects so that the over all combined outcome is desirable. This implies integration both within the sector as well as between different sectors. I will deal with the intra sectoral integration first as this is relatively easier. The Department of Forest Farming and Conservation has over a dozen different projects and several policies that it implements. Timber distribution is one of them that results in the harvest of a large amount of timber. The timber harvested however is only of particular species (FIGURE 2). For instance cedar (*Cedres deodara*) and blue pine (*Pinus excelsa*) account for over half of all the timber harvested every year under the timber distribution policy. These woods are best suited for house construction in this area, and are most durable.



Plantation projects generally are carried out independent of any analysis of harvests. Plantation is done within forests to supplement regeneration, and also in community land and wastelands. It is done under specific projects, many of which are funded by various donor agencies. Large areas have been planted, usually with the species planted depending on the particular project under which plantation is undertaken. (FIGURE 3).

Overall chil (*Pinus longifolia*) is the single largest species that has been planted by the department (about a third of the area planted in the last 30 years). A large number of broad leaved species including oaks, sal, walnut, etc., have been planted under various projects in recent years. Deodar forms only 12 % of the planted area. Management of plantation, regeneration and harvest in consonance with one another is important to maintain the tree species balance in these forests. This

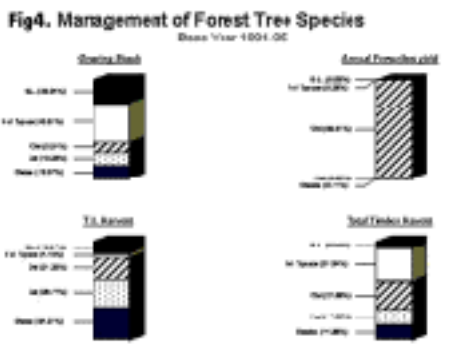
seems to have been neglected. There is significant gap between what is being planted and species that are being harvested in the state. Fir and spruce have been harvested on a large scale by the forest corporation, but plantation has not focused on these species.



Many of the more recent plantation projects have focused on planting broad leaved species. Although they are not harvested for timber, they are heavily used by local people for non-timber products. Hence this plantation is a good strategy. But simultaneously, there is a need to plant other species that are being heavily used. For instance plantation of deodar is essential if the future need for T.D. and house construction in this region has to be met.

Chil forms almost the entire annual silviculturally prescribed yield in the forests of Himachal Pradesh(FIGURE 4). However, neither the T.D. nor the commercial harvests can, or do correlate with this prescribed yield, which is too low for all other species. This is a serious gap in the management of these forests that need to be addressed.

The profile of the forest is likely to change drastically if harvesting and plantation policies are not seen an integrated whole. The growing stock that is available for the species that are so much in demand is very low, and likely to cause problems in the near future.



Timber harvested under the timber distribution policy has increased steadily over the years due to factors that are often external to the forestry sector. The increase in population and migration to town centers and the improvement in the economy have been major factors. With increase in disposable incomes and the growth in tourism the price of timber has increased considerably. Another factor is the change in lifestyle that accompanies these above factors. Land is divided among nuclear families and land fragmentation is common. Timber rights are appended to land ownership, and

hence number of right-holders has also increased.

Inter-sectoral integration is perhaps even more difficult as it involves different competing implementation agencies. For instance in Himachal Pradesh, tourism is being promoted as a major revenue earner. Manali town in Kullu district has emerged this decade as a major tourist center for Indian and foreign tourists, and at least 300 hotels and guest houses have been built in this decade. This makes economic and political sense as the state is rich in natural resources and scenic beauty that should be effectively utilized. However, as is evident in the Manali region, this industry has not been conscious of the need for protecting the environment. Apart from pollution and urbanization problems, hotels have also utilized a tremendous amount of local wood in construction. The demand and the price for timber in the local area has shot up considerably, resulting in the increase in local illegal trade in timber.

Horticulture is the other major revenue earner in the region. This affects forests in two direct ways, more land is converted to orchards and wood is utilized for packing cases. The later problem has been solved to an extent in this region by importing soft wood from neighboring states. Both horticulture and tourism have resulted in the increase of average incomes in the region, which is generally desirable. Increased income has an indirect effect on forests. Generally more affluent people build larger houses. Even in cases where people have moved away from houses built entirely of wood, a large amount of wood is used in paneling and other embellishments. Hence wood use for construction has increased overall. However, with affluence fuel wood use decreases drastically which is favorable to forest management in this area.

V. CONCLUDING COMMENTS

Holistic management: Sustainable forest policy has to be based on very localized facts but it also needs to have a broad perspective. For instance while local social and ecological factors should provide the basis for species selection, the overall landscape of the region and the future need of the population should be factored in to decide where harvests should take place and where and what plantations are undertaken. This is particularly important in a state like Himachal Pradesh where different projects have different funding sources and different priorities and goals. These projects need to be integrated to meet the need of the region and people.

Inter-sectoral cooperation, as discussed above is crucial for sustainable management of forests. Competing and contradictory goals of agencies planning for the same region can cause more damage than good. Although this is difficult to achieve in well entrenched traditional bureaucracies as in India, it should be emphasized as far as possible.

Focus on Implemetors: Finally, it is essential to consider the lowest level of contact between the implementing agency and local clients before formulating any policy. The policy needs to be palatable to them, as well as easy to implement

and monitor. Some policies that sound sustainable to policy makers are almost impossible to implement in the existing social and political conditions. But lower level staff are simply expected to implement it at all costs. This is an unrealistic demand and often results in successful reports and unsuccessful projects. Lower level implementors should be considered and consulted when policies are designed for sustainable management of natural resources.

NOTES

[1] Forest Department. 1996. Himachal Pradesh. H.P. Forest Statistics.

[2] Anderson, A. 1886. Report on the Demarcation and Settlement of Kullu Forests. Reproduced in 1975. Forest Department, Himachal Pradesh.

[3] Department of Forest Farming and Conservation. 1994. Himachal Pradesh. Annual Administrative Report.

[4] Government of Himachal Pradesh. 1998. Census of Agriculture.

[5] Blaikie P. and H. Brookfield. 1987. Land Degradation and Society. Routeledge, New York; Neumann, R. 1992. Political ecology of wildlife conservation in Mt. Meru area of Northeast Tanzania. Land Degradation and Society 3: 85-98.

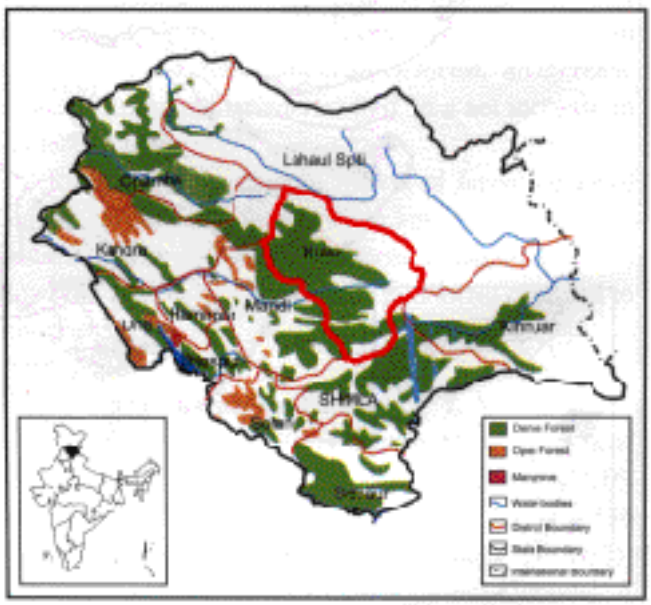


Fig 3.6 Forest Cover of Himachal Pradesh

PARTICIPATORY RESOURCE PLANNING IN WETLANDS OF NEPAL A CASE STUDY OF GHODAGHODI TAL

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ABSTRACT

The paper aims to put forward systematic steps of doing participatory appraisal to prepare a community-centered management plan of Ghodaghodi Tal, an area of western Nepal. In order to achieve this goal, the paper has been divided into two parts. The first part begins with a panoramic overview of the socio-demographic scenario and forest situation in Nepal. According to the latest estimate, 54 % of the area is covered with vegetation. Forests cover about 37.4 % (5.5million ha.) of the total area. Grasslands and shrubs cover 12 % and 5% of the land respectively. The dependence of an 18.5m human population and a 17.2 m livestock population on forests is the main cause of deforestation and forest degradation in Nepal. Other causes include forest fires, infrastructural consequences, illicit trade and natural calamities. About eight types of indigenous and sponsored models of resource conservation have been presented. It was found that community forestry management is the most successful model of forest protection in Nepal. The number of FUGs that manage and control the community forests has reached about 6,574. The chronology of forest legislation development is also presented. Data show that about 53 % of Nepal's land is suitable for forestry and forest development. The second part attempts to show how a participatory assessment can be undertaken to prepare a community-centered plan for the sustainable management of a wetland in Nepal. The paper mentions that PRA (Participatory Rural Appraisal) is a learning process, which progresses through three stages: learning to be effective, learning to be efficient, and learning to disseminate. In other words, it is an approach of "learning by doing". The participatory assessment that combines a variety of simple but effective techniques of data collection is a nine-step process, which begins with concept development and terminates with the community's acceptance and endorsement of the plan. The study has been successful in developing the capacity of the local community to prepare a participatory management plan and enhance their feeling of ownership in the plan. Lessons distilled from the study show that people will cooperate with outsiders only when they are convinced that they will be the beneficiaries of the plan.

I. INTRODUCTION

The primary purpose of the paper is to talk about the process of a participatory preparation of a community-centered management plan of Ghodaghodi Tal area, a lake system in western Nepal, where deforestation and forest degradation are taking place alarmingly and rampantly. The paper has been divided into two

parts. The first part gives an overview of the forest situation in Nepal and briefly presents the major underlying causes of deforestation and forest degradation. The second part gives a brief introduction of PRA and discusses the systematic processes involved in the preparation of a community-centered management plan. Some outcomes and lessons learnt from this exercise are also presented.

II. OVERVIEW OF FORESTS IN NEPAL

1. Nepal at a Glance

Nepal is a tiny country wedged between the two largest countries in the Asian region, India to the South and the People's Republic of China to the North. It lies to the North of the Tropic of Cancer and shows a great climatic diversity. The country runs from east to west and covers an area of 147,181 sq. km. In terms of its size, it is 65 times smaller than the People's Republic of China and 22 times smaller than India. It is about 2.5 times smaller than Japan. Its length is about 885 km. and breadth varies from 145 to 240 km. It lies within the latitudes of 26˚22'N and 30˚ 27' N and longitudes of 80˚4' E to 88˚12' E.

Nepal is bordered in the North by China's autonomous region of Tibet, in the East by Sikkim and West Bengal states of India and in the South and West by Bihar and Uattar Pradesh (UP) states of India. It is a land-locked, mountainous country. The nearest sea port is Calcutta (India), which is 960 km away (Chaudhary, 1998).

Nepal is known by various names such as the country of Mt. Everest, or the country of Buddha's birthplace or the only Hindu country of the world. According to the Census of 1991, the population of Nepal is 18.5 million with an annual growth rate of 2.08 %. With this growth rate Nepal's population will double in 33.7 years. The total number of households is 3.4 million with an average households size of 5.6. The average population density is 125.6/sq. km. and the mean sex ratio is 99 (CBS, 1995).

Administratively, the country is divided into 75 districts with 3,913 village development committees (VDCs) and 58 municipalities including metropolitan and sub-metropolitan areas (HMG/NPC, 1992).

2. Status of Forests

Statistics show that one-fifth of Nepal's total area is cultivated and another 7 % can be brought under cultivation. Forests and shrubs together occupy 42 % of the total area of the country. Nearly 12 % of the area come under pastures. Snow, rocks and degraded lands are not suitable for farming and cover about 19% of the total area (CBS, 1998).

The data of 1991/1992 shows that 18 % of the total land was operated by farmers. Per capita agricultural land is 0.14 ha. The majority of arable land was used to grow seasonal crops (crops with an under-one-year growing cycle). Permanent crops occupied less than 2 % of the total agricultural land (Misra and Kayastha, 1998).

Physiographically, the country has been divided into 5 regions with two broad types of biogeographical realms: Indomalayan and Palearctic. The climatic zone, coverage and altitudinal variations are given in Table 1.

Table 1. Physiographic Zone, Climatic Zone, Area and Average Altitude

Physiographic Region	Climatic Zone	Area	Altitude (in m)
High Himal	Alpine Zone	23 %	4,000-5,500
High Mountain	Sub-alpine Zone	20 %	3,000-4,000
Mid Mountain	Temperate Zone	30 %	2,000-3,000
Siwaliks	Sub-tropical Zone	13 %	2,000-3,000
Terai	Tropical Zone	14 %	>1000

Hard wood forest consisting of sal (*Shorea obusta*), khair (*Acacia catechu*) and sisso (*Dalbergia sisso*) occupies about 59% of the total area of natural forest and is common in the Terai region. The soft wood conifer forest (pine and fir) type is found in the alpine and sub-alpine regions of high hills and mountains in the North. Evergreen, deciduous and mixed forests are common in lower hill ranges. In Nepal there are about 35 types of forests.

The Master Plan for the Forestry Sector Nepal (HMG / ADB / FINNIDA, 1988) reports that Nepal has approximately 54% of its total surface area under vegetation. The land use of physiographic regions by the vegetation category is given in table 2. According to the Table, 37 % (5.5 m ha) of the total area comes under forests which have at least 10 % crown cover. Grassland covers 12% (1.7 m ha) and includes degraded forest as well. About 5% (0.7 m ha) is under shrubs. The statistics shows that a total of 1.08 m holdings have forest tree plantation on their holdings with a national average of 31 trees per holding (see Table 2 for details).

Table 2. Land Use by Physiographic Region, 1985-86 ('000 ha)

Physiographic Region	Cultivated land	NCIS (a)	Grassland	Forested lands/forest plantation (b)	Shrub land/degraded forests(c)	Other lands	Total
High Himal	8	1	885	155	87	2,234	3,350
High Mountain	244	148	508	1,639	176	245	2,960
Mid Mountain	1,223	667	278	1,811	404	59	4,442
Siwaliks	269	59	16	1,438	29	75	1,886
Terai	1,308	123	58	475	30	116	2,110
Total	**3,052**	**998**	**1,745**	**5,518**	**706**	**2,729**	**14,748**
%	**21**	**7**	**12**	**37**	**5**	**18**	**100**

Source: HMG/ADB/FINNIDA (1988)

Note: (a) NCIS (non-cultivated inclusions), meaning small pockets of land close to cultivated lands, but too small to be mapped at a scale of 1:50,000. They are a distinct land use category.

(b) Forested land, meaning at least 10 % crown cover.

(c) Other is a catch-all category, which includes rocky areas, lakes, ponds, waterways and settlements.

The categories of lands usable for forestry according to physiographic regions are given in Table 3. Some 53 % of Nepal's land is suitable for forestry and forestation. Approximately 82 % of the land is suitable for forestry in the Siwalik region and 10 % in the High Mountain region.

Table 3. Land Suitable for Forestry Purposes ('000 ha)

Physiographic Region	Plantation	Shrub lands	Grasslands	NCI	Total	%
High Himal	155	67	109	1	332	10
High Mountain	1,639	176	364	104	2,283	77
Mid Mountain	1,811	404	281	601	3,097	70
Siwaliks	1,438	29	17	53	1,537	82
Terai	475	30	58	31	594	28
Nepal	**5,518**	**706**	**829**	**789**	**7,842**	**53**
%	**70**	**9**	**11**	**10**	**100**	

Note: Percentage across is for entire Nepal and percentage down, for total area of forests
Source: HMG/ADB/FINNIDA (1988)

3. Categories of Forest

From the management and utilization point of view, the forests of Nepal have been categorized as follows.

1). **Government-managed Forest**: The natural forests that are managed and controlled by His Majesty's Government come under this category. According to the Private Forest National Act of 1957, lands which are not cultivated belong to the government. The institution responsible for managing these state forests is the Department of Forests. The chronology of forest legislation in Nepal is given in Box A.

2). **Protected Forest**: The Forest Act of 1993 (Chapter 4 and Clause 23) suggests that forests that are unique from the points of environmental, scientific, and cultural significance are categorized as protected forest. National parks and reserves fall under this category.

3). **Community Forest**: Forests managed and controlled by indigenous as well as sponsored community groups are popularly known as community forests.

Box A: Chronology of Forest Legislation in Nepal

1934	Establishment of Ban Janch Adda
1956	Establishment of the Office of the Chief Conservator
1957	Private Forest National Act
1961	Forest Act
1967	Forest Protection (Special Amendment) Act
1970	Forest Products (Sale and Distribution) Rules
1976	National Forest Policy Act
1978	Panchayat Forest Rules
1978	Panchayat Protected Forest Rules
1978	Leasehold Forest Rules
1981	Private Forest Rules
1993	Forest Act
1995	Forest By-laws

Source: Various Sources

These forests are protected, managed and utilized by local user groups. These groups are called Forest User Groups (FUGs). In this type of management, local communities are given rights by the Department of Forests to manage and protect resources. FUGs receive benefits accruing from the forests. A community forestry program started in the early 70's has shown impressive results in meeting the demands of fuel wood and fodder. Joshi (1997) reports that resources can be protected and managed if communities are empowered. The organized communities are effective managers of resources. The statistics on FUGs, a total of 6,574 FUGs from 64 districts have already been formed. The Sindhu Palchowk district has 305 FUGs, which is the highest number, and the Kaski district has got 286 FUGs, which is the second most in the country. The total area covered by these FUGs is 440,622 ha. Some 701,508 households have joined the user groups.

4). **Leasehold Forest**: National forests handed over to any institutions, which are established under the current laws, are categorized as leasehold forests. There are many leasehold forests in Nepal.

5). **Religious Forest**: Religious forests are the forests handed over to religious trusts or groups for their development, conservation and utilization. Good examples of religious forest are Bajra Barahi forest and Guheswori forest.

6). **Conservation Area**: The areas managed in accordance with the bioregional planning concept for the conservation of the natural environment and their sustainable use are called conservation areas. The Annapurna Conservation Area Project (ACAP) and Kanchanjunga Conservation Area Project (KCAP) are good examples of a conservation area.

7). **Private Forest**: It refers to degraded or forested lands that are owned by individuals or organizations. It also includes the area under agro-forestry. The Department of Forests supplies saplings free of cost and provides technical support for the management of private forests. They can be managed for commercial purposes as well.

8). **Indigenous Method**

Shinga Naua: It was a common system among the Sherpas of eastern Nepal particularly in Solu-Khumbu district. The Shinga Naua was a locally appointed or elected official by the community for a fixed term. He was the caretaker of the forest with authority of allocating forest resources and ensuring that individuals adhere to informal rules and regulations. Presently this system does not exist in Solu-Khumbu. How deforestation and degradation occurred in the forest of Solu-Khumbu is well-quoted by Gilmour and Fisher (1991) below:

> .. "the replacement of this system (Shing Naua) by ineffective national Forest Department contributed to the degradation of forests in Solu-Khumbu"

In Sindhupalchowk district, Shinga Naua is responsible for protecting adjacent forests and regulating the uses of pasturelands.

Chitardar: The Chitardar system was common in the hills in the 19th century. A Chirardar was a local guard employed by the community to watch a particular piece of forest. He received a fixed amount of cash from each household. He was responsible for administering and controlling the use of village forest resources, which are primarily used as fuel wood, fodder, leaf litter, logging and building materials.

Manapathi System: This system is based on payment in kind, especially grain. Under this system, users contribute grains from each household for the payment of their forest watchman.

Kipat System: This system was common within a certain group of Limbuan communities in the Eastern Hill. They received the state's mandate to regulate and protect their forest in the Kipat land. This system does not exist any more.

Talukdar: In the Rana period, forests were managed through local officials. These officials were called Talukdars and collected land revenue from private landholders.

4. Underlying Causes of Forest Degradation

Before we understand the underlying causes of deforestation and forest degradation, it is necessary to understand their direct causes because direct causes and underlying factors are closely related to each other. They are not mutually exclusive and thus can not be examined in isolation (Stedman-Edwards, 1998). Experiences show that the following are the direct causes responsible for deforestation and forest degradation in the kingdom of Nepal.

1). **Over-grazing**: Forest and degraded forest areas are the principal grazing areas for millions of livestock in Nepal. A large number of animals grazing in small strips of land along the highway is a very common scene. Them total livestock population is 17.2 m, of which cattle account for 42 %. They must graze and browse in any strips of barren lands available.(Anonymous, 1993)

2). **Over-harvesting of resources**: The rural areas of Nepal depend on forest and forest resources for meeting their basic needs such as fuel wood, timber, fodder, medicinal herbs and food. About 91 % of the population live in rural areas and Nepal's population is increasing at the rate of 2.08 % annually. Their demand is increasing proportionally on forests and forest resources. Likewise the consumption of traditional and commercial sources of energy is estimated to be annually growing by 2.1 % and 3.6 % respectively. The total energy consumption is 7 m TOE (ton of oil equivalents). Fuel wood is estimated to make up 79.8 %, while agricultural and cattle residues are estimated to comprise 3.5% and 5.9% respectively (HMG, 1998). Also, rural people prune pollard and lop trees for fodder and other purposes. In addition they also go to forests to collect litter and forest products. Their timber requirements for construction is also met by forests. The attributed reason to over-harvesting is abject poverty. About 49 % of the total population is below the poverty line. The incidence of relative poverty is higher in rural areas than in urban areas (Anonymous, 1993).

3). **Forest fire**: Slash and burn cultivation and setting fire to the forests for new tender shoots and grasses is annually practiced in the spring and summer seasons of each year. Not only dose this cause damage to forests but it also affects their capacity to regenerate quickly and sometimes causes irreparable loss to these resources.

4). **Infrastructural consequences**: The development of roads and technologies is a bane to forests and forest resources in rural societies because they have aggravated the process of deforestation and forest deterioration. Trucks carry away more timbers and fuel woods from the forest area now than ever before. The constructions of big dams and reservoirs have exerted extraordinary pressures on forest and forest resources. Similar is the case with the establishment of high voltage transmission lines for electricity. In many places, these processes have brought negative changes in the forests and ecosystems, which can commonly be seen along the highway. Likewise, haphazard settlements along the road and at strategic points are major causes of forest degradation and deforestation.

5). **Natural calamities**: Natural calamities such as widespread pestilence, pollution, landslides, avalanche and storms are other causes of forest degradation and deforestation in Nepal. Small patches of forest areas damaged by avalanche and stormy winds are common in mountainous regions. Some of these calamities are the result of direct human intervention.

6). **Illicit trade of timber**: Trees good for timber are illicitly felled and sold. These phenomena are common in Nepal. This has posed a serious threat to forests

and forest resources.

7). **Free gift**: As mentioned elsewhere, forests belong to the government. This has two implications for local communities. One is their feeling that the forest does not belong to them and it is not their responsibility to protect them. As a result, local communities compete with each other for harvest. Secondly, people continue to think that forest resources are an inexhaustible, free natural gift. There is a feeling that outsiders will harvest these resources if they do not harvest them by themselves. Because of these reasons, deforestation and degradation are taking place in an alarming way.

III. PARTICIPATORY PLANNING PROCESS: A CASE FROM GHODAGHODI TAL

Participatory planning and management of natural resources can successfully be undertaken in conservation and management of forest resources if people are involved from the very outset i.e., from the initial phase of concept development to the reviewing and monitoring of program planning. This part suggests the process we adopted in involving local people in the preparation of a participatory management plan in the Ghodaghodi Tal area.

1. Selection of the Ghodaghodi Tal area

Ghodaghodi Tal is the largest wetland in the Terai region of Nepal. It is situated at an altitude of 205 meters from the sea level. Its latitude and longitude are 28˚ 42' 06.6"N and 80˚56' 44. 0" E respectively. It lies along the Mahendra Highway with several ramifications caused by soil erosion and running water. It covers a net area of 138 ha within a catchment area of 825 sq. km (Bhandari, 1998). Ghodghodi Tal along with other lakes at its catchment area was selected on the bases of the following criteria (IUCN Nepal, 1998).

1). The Tal area is a habitat for such protected wildlife of Nepal as the marsh mugger, endangered golden monitor lizard, Indian python and tortoise. The Tal area also houses common otter and indigenous species of fish. A large species of tortoise is also reported to be present in this area.

2). About 140 species of birds, both migrant and resident, representing over 16 % of national avifauna have been reported in the area. A few birds that breed in north Asia are also reported to reside here. But the destruction and deterioration of the surrounding forest area have threatened their presence.

3). The Tal area is the largest inter-connected natural lake system in the Terai of Nepal. The other lakes connected with Ghodaghodi Tal are Nakhrodi Tal, Baishhawa, Ojhuwa, Chidiya Tal, Budhi Nakhrodi, Sunpokhari, and Ramphal.

4). The Tal is vulnerable and is exposed to tremendous anthropogenic activities. Because of this the Tal has always been in the top priority of

IUCN Nepal's Wetlands and Heritage Unit. Likewise HMG has also listed it as a critical wetland habitat.

5). The Tal area has been proposed by the Department of National Parks and Wildlife Conservation for its inclusion in the List of Wetlands of International Importance (or Ramsar Site under the Convention terms).

6). Due to its strategic location between Royal Bardia National Park and Royal Suklaphanta Wildlife Reserve, it provides tremendous opportunities for developing ecotourism in the area, thereby generating income for local communities.

7). Since the Tal area is close to the Mahendra Highway it is easily accessible to outsiders throughout the year and has religio-cultural significance as well.

2. Participatory Assessment

It is widely accepted that wise and sustainable utilization of resources is possible only when people are aware of a plan and ownership rights are given to them. The participatory process facilitates and ensures their full support in the successful implementation of the program.

PRA (Participatory Rural Appraisal) is a kind of learning process, where a new project should progress through three development stages: successively, learning to be effective, learning to be efficient and learning to disseminate. It puts emphasis on "learning" as a central part of the process and is based on the "learning by doing" approach. Another name for it is "action research" (Gilmour and Fisher, 1991). Participatory assessment should be seen as a continuous and routine process occurring in a community until the people feel confident to handle it by themselves. This participatory methodology we have used here comes under many names such as participatory inquiry, PRA, Rapid Rural Appraisal (RRA), action research, etc. This system is based on principles of multiple perspectives, group inquiry, context specificity and flexibility (Satterthwaite, et al, 1996; Khon Kaen University, 1987). It uses a range of methods, which can be grouped under four general categories:

1). Group and team dynamics (discussion, meetings and workshops)

2). Representative sampling methods

3). Interviewing and dialogue

4). Visualization and diagramming

The underlying principles of PRA are optimal ignorance (collection of necessary data and information only) and triangulation (verifying information from more than 2 sources). PRA is interactive, innovative, iterative, informal, in-the-community and interdisciplinary (Khon Kaen University, 1987).

3. Steps of Preparing a Participatory Plan

The participatory assessment that has been mentioned here consists of a series

of steps from the very development of a concept to community acceptance and approval of a community management plan. A summary of activities that took place in Ghodaghodi Tal, while preparing a community-centered management plan is given below.

1). **Concept Development**: A concept proposal was developed about preparing a management plan for the study area. That was the beginning of a participatory process. Major activities included:

- ❑ Collection of secondary data and information
- ❑ Review of literature
- ❑ Discussion with relevant experts
- ❑ Identification of a problem
- ❑ Preparation of a pre-proposal
- ❑ Development of a full proposal

2). **Rapid Reconnaissance Visit of the Area**: A team of experts made a quick and rapid visit of the area mainly to establish an initial contact with local communities. Other activities were undertaken to collect first-hand information and were designed to give direct exposure to the team about the real life situation of the area. The task of this visit was to perform the following activities.

- ❑ Visit to the site with local people
- ❑ Meeting local leaders and teachers
- ❑ Initiating dialogue with local stakeholders
- ❑ Revision of a conceptual framework

3). **Confidence Building**: Obtaining the confidence of local people was the main purpose of this step. Community people did not want to disagree with what had been said but would remain alienated from the project. To avoid this situation, methods of developing rapport with communities and building their confidence was initiated in the area. They are:

- ❑ Training of key people, leaders and motivators
- ❑ Discussion with communities and direct observation of sites
- ❑ Providing awareness to the community
- ❑ Initiating field activities
- ❑ Establishing direct contact with people
- ❑ Involving schools in conservation education
- ❑ Recruitment of local staff including a field coordinator

4). **Formation of a Local Steering Committee**: A local coordination committee was formed basically to ensure people's active cooperation and participation in the preparation and implementation of the plan. This committee while preparing the work plan, concentrated on activities related to 6Ws (what, why, when, who, where and how).

- ❑ Set up a contact at grassroots level
- ❑ Preparation of a work plan
- ❑ Identification of major issues and problems
- ❑ Consultation with grassroots people
- ❑ Division of task and responsibility
- ❑ Coordination at local as well as at district levels

5). **Development of a Research Strategy**: Being effective and reliable is one of the important components of a participatory assessment. It can be achieved only when we have the right time, at the right place, with the right person and use the right methods. The following activities were included.

- ❑ Preparation of maps (social, ethnic, and household)
- ❑ Locations of strategic places
- ❑ Identification of key-informants, respondents, etc.
- ❑ Preparation of a work calendar, meetings, discussion, etc.

6). **Information Gathering**: Although information gathering began with the preparation of a concept paper, collecting further information and validating information was done at this stage. Each day began with a preview of the day's activities and ended with a review or the day's activities and then planning for the next day. Activities undertaken at this step are given below.

- ❑ Preview of day's activities
- ❑ Sharing of experience in the evening
- ❑ Review of the activities
- ❑ Preparation of draft by each member
- ❑ Planning for the next day

7). **Appraisal and Analysis**: This step was basically devoted to analyze the situation and assess needs and requirements of the communities to undertake conservation activities. This helped revise and review more issues on the conservation of lakes and their resources. Major activities were:

- ❑ Conducting intensive consultation with the people
- ❑ Verification of facts and figures
- ❑ Understanding the dynamic relationships between different variables

- ❑ Interpretation of data and information
- ❑ Screening of irrelevant information

8). **Preparation of a Draft Plan**: The draft plan was collectively developed with community leaders and members of the steering committee. A series of meetings, discussions, and brainstorming sessions were organized to analyze information. Major activities included:

- ❑ Development of an outline
- ❑ Filling in the information
- ❑ Organizing intensive discussions
- ❑ Review and revision of the report

9). **Community Endorsement**: This is the last part of the exercise we conducted in the country. Its main purpose was to obtain the people's endorsement and approval of the plan. It was a rather difficult part but was successfully done with the active support and cooperation of the communities. Major activities included:

- ❑ Notice circulation in public places
- ❑ Review and discussion in hearing of the public
- ❑ Incorporating suggestions and inputs
- ❑ Obtaining community approval and endorsement
- ❑ Dissemination of plans and activities

IV. CONCLUSION

A cursory review of forest-related literature indicates that there are tremendous pressures on forests and forest resources in Nepal. These pressures are mainly anthropogenic in nature and emanate from a growing human and livestock population. It is, therefore, important to mitigate them. Our plans and policies should address these issues. Many models that are in use show that efforts are underway to protect and conserve them. However, the community forestry program undertaken by the Ministry of Forests and Soil Conservation (MFSC) was most successful in terms of management and sustainable utilization. This model focuses on participatory management in partnership with users. The principal objective of the study is to prepare a community-centered management plan in collaboration with local communities using participatory assessment techniques. Activities such as consultation with local communities, awareness raising, training motivators and establishing a steering committee show that people have developed a sense of accomplishments and realize the importance of their participation in the decision making process. The local grassroots level organizations and local communities have given their support and commitment to conserve Ghodaghodi Tal and its resources. Several district-level organizations

have shown their interests to set aside some funds for its conservation. The most important of thing that we achieved was the acceptance by the communities of their ownership of the plan and the development of a capacity to prepare similar plans in the communities. The lessons we have learnt from this exercise are summarized below:

- ❑ People will cooperate only when their felt-needs are addressed.
- ❑ Consult as many stakeholders as possible. Contacting them initially saves a lot of time, resources and energy.
- ❑ Establish harmony with local communities. There is no correct way to establish harmony with local communities.
- ❑ People participate only when they are going to be the direct beneficiaries. Link people's felt needs to forest conservation.
- ❑ Identify informal leaders and establish contact with them.
- ❑ Emphasize both process as well as product.

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ADVOCATING FOR COMMUNITY-BASED FOREST MANAGEMNT IN INDONESIA'S OUTER ISLANDS: POLITICAL AND LEGAL CONSTRAINTS AND OPPORTUNITIES

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I. INTRODUCTION, DEFORESTATION AND DEHUMANIZATION IN INDONESIA

Ten percent of the world's remaining tropical forest resources are in Indonesia, a figure second only to Brazil. Indonesia's forests are rich in biological resources (10% of the world's remaining flowering plants species, 12 % of mammal species, 16% of reptile species, and 17% of bird species). These forests are also home to tens of millions of Indonesian citizens. Many, if not most of these citizens are indigenous people with culturally rich and diverse customs and traditions. There are approximately 250 local languages and ethnic groups who live within in or adjacent to Indonesia's forest areas (Barber, Ariff and Purnomo, 1995 in Munggoro 1998). There is much uncertainty over the rate of deforestation in Indonesia. Estimates range between 700,000 and 1.2 million ha per year (Pramono 1991 in Moniaga, 1993). Regardless of the exact rate, the country is confronted with a serious deforestation problem that is attracting growing world attention.

The problem, however, is not new. Nor is it an isolated phenomenon. Rapid and growing deforestation rates in Indonesia are all too often directly linked to violations of indigenous and other local people's rights. This linkage has been regular occurrences in Indonesia, especially during the last three decades. As a result, Indonesia's deforestation problem is intertwined with and inseparable from the problems being faced by indigenous and other local people.

Forest ecosystems provide homes and sources of livelihood for a majority of the indigenous peoples of Indonesia. At the same time, indigenous peoples make significant contributions to the conservation and sustainable management of forest ecosystems, as well as to national well-being, cultural identify and sustainable development. (see e.g. Dove 1983., Padoch, 1994, Peluso, Curran, etc.)

Pursuant to legal authority based on the Basic Forestry Law (BFL) No. 5 of 1967, the Government of Indonesia considers indigenous territories to be state forest lands. As such, the legal rights of indigenous peoples to natural resources are legally clouded and their incentives for conservation and sustainable management are undermined (Moniaga 1993, etc.). The designation of indigenous territories as state forest lands has also resulted in conflicts between indigenous peoples and the government. Forest management in Indonesia is still dominated by large-scale exploitation activities undertaken by commercial forest

concessionaires. Many indigenous territories have been leased to companies for production activities without their prior knowledge or consent. Other territories have been annexed to conservation areas designated by the state, also without any prior local knowledge or consent. (ELSAM, 1997)

II. INDIGENOUS RESOURCE MANAGEMENT AND TENURIAL SYSTEM

Indigenous communities have been practicing sustainable community-based ecosystem management for centuries. These systems incorporate local knowledge and beliefs that are based on the wisdom and experience of past generations. They also contribute to the economic well being of local communities, as well to the well being of the Indonesian nation. By growing paddy rice on their farms, sago palm in the dusun sagu, as well as an array of other edible crops such as sweet potatoes, indigenous people are contributing to national efforts to achieve food security and self-sufficiency. Without support from any government-sponsored agricultural extension services, they have been cultivating rattan, rubber, and tengkawang, raising honeybees, and collecting swallow nests. Most indigenous communities have also been managing the resources communally, a fact that does not imply the absence of individual customary rights (Moniaga, 1993; Lynch and Talbott 1995). These communities rely on indigenous system of natural resource management, which include adat or customary laws for allocating, regulating, and enforcing property rights.

Indigenous ecosystem management systems are based on community knowledge about appropriate and productive land and natural resource use. Most indigenous communities have developed specific terms for different uses of land and other natural resources, including terms for different types of vegetation and tenurial arrangements. For example, in central Sulawesi an indigenous community called the Kaili have developed zoning and land use systems within their adat system. There are designated areas known as tana polidaa for rice fields and tana pobondea for orchards. Tana popamba refers to home gardens and herbs, popa tana to burial places, suakan ntotua to forests, pancoakan rodea to extractive forests, viyata nubulu to sacred areas, suaka viyata to sacred forests, etc.

Indigenous ecosystem management systems vary, and each community is different. Although well known within a community, there is little written documentation about indigenous natural resource systems, as well as traditional land tenure rights and practices. A collaborative customary land tenure study coordinated by the Agrarian Reform Consortium were conducted in 1997 with some indigenous communities in Bali, Lombok, West Papua, Central Sulawesi, East Kalimantan and North Sumatra. One of its major conclusions is the need to recognize and respect the pluralistic nature of Indonesia's indigenous natural resource systems and tenures. This will require Indonesia to develop pluralistic agrarian and forestry legal systems, instead of uniform ones.

The problems, rights and potentials of Indonesia's indigenous people, however, have yet to be officially acknowledged or addressed by the government.

At the same time, Indonesia's indigenous and other local people continue to play an important role in the conservation and sustainable management of the nation's forests. As Indonesia reels under a still deepening economic and political crisis, including spreading food scarcity, many indigenous peoples and communities are faring relatively better than other rural Indonesians. The Baduy community in West Java, for example, still has ample food stocks and reserves. Their rice barns are full. That this oasis of food abundance exists amidst spreading food scarcity is largely due to the Baduy's local knowledge and ecosystem management. They have been consistent in following the philosophy of their ancestors such as "lojor teu meunang dipotong, pondok teu meunang disambung." This can be translated as meaning: "things which are too long should not be cut off, and things which are too short should not be added to" (Halim, 1998).

Besides supporting local communities during the national economic and political crises, indigenous systems of eco-management have helped prevent recent forest fires from spreading in Sumatra, Kalimantan and Irian Jaya. They contribute to and help maintain soil moisture and local humidity, which in turn prevented some fires from spreading and entering indigenous territories.

III. DOMINANT FOREST MANAGEMENT PARADIGM

Prior to the mid 1960s, the Indonesian forestry sector emphasized the extraction of teak from government plantations in Java. At the beginning of President Suharto's administration (commonly known as "the New Order") in 1966, forestry institutions were completely reorganized, and the Basic Forestry Law (BFL) No. 5/1967 was promulgated. It was, and continues to be, based on Article 33 (3) of the Indonesian Constitution of 1945, which empowers the national government to control, manage and administer all designated state forest lands.

The New Order administration early on identified dypterocarp trees families in the Outer Islands of Indonesia as a potential source of economic income for national development (Munggoro, 1998). The Government of Indonesia claims ownership of 113 million hectares of the Outer Islands, or nearly 90% of their total land mass, as designated state forestlands. The BFL provides the Minister of Forestry with primary legal jurisdiction, i.e. management authority, over these areas. Pursuant to this authority, many forest-based industries -- especially logging companies -- were granted hak pengusahaan hutan (HPH) or logging concessions on the Outer Islands (Moniaga, 1993). The Government of Indonesia then promulgated a series of regulations which enabled investors to exploit forest resources within HPHs in an unsustainable manner and without any heed to the lessons and insights of tropical-rainforest-management science. The ensuing extractive and rapid exploitation profited people living far from the forests and created massive socio-ecological problems all over the country (Munggoro, 1998).

The BFL also gives the Minister of Forestry authority to sub-classify designated forestlands under its legal control. Approximately 70% of the designated forestland may be allocated for exploitation purposes; the remaining 30% to be conserved.

There are four major sub-categories: (1) protected forests, (2) production forests, (3) nature conservation forests, and (4) conversion forests.

In 1970 the government began to develop a master plan for forest land use which it called the Consensus Forest Land Use Plan (Tata Guna Hutan Kesepakatan - TGHK). After the Spatial Law was promulgated in 1992 the central government required each provincial government, in cooperation with sectoral technical departments to prepare Provincial Spatial Plans (Rencana Tata Ruang Daerah) based on Kecamatan (sub-district) and Kabupaten (district) plans. The Provincial Spatial Plans are supposed to be more holistic and democratic. Once prepared, the provincial plans are also supposed to invalidate any overlapping TGHK. But in reality, the Department of Forestry still asserts management authority over forestlands covered by TGHK.

A majority of forestlands has been allocated for commercial logging (HPH) and industrial timber plantations (HPHTI-Hak Pengusahaan Hutan Tanaman Industri) for pulp, paper or other purposes. By 1991, a total of 57.9 million ha of forest land had been allocated to HPHs. A recent administrative decision meanwhile, expanded the Department of Forestry and converted it into the Department of Forestry and Plantation Development. This is likely to lead to an accelerated conversion of classified "converted lands" into large scale, commercial plantations.

IV. SOCIAL FORESTRY POLICIES IN INDONESIA

As mentioned earlier, most indigenous peoples and many other local, rural communities in Indonesia are directly dependent on forest resources for subsistence, for economic well being, and for other sources of livelihood and cultural identity. Existing national laws and regulation, however, do not promote their well being and interests. Nor do they provide sufficient legal space for local communities to promote their own interests. Aware of a growing number of conflicts, feeling pressured at local, national and international levels, and learning from trends in neighboring countries and globally, the Indonesian Government has begun, albeit in only a small way, to develop some regulations and programs which are more people-oriented.

The Department of Forestry and Plantation (DFP) has recognized the need to promote more community participation, especially in response to its failure to promote sustainable forest management. In formulating its programs, however, the DFP clearly differentiates between activities within designated forestlands and those that are outside. The application of many regulations is dependent on how a particular forest area is sub-classified, e.g., for protection, production etc. These policies have been developed with the assumption that the forest land designation and sub-classification has been finalized and will not change (Sirait and Fay, 1998).

Various so-called social forestry policies and programs have also been promulgated during the 1990s (Sirait and Fay, 1998). Some demonstrate a

transformation of official thinking, especially in regards to conservation, a concept that was traditionally limited only to forest resources. These days, the official definition of conservation has broadened and now includes economic, ecological and social aspects. Unfortunately, the transformation is still largely rhetorical.

Ongoing research at the International Center for Research on Agro-Forestry (ICRAF), has shown that government policies and programs related to social forestry can be classified into three regulatory groups (Sirait and Fay, 1998). These groups are based on regulations promulgated by the Directorate Generals of the Department of Forestry and Plantations. They are:

1. Directorate General for Land Rehabilitation and Reforestation;

1). Hutan Rakyat - HR (Peoples' Private Forest)

2). Hutan Kemasyarakatan - HKM (Community Forestry)

3). Kawasan dengan Tujuan Istiwewa - KdTI (Area with Distinct Purposes)

4). Aneka Usaha Kehutanan - AUK (Diversified Forest Product)

2. Directorate General for Forest Production;

1). Pembinaan Masyarakat Desa Hutan - PMDH (Community Development by Logging Concessionaires)

2). Pengelolaan Hutan Alam oleh Masyarakat Tradisional - PHPMT (Natural Forest Management by Traditional Communities - or - Community Logging)

3. Directorate General for Forest Protection and Nature Conservation

1). Kawasan Pemanfaatan Tradisional - KPT (Traditional Zone Management)

2). Kawasan Penyangga - KP (Buffer Zone Management)

Brief descriptions comparing the different regulations and programs can be found in Annex-1. Social Forestry Policies and Program in the Outer Islands of Indonesia

In addition to these still evolving policies and programs, some foreign governments and institutions, in collaboration with the DFP, have established pilot projects such as the Social Forestry Development Program (SFDP) of GTZ in Sanggau, West Kalimantan, the Kesatuan Pemangkuan Pengusahaan Hutan - KPHP (Forest Production Management Unit) of the ODA of the British Government, and the Community Logging project of Harvard University in Gunung Palung, West Kalimantan.

None of the above mentioned policies or projects clearly define property rights issues concerning land, trees and other forest resources. The State's legal superiority is largely maintained, especially in identifying indigenous communities that may participate in the Kawasan dengan Tujuan Istimewa (Area with Distinct Purposes) -KdTI Program and in granting rights to these communities. None of the existing policies provide for the recognition of the customary, community-based rights of indigenous communities over land, forests and other natural resources. Except for KdTI, which explicitly mentions that it is

aimed at promoting further conservation of the repong damar system, all of the policies and regulations are biased towards mainstream conventional forest management. This bias is also reflected by the limited application of each policy to a particular forestland classification, such as PHPMT for the production forestlands, HR on the private lands and HKM on the critical lands. Indigenous community resource management systems, by contrast, are not classified simply on the basis of how the government classifies forestlands. This creates a serious constraint for promoting genuine community-based ecosystem management.

V. POLITICO-LEGAL CONSTRAINTS IN PROMOTING COMMUNITY-BASED SUSTAINABLE ECOSYSTEM MANAGEMENT

In the spirit of 'reformation' an ad hoc coalition of students and NGOs named Koalisi untuk Demokratisasi Sumber Daya Alam - KUDETA (Coalition for the Democratization of Natural Resources) was formed in June, 1998. KUDETA was quickly able to identify major constraints that preclude the effective promotion of a just and democratic, community-based system for managing Indonesia's forests and other natural resources. These constraints include:

- the politico-legal concept of the Hak Menguasai Negara - HMN - or state control/eminent domain is the root cause of the de-legitimization of indigenous and other local, community-based rights over the natural resources;
- domination of conventional natural resources management regimes (sectoral approaches, exploitation orientation, etc.) has been systematically destroying indigenous knowledge and sustainable ecosystem management regimes;
- unequal legal access to natural resources at all levels;
- domination of a philosophy of developmentalism which is primarily based on economic growth and political stability;
- centralization of the decision making processes;
- lack of substantive democracy, and;
- anthropocentric approaches to natural resource management.

The concept of State Control Rights (Hak Menguasai Negara - HMN) has an especially powerful influence on agrarian and forestry policies in Indonesia. In reality, HMN vests the state with superior management rights over land, forests and other natural resources (Fauzi and Bachriadi, -). HMN is based on Article 33, Subsection (3) of the Indonesian Constitution of 1945, which provides that "Land, water and their natural riches are controlled by the State and are to be utilized for the maximum prosperity of the people." HMN was formally articulated for the first time in national legislation in Article 2 of the Basic Agrarian Law (BAL) No. 5/1960. It was interpreted to provide the central government with virtually exclusive authority to: (a) regulate and administer the allocation, use, supply, and conservation of land, water and air space; (b) determine and regulate the legal relationship between people and land, water and air space; (c) determine and

regulate the legal relationship between people and legal activities concerning land, water and air space.

As is proper for a newly de-colonized nation, the founders of the Indonesian Republic were eager to reform the colonial stelsel, including the land law. The enthusiasm for developing a new state was driven by the dynamics of different ideologies and socio-political power, which fueled the anti-colonialism movement. In the romantic environment surrounding the new state, the early leaders of the Republic were personified as an incarnation of the power of the people. The formulators of the BAL may never have imagined that the state would become an autonomous structure and/or a tool for the interest of investors, or that it would release itself from its ethical obligations, but this occurred all too often in the ensuing decades. Romanticism about the role of the state likely contributed to the formulation of the concept of HMN as the highest territorial rights over the land. Many legal scholars and practitioners still accept this romanticism, making parallels in understanding HMN and territorial rights among the indigenous communities, as conceived by Van Vollenhoven as beschikkingsrecht (Fauzi, 1998). In this context the changes made by the BAL in the colonial agrarian law, which were meant to provide legal protections for the people, were interpreted to provide superior legal power to the state.

Similar problems are evident in the BFL. In the context of forest resource management, one of the root problems constraining efforts to promote community-based management is the exaggerated power given in the BFL to the Minister of Forestry to control the forests. Other sectoral minister such as Minister of Mining and Energy and the Minister of Agriculture also have such legislatively created powers. These powers are based on the current state-centric interpretation of the HMN as it is articulated in the Article 33, Subsection (3) of the 1945 Constitution and further elaborated in the Basic Agrarian Law 1960.

The application of HMN, however, could be limited. By definition, HMN vests the state with an ethical obligation to promote "... the greater welfare of the people, with respect to the nationality, prosperity and independence of the people and the Constitutional State of Indonesia, which is independent, sovereign, just and prosperous." Among other things, this can be interpreted to mean that the power to implement HMN may be vested in autonomous regions and indigenous communities, in as much as it is deemed necessary and insofar as this does not contradict the national interest, according to the provisions of the Central Government." (Fauzi, 1998)

VI. TOWARD A NEW PARADIGM: DIRECT ACTION BY LOCAL COMMUNITIES

Ongoing violations of indigenous peoples human rights, including usurpation of community-based legal rights to customary territories and natural resources management, coupled with rapid environmental destruction throughout the country, has prompted Indonesian civil society to promote a new paradigm. It

directly challenges the concept of HMN, including the central government's assertion of full legal authority to claim, control, posses and regulate all forest resources and forest land management systems (Munggoro, 1998).

Cruel behavior by government, the military and private companies has also generated much community resistance. This is manifested in various direct actions such as the burning of a number of industrial plantation compounds in West Kalimantan in 1993 and 1995, confiscation of logging concessionaire properties in Mentawai and Irian Jaya, and enforcement of adat-law sanctions by many communities against private companies and government officials in Kalimantan and Sulawesi. It also includes a class action lawsuit in a federal district court in New Orleans (USA). The suit was brought by an Amungme woman against Freeport McMoran, a US mining company operating in Irian Jaya. It alleges gross human rights violations against nearby indigenous communities over the last 30 years.

Despite facing intimidation and harassment, there are still a significant number of communities able to conserve and maintain sustainable community-based ecosystem management. This includes, for example, people in Krui, West Lampung, who develop the repong damar, the Batak in South Tapanuli (North Sumatra) with their salak, the Dayak in West Kalimantan with their traditional rubber gardens, the Dayak Bentian in East Kalimantan with their knowledge of rattan cultivation, and the Kaili people in Central Sulawesi with coffee farms. In most cases, these indigenous eco-system management regimes appear to outsiders as part of a "natural forest." While indigenous agro-forestry may have similar characteristics with natural forests, however, it is not merely a gift of nature. It is a product of human labor and commitment to sustainable ecosystem management (de Foresta in Munggoro, 1998).

VII. TOWARD A NEW ARADIGM: CIVIL SOCIETY MOVEMENTS

There is also growing support in Indonesia's civil society movement for community-based forest management. This support is not limited to struggles for local autonomy and control over forests and other natural resources. It is also includes gathering information and redefining knowledge on forest issues and civil society's role in advocating for democratic and sustainable natural resources management on local, regional and national levels (Munggoro, 1998).

Starting in 1993 with informal discussions and continuing in 1995 with an initial joint project for promoting community-based forests system management in Kalimantan, Sumatra and Jakarta / Bogor, a number of NGOs and concerned individuals decided to established the Consortium for Promoting Community-based Forest System Management (Konsorsium Pendukung Sistem Hutan Kerakyatan - KPSHK) in early 1997. The primary activities consist of community empowerment, case study documentation and public education.

KPSHK's vision is to promote local people's sovereignty over natural resources, especially the forest, so as to achieve sustainable community-based

management. Based on this vision, KPSHK's goals are to: (1) revitalize, research and document sustainable community-based management activities; (2) identify and support natural resource management concepts that are based on local knowledge, are appropriate to the local ecosystems, and guarantee pluralism; (3) develop networks for advocacy and campaign purposes; and, (4) reform natural resources laws and policies, especially forestry related ones, so that they are based on respect of local peoples' sovereignty and recognize and protect human rights. See Annex-2. Key Result of the Project "Developing Community Based Forest-System Management Institution in Indonesia" for further description of the Consortium's framework.

Another network promoting community-based forestry is the Forum Komunikasi Kehutanan Masyarakat - FKKM (Indonesian Communication Forum for Community Forestry). It was established in mid 1997, with significant support from the Ford Foundation, to provide opportunities for academics, government officials, international organizations and NGO activists to communicate with each other and become more effective. In response to recent political changes in Indonesia a workshop was held in June 1998. During the workshop, FKKM formulated its vision, part of which is to promote "A just and democratic forest management policy for the welfare of local communities based on ecosystem and resource conservation".

Parallel with KPSHK and FKKM are other NGOs networks with different foci of interest but shared concerns regarding natural resources degradation and indigenous and other local community rights. Some of them are:

- Konsorsium Pembaruan Agraria - KPA (the Agrarian Reform Consortium), which is a network of almost 100 NGOs. The focus of their work is to promote: (a) legal pluralism especially on land tenure as a way to protect the indigenous tenurial systems, and (b) land reform programs especially for the landless peasants.
- Wahana Lingkungan Hidup Indonesia - WALHI (Indonesian Forum on Environment)
- Jaringan Tambang - Jatam (Mining Network)
- Jaringan Kerja Pemetaan Partisipatif -JKPP (Participatory Mapping Network)
- Jaringan Pesisir dan Laut -Jaring Pela (Coastal and Marine Network). Established in February 1998, it aims to empower sustainable community-based marine and coastal resource management in Indonesia.
- Bioforum, a network of NGOs established in 1994 during the Biodiversity Convention's Conference of the Parties (COP III) in Jakarta. Its focus is to monitor implementation of the convention in Indonesia.
- Jaringan Pembelaan Hak-hak Masyarakat Adat - JaPHaMA (Indigenous People Rights Advocates Network), a network of NGOs and individuals founded in 1993 to promote and advocate for indigenous peoples' rights in a holistic way.

A synergic 'ad-hoc' coalition of NGOs and individuals networks concerning natural resources issues was formed after Suharto step down. The first action taken by the recently organized KUDETA (Coalition for the Democratization of Natural Resources) was to highlight the fundamental causes of natural resources destruction collectively through a peaceful demonstration at the Department of Forestry building in Jakarta. Since then a number of consultations have been conducted. The strength of this loose coalition is its progressive perspective in holistically thinking about natural resources problems in Indonesia, in contrast to existing sectoral approaches, and its indirect function as a informal coordination forum of the sectoral networks. As an ad hoc coalition, however, KUDETA does not intend to become a permanent institution.

VII. CONCLUSION

Although community-based natural resource management is widespread in Indonesia, and has proven to be economically, ecologically and socially appropriate both for local and national interests, state laws and polices provide insufficient recognition, protection and support. Mainstream laws and policies on natural resource management are still dominated by: (a) a state-centric paradigm which provides the central government with exaggerated rights over natural resources which are, in turn, used to violate indigenous peoples' rights and to undermine their local knowledge for sustainable forest ecosystem management; (b) sectoral biases; and, (c) conventional natural resource (forest system) management sciences that overlook local capacities and contributions.

Existing so-called social forestry policies fail to provide sufficient legal recognition for community-based forest ecosystem management since there has not yet been a fundamental reformation of the Basic Forestry Law and it's implementing regulations.

There is growing concern within Indonesian civil society, including demands for fundamental reform of laws and policies related to natural resource management. This includes calls for: (a) a redefinition of the relationship between the state and local people, including the abolition of Hak Menguasai Negara - HMN (State Control Rights); (b) transforming forest management laws and policies to support pluralistic community-based natural resource management; and, (c) a democratic, just and equal allocation process.

ACKNOWLEDGEMENTS

The author is fully responsible for the content of this paper, but would like to thank some friends among the indigenous peoples who have consistently practiced ecologically sustainable forest resource management, friends at KUDETA especially those who attended the July 10-11 workshop, and especially Martua T. Sirait, for their valuable insights in the preparation of this paper. Also for Owen J. Lynch for his valuable inputs and editing.

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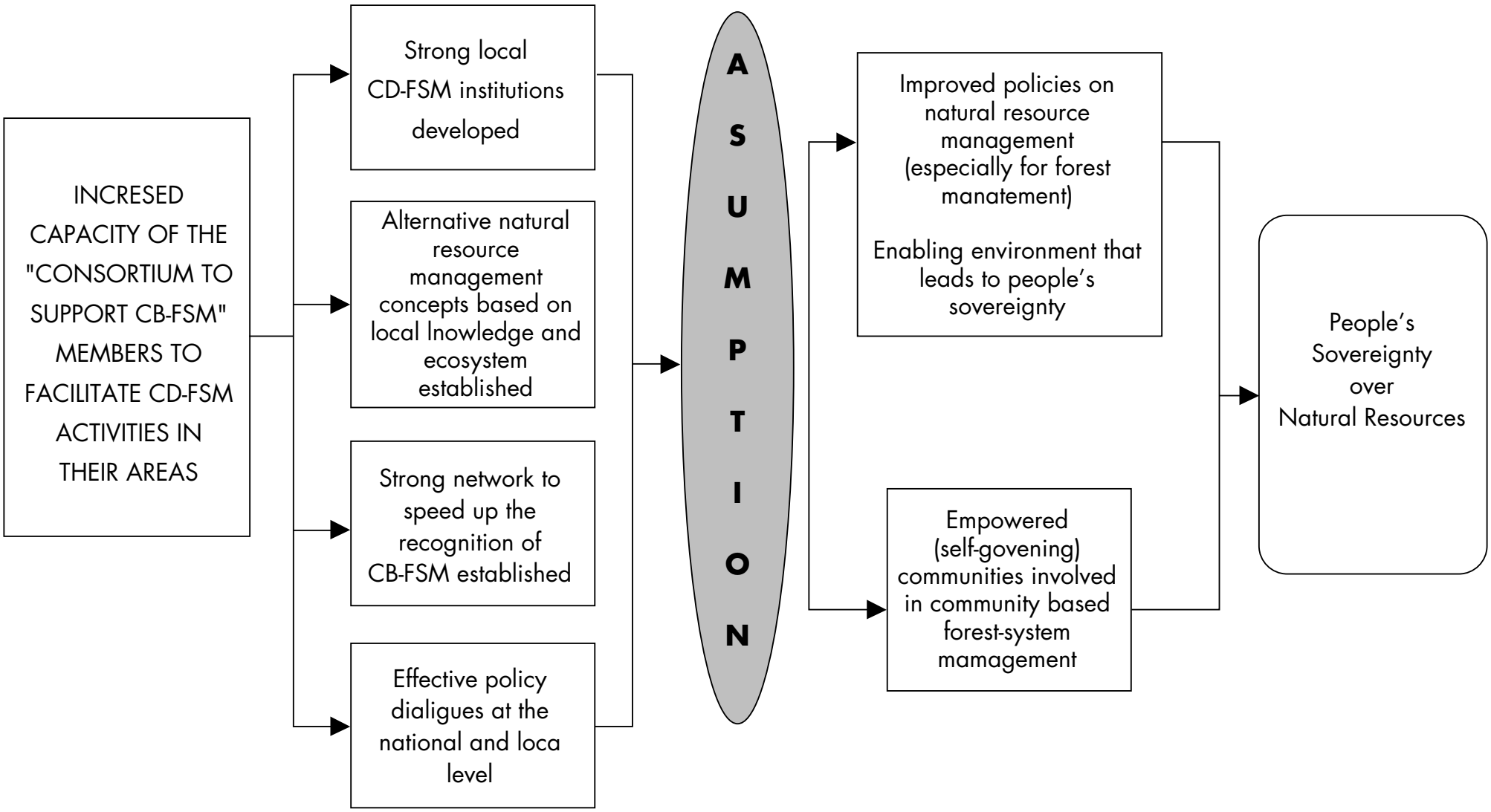
Annex-2

KEY RESULTS OF THE PROJECT

"DEVELOPING COMMUNITY BASED FOREST-SYSTEM MANAGEMENT (CB-FSM) INSTITUTIONS IN INDONESIA"



Country Reports of Forest Policy

FORESTRY POLICY IN CHINA
THE PAST, PRESENT AND FUTURE

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Forestry in China is an essential component of the world forestry. As the biggest developing country with a long history of civilization , China has experienced a long time forest utilization and management. Its present deficient forest resources has to support the fragile ecololical environment upon which relied by a huge population. An environmental- sound and sustainable management of forests should be implemented for the present society and the future generation.

I. BACKGROUND INFORMATION ABOUT CHINA

China is located in the eastern part of Asia and to the west of the Pacific Ocean. With a total land area of about 9.6 million Km^2 and a huge population of 1.2 billion people, China has rich biodiversity and unique socio-political system. For the workshop participants can get a better understanding about the forestry in China. The paper will provide a brief introduction about China's history, physiography, socio-economic condition, which lead to its own concept of its forest policy-making.

1. History of the Country

China has a long history of over 5,000-year-civilization (with written records) and experienced almost all of human socio-political systems or types. During its thousands of years' social evolution, it occurred over 30 dynasties, more than 150 emperors, left glorious historic heritages formed an unique cultural, religious, philosophical and political traditions which still influence the present people and their lifestyles. Through dynasty succession, land ownership changing, wars, farming, housing and other kinds of resources exploitations, its natural resources especially forests suffered serious irrational utilization and destruction for long time, and therefore the land has degraded and ecological environment became very fragile.

2. Topographical and Physiographical Characters

China has vast territory with 20,000-Km borderline and18, 000-Km coastal line. It is neighbored with 15 countries. The difference in geographical positions and interlacing latitudinal, longitudinal and vertical lead to the difference in its physiographical elements. Its whole land can be roughly divided into three major physiographical regions listed as follows.

1). The Humid Monsoon Region in the East

Dominated by monsoon climates, this region is significantly characterized

by simultaneous monsoon and hot rainy season. The difference between the north and the south results in nine temperature zones ranging from the cold temperate to tropical zone. Majority of China's forests grows in this region.

2). The Arid Region in the Northwest

This area featured by drought and inadequate moisture is located the west of the 400mm isohyet with arid steppe and desert steppe, only high mountains in this region can grow trees and forests

3). The Frigid Alpine Region in Qinghai-Tibet Region

The extremely cold weather features this region. Low temperature prevents moisture and results in alpine steppe, meadows, and frigid desert. Forests scatters merely in gullies.

Though geographical complicated, the topography of China can be imaged as "a ladder", the altitude of the land is progressively lower down from the dry west to the humid east.

3. Socio-Economic Condition and Political System

1). Socio-Economic Condition

China is the biggest agricultural and developing country in the world. Although it has vast territory, It is still badly deficient in natural resources, which restricts its social and economic development.

Population	1.2 billion
Urban Population:	32%
Rural Population:	68%
GDP (1997) :	7,477.2 billion RMB
GDP annual growth rate:	8% (1996-1997)
Urban income per capita:	5,200 RMB
Rural income per capita :	2,100 RMB
Farm land:	1.3 million Km^2
Grain production:	4,925 million tone

The information above implicates that the rapid economic growth would make great pressure on the ecological environment. In the future 2050 years. China will definitely face a great deal of challenges to meet the balance of its social, economic, environmental development.

2). The Present Political System

Different from most other countries, China's political system is "Socialist with Chinese characteristics". Reform, open to the outside and focusing economic development are its three key features.

The current political system defines that the land ownership belongs to the state and collectives (both are public -owned systems) which make the forest policy and legislation are quite different from the other countries.

II. FOREST RESOURCES IN CHINA

The statistics from the Fourth National Forest Resources Inventory (1989-1993) reveal the current situation of forest resources as follows:

The land area for forestry purpose:	262.89 million Km^2
Forested area:	133.7 million ha
Forests:	113.7 million ha
Deciduous:	57.1 million ha
Broadleaved:	56.6 million ha
Economic woodlots:	16.09 million ha
Bamboo:	3.91 million ha
Forest coverage:	13.92% of the total land
Forest area per capita:	0.114 ha
Nature Reserves:	799 (1956-1996)
	With 71.85 million ha (7.2% of total land)
Forest parks:	752 (6.6million ha)

Comparing with the results of the Third National Forest Resources Inventory (1984-1988), the forested area increased by 8.03 million ha., enjoying an annual average increment of 2.04 million ha, or 1.65%. Forest cover increased by 0.94% with an annual average growth of 0.20%. Simultaneously with the expanded forested area and upgraded afforestion, the area of established plantations expanded steadily. The existing area of retained plantation in China now is 342.52 million ha with volume of 33.79 million cubic meter.

III. FORESTRY POLICY IN CHINA, A REVIEW AND PROSPECT

Whenever socio-economic stage is, the forest policy can certainly influence the evolution, utilization, conservation and development of forest resources. This chapter discusses the past, present and future forest management and forest policy.

1. Exploitation and Utilization, Main Policy of the Past Forest Management

About 10,000 years ago, apart from the northwest and plateau with vast grassland and sparse forests, the other part of China was covered densy forests. Human at that time depended mainly on "natural food collection" and hunting. 8,000 - 7,000 years from now the ancient farming emerged with tiny disturbance on the forest. During 2,900 - 200 B.C, known as The Bronze Age, farming, housing, palace-building, fuel requirement and wildfire caused damage of the natural forests, but not too much. From 200 BC to the early of this century, due to population expansion, tool innovation, large scale of agricultural activities, ceaselessly housing, urban expanding, wars, fires, and irrational cutting, the nature forests decreased at an accelerated rate. Even though some philosophical sparks of rational forest management and several dynasties did have some regulation and agencies for looking after the forests, the predominating policy on the forest had been cutting with little planting. The protection could only occurred in those "Forbidden forests", "Royal hunting areas" "Religious Forests" and other special protected areas. The statistics from inventory conducted in 1940s show that only 8% of the land covered with forests. That reminds us the poor situation of the resources and little proper policies for forest management during the past ages.

2. Afforestation, Conservation Rational Utilization, the Policy Prevalent During the Recent 20 Years

Since the founding of the P.R.C. in 1949, the Chinese Government has given priority to tree planting and forest conservation aiming at improvement of timber supplies and ecological rehabilitation. From 1950s to 1970s, the prevalent policy on forests emphasized silviculture and sustained yielding, and "timber" was basis of most policy-making. During 1980s the forest policy has changed to emphasize "four transformation" as:

- shifting from previous utilization of natural forests to silvicultural treatment aiming at cultivating high quality plantations;
- shifting from merely timber production to diversified management and integrated utilization in an effort to readjust the composition of the forestry industry;
- shifting from an extensive management to an intensive management based on scientific achievements;
- shifting from forest managed only by forestry sector to a multi- sector forestry by promoting initiatives of the whole society for forestry development.

Under the above strategies and policy principles, China conducts the "Mass afforestation Campaign" and several huge programs of afforestation across all parts of the country.

1). The National Compulsory Tree Planting Campaign

In December of 1981, the Congress adopted "the Resolution on Carrying out the National Compulsory Tree Planting Campaign"aiming at stipulating that

citizens are obligated to plant 3-5 trees every year, or devote equivalent amount of effort related afforestation activities. The campaign had over 20 billion tree planted and helped arouse the public awareness of the forest and environment.

2). Timber Forests Establishment

China decided in 1988 for 30 years' establishment of 20 million ha of timber plantation so as to relief the national forest from the pressure of the timber consumption needed its economic prosperity. At present, the total area of this kind of plantation called as "fast-growing and high-yielding plantation" reached over 3.5 million ha.

3). The Three North Shelterbelt

Known as "Green Great Wall,"and stretching over 551 counties of 13 provinces in Northeast/North and Northwest China, covering a total area of 4.069 million km^2 (42.2% of China's total land) and lasting 73 years, the program is expected to establish 35.08 million ha of plantation for protecting the farmland, pasture, improving the erosion in the loess plateau. More than 13 million ha of plantation had been established.

4). Afforestation along the Upper and Middle Reaches of Yangtze River

From 1989, the program is targeted to establish 20 million ha of forests within 30-40 years to improve the ecological environment for 18.8% population and 33% of the country land. Over 5.5 million ha of plantation were already planted.

5). The Coastal Shelterbelt

The program stretches as long as 18,000 km of coastal line and is planned to increase 3.56 million ha of plantation by the year of 2010. It has completed over 1.6 million ha of plantation.

6). Plain Farmland Sheltbelt

The plan is to build up shelterbelts to protect 918 plain counties with 15% of China's total land, 45% of its cultivated land and 50% of its population.

7). The National Program to Combat Desertification

Desert and decertified land occupies a third of China's total land, the program (1991-2000) is planned to control 6.66 million ha of decertified land.

8). The Taihang Mountains Afforestation

The objective is to reforestate 5.313 million ha with a forest cover of 43.6% in the project area for shelter Beijing, Tianjing and North-China Plain.

Over the past 20 years, forest policy also paid a great attention to the management and conservation both state-owned and collective forests. The government has conduct reforms of the ownership and managing right of the forest resources. It issued contracts to the rural residents for responsibility of land afforestation, made a series of code of forests management, conduct strict inspection on AAC implementation, built up forest police to protect the wildlife

inhabitants in forested land, required the industry adopt innovated technology and encouraged the whole society involving in forestry issues. As the return, the forestry enjoyed a positive changes especially the area coverage and volume of forest both increased greatly. It is easy to be impressed that: in recent 20 years, the forestry in China has been making a feature of "Afforestation", "Greening"and "Conservation". It also seems that the echo of "planting" has been reverberating in thewhole country's sky. Forest policy has focused on the last reforestation and natural conservation. P.R.C inherited a heavily populated, economic-undeveloped, ecological-degraded land. It had to and will have to work for a rehabilitated environment.

3. Forestry Sustainability, Strategy and Policy for the Future

Although great progress has been made in recent years,China's forestry still meet some dilemma: how to revitalize the forest industries which retreated for resource protection; How to find alternate way replacing the local traditional lifestyles which relying merely on timber logging, hunting, fire-farming; How to identify the local ownership and benefit of forests under the public-owned system; How to draw the local people to join in ecological-improving efforts with little economic interests; How to build up regulations, principles, guidelines, incentives for sufficient and healthy participatory forest management; How to provide the people with easily-understandable knowledge, information about our forests and wildlife. Our foresters, professionals, educators, policy makers and legislators face a great deal of challenges to steward our forests for the future generations.

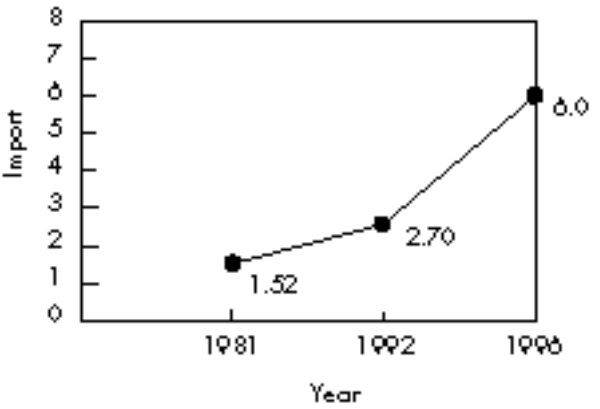
In the early of 1990s, the field of forestry in China accepted the concept of sustainable development and began to conduct key researches about the principles, strategy, criteria and indicators of sustainable forest management. The leading forestry NGOs, scientists, social activists and journalists join the efforts of spreading the idea of sustainability and trying to promote the establishment of healthy, participatory management systems. The government issued Agenda for 21st Century and Forestry Action Plan. The Congress advised the Forests Act, other legislative regulation on environment, water, wildlife conservation has been adopted to protect the natural resources. A lot of small mills for pulp and paper-making, logging, timber sawing will be closed. Cutting in natural forest areas will be limited or forbidden. The right of local people or communities will be enhanced to share the management and employment. Legislative enforcement will be the priority in future forestry development.

IV. TIMBER TRADING OF CHINA

As mentioned previously, China is a country with deficient forest resources. The forests managed for timber production are 88.125 million ha with stocking volume of 7.57 billion m^3. But only 1.36 billion m^3 can be cut for timber. The annual amount of timber consumption is 0.32 billion m^3/year. That means the available timber supplies can only ensure about 5-year-demand(Hong Jusheng, 1997).

Table 1	billion m^3	
Year	2000	2010
Demand	0.26~0.28	0.30~0.32
Potential supplies	0.142	0.177
estimated deficient	0.12~0.16	0.13~0.14

The estimated demand of timber by the year of 2000 will be about 0.26 - 0.28 billion m^3 and by 2010, 0.30 - 0.32 billion m^3, but China's own capability can only supply with 1.42 and 1.77 respectively.



To meet its own demands, China will have to import timber and other wood products . It is estimated that by the year of 2000 the amount of wood product imported from other countries would be 0.2 billion cubic meter due to the increasing consumption and decreasing cutting from its own natural foresters.

V. LEGISLATION AND GOVERNMENT ADMINISTRATION FOR FORESTS

The legislation related to forests issues was stressed before 1980s. The governmental policies, guidelines regulated the forest management at that time. Since the reform began in the early of 1980s, China has award that laws, acts , resolutions, guidelines should be the most important way to regulate government and individual rights ,roles, responsibilities, their management activities of forest resources. Up till now, a series of legislative code related to forests has been already put into act as follows.

1. Constitutional Clauses

Several clauses in the Constitution P.R.C are about forests, wildlife, historic heritage and their conservation. It says: "the state protects and improves its living and ecological environment, prevents the pollution and other natural damage", "ensures the rational use of the natural resources, conserves those valuable species, prohibits any damage of the natural resources".

2. Forests Act

Forests Act was adopted in 1981 and revised in 1998. It identifies the ownership of forest resources including the land forested, regulates the rights, responsibility, obligations, limitations of the forests administrations at all levels, industries, tree farms , tenure units, individuals who manage the forests resources. The compensation requirements, penalties on the destruction of forests and wildlife habitats also include in the Act. It is the basis and general guidelines for the whole forestry.

3. Act for Wildlife Conservation

4. Regulations for Governing the Management of Natural Resources for Forestsand Wildlife

3. and 4. are the legislative basis for the conservation of wild animal and plant species including their habitats. Both of them identify the regulations for nature reserves , national parks and the local residents who live in the protected areas.

5. The Environment Act

6. Act for Ocean Environment Conservation

7. Act Grassland Conservation

8. Regulation of Reproduction and Conservation of Aquatic Resources

9. Regulation for the Conservation of Natural Medical Resources

The government agencies are responsible for the legislation enforcement, administration, inspection, and services for forest management and conservation. The governmental structure in charge of forestry is as follows.

Central government ..... State's Administration for Forestry

Provincial ..... Provincial Departments of Forestry

Regional ..... Regional bureau of forestry

County ..... County bureau of forestry

Township ..... Forest stations

VI. PUBLIC PARTICIPATION IN FORESTRY

As the fundamental principle of sustainable forest management, public participation is playing an increasingly important role in forestry and environment development, and is vital to meet the basic principles of sustainable development equality, limitation, harmonious cooperation and social support to natural resources management. But traditionally, the majority of Chinese people had little right and awareness of participating processes of resource management. Since the founding of P.R.C, the land is owned by the state, or the collective, i.e., public.

The governments at all levels manage all the resources including the land "on behalf of" the public. In fact, the local people didn't have much interests and power to involved in the process of decision-making of the public forest management or forestry development. That certainly caused the forest management unsustainable.

1. NGOs, and their Involvement in Forestry and Environment Development

In China, NGOs including their sections, networks and members, have been playing an increasingly important role in the national and regional strategy, policy, decision-making processes concerning forestry development. These NGOs, mainly set up for their specific missions, with 100--75,000 members and 5--80 years' histories, influence the policy-making and the initiation of those large scale of afforestation and reforestation projects. Among them, the following NGOs are the main stems of the participation in the national forestry issues.

a: Chinese Society of Forestry(CSF)

b: China Wildlife Conservation Association(CWCA)

c: Chinese Society of Water and Soil Conservation(CSWSC)

d: China's Association for Combating Desertification(CACD)

e: National Fund for Afforestation(NFA)

General speaking, the NGOs listed above have their own sections or technical committees linking with local governments and communities . They involve in the initiation, designing, planning and implementation of projects, and work for the public education and awareness enhancement as their main interest . Their technical services in forestry or natural conservation are numerous in the whole countries. Here are examples for showing the NGOs participation in the forestry or environmental improvement efforts at national level.

Example A: National Program on Soil and Water Conservation Forests along the Upper and Middle Reaches of the Yongtze River

The Yongtze River is the longest river in China with a total length of 6,300 km, the area and population in its drainage area account for 18.8% and a third respectively of China's total. Over a long period of time, the inappropriate farming , excessive and illegal cuttings caused severe destruction of the vegetation and deterioration of the ecological environment. The area of eroded land has reached 560,000 ha, and the annual volume of eroded soil reached 2.24 billion tones. Some area even becomes stony and sandy. In the early of 1980s, Chinese Society of Forestry incorporated with about 20 national NGOs in the fields of geography, agriculture, ecology, hydrology, socio-economics, history and culture and sponsored a nationwide debate "Yongtze? or the Second Yellow (River)". Thousands of professionals and public participated in the debate and influenced the establishment of the program mentioned above. CSF organized several national technical conferences, expert-tours on the various topics and issued lots of "Recommendations and Suggestions" about how to run the whole projects.

During the past 20 years, CSF participated almost all of key policy making and huge projects of the states' forestry development. It appealed to re-open the Chinese Academy of Forestry(CAF),advocated to realize its proposals for re-building and improving the ecosystems in the whole country, it set up the first network for public environmental education especially for the children and the youth. It helped the government to form the national strategy for the forestry toward the 21st century.

Example B: The Three-North Shelterbelt Development Program

Background: Three North: Northeast, North, Northwest.

Project area: 4.069 million Km^2 (42% of the total land)

13 provinces (Autonomous regions or municipalities)

12 stretches of deserts, sandy land and gobis / 1.33 million Km^2

NGOs and scientists in forestry and environment called on to initiate the project the the late of 1970s and finally approved by the Central government. CSF and CSWSC deeply involved in the whole process of its initiation, planning, management, and implementation, and several international NGOs such as WWF also provided some assistances.

NGOs participate in the national forestry and environment through:

a. organize forum or debates to focus on the national attention to a specific issues;

b. submit the suggestion or "letter of the appeal" to the governments or legislation;

c. involve in the process the policy or long term strategy making

d. Sponsor technical workshops, courses, field tour, and researches.

With their national or regional influences, NGOs participation can be more easily and effectively accepted by the governments or industries, and the public intend to join in their campaigns, discussions, activities such as individual planting, tours to discover the nature.

2. Academia, Universities and their Participation

Academia and universities (the technical schools also included in this paper) are mainly responsible for the reseach and professional education. In China, most of scientists and leading experts in forestry work in academia, institutes, technical centers, universities and colleges. Their researches link the process of decision-making and forest management through providing the information and knowledge to the society. During policy or strategy drafting, various panels or groups of scientists and specialists carry on key researches, information collection and analysis. For example, to revise the Forest Act, the legislator must invite hundreds of scientists for suggestion. All proposals or application of big forestry projects or programs must be widely discussed or consulted for several times.

some universities involve in national or regional program.

3. Urban Residents' Participation in Natural Resources Management

While enjoying the economic growth, the urban residents pay more attention than before to the air, and water pollution as well as natural resources conservation. They are keen to some expert's warning about the fragile ecological systems and intend to involve in the natural resource management. Currently, the urban youth, children and women have stronger awareness on natural conservation. Some of them, especially those educated people occasionally take part in the discussions and displays about wildlife conservation. A study made by the author of this paper showed that more than 40% of urban educated people in Beijing are interested in forest conservation and 20% of them are willing to involve in or join in the efforts of ecosystem improvement. It is very popular recently that young couples and children plant trees for their special commemoration, and some urban groups and small NGOs organize and sponsor camps, Eco-tours, tree-planting and donations for species protection. Although some urban residents have interests resources management. They haven't proper channels to participate in the process of policy-making.

4. Local Residents' Participation

The local residents and communities who rely on or relate to the forests are very important to practice sustainable forest management. Since rural reform in 1980s, the local resident has got more right to manage the forests, and in 1990s , along with the prevalence of the concept of forest sustainability, the local participation has been emphasized.

1). Local Participation in Management of State-Owned Forests

China's state-owned forests are mostly managed by state forest farms or industries. If necessary, the local labors may be part-time employed for silviculture, logging or other forest practice. In the past, local residents seldom involved in planning of forest management. Lack of local participation resulted in ineffective utilization, frequent illegal cutting, ecosystem degradation and lower and lower local interest in forest management.

In 1981, a national policy of forest responsibilities was adopted. The responsibilities, right and benefits of the local people were included in forest management of the state-owned forests. That marked the beginning of local communities' participation in state-owned forests. The policy includes:

- the demarcation of land for individual and group management;
- the description of benefit;
- responsibilities concerning forest protection;
- prohibition on forest clearcutting for farming.

The government agencies in charge of forestry signed contracts the locals for 1015 year-period and carried out inspection and issued certificate(license). The

legal backing for this policy in the "Decision on Several Issues Relating to Protection of Forests and Development of Forestry"issued by the central government. In the main and large forest areas, most of the local resident was historically the employees with their family members of the state-owned forestry industries. They involved in the management of the forestry, but most of them can not involve in the decision-making process.

2). Local Administration in the Collective Forest Area

Comparing the state-owned forest, "collective forests" , which means that the ownership of the forest belongs to "collective"(similar to the local communities). In the past, collective forests run by some forest farms and the local people seldom participated in forest management. Since 1980s, some important reforms took place in the collective forest management. The local farmers has got the "real ownership"of the "collective forests"and they can signed the contracts with the local authorities for afforesting the barren land and thus own the forests planted by them. They became interested in participating in the natural resources management of their residential areas. The participatory ways of the local people in the resource management are mainly as the follows.

A: Sign contracts of responsibilities for the greening, reforestation and forest management of the local areas.The types of the contracts can be issued to:

a. an individual;

b. a family;

c. a group joined by several individuals or families;

d. communities.

The contracts can generally last 1550 years and the ownership of this planted forest can be hired to their children.There are about a million of this kind of contracts signed, and woodlots grew up during the past 20 years. But this causes a considerable problem about the biodiversity. The local people pay their main attention to the economic trees such as pines, cupress and fruits species but little attention to the ecosystem-improvement, even some valuable bushes were destroyed for fruit orchards.

B. Local regulations: way of local community participation in forest management and conservation

In the collective forests area, to better manage the forests, the local people(village)usually formulate some community regulations after their own meetings for some consensus or agreements which regulate the responsibilities,limitation and penalties of violation. This can ensure the forests be run properly by the local communities under the general principles of the legislation.

3). Local Partnership in Nature Reserves and National Parks

Most of China's nature reserves and national(and provincial) parks locate in

remote areas but there are still live some people inside or vicinities. The current legislative regulations require that the reserves or parks administration should consider the local people and their lifestyles. The representatives of the local people would be invited to take part in the meetings to show their own ideas or suggestions.

VII. CONCLUSIONS

A: Fragile ecological environment caused by historical reasons forces the presnet generations to rebuild healthy ecosystems through "greening" and "planting".Therefore, afforestation and conservation will definitely be China's main efforts in forestry and environment development.

B: After period of legislation, forests policies and legislation should be more systematic and operational. The legislative enforcement will be the key factors for better forest management and conservation.

C: The future policy for the state development will have to be based on the pressure from population, environmental capacity and increasing economy. More and more attention and efforts to natural resources management will be paid in its policy-making or national strategy.

D: The role of governments in resource management will be changed from direct-management to indirect-management through technique services, law enforcement and inspections. It means that local communities and private industries will get more rights, charters or contracts to manage forests.

E: The growing urban public interests in environment issues needs more easily-acceptable information, education and legal channels for the public to involve in and support to natural resources management.

F: In rural areas, the local participation is far to enough. The local attention is paid to getting more economic benefits instead of ecological health. The better local participatory management need:

- more education about the values of forests;
- economic encouragement to multi valued forest management;
- stable ownership or right so that protects the local resident interest, orenthusiasm to afforestation and conservation;
- stronger legislative enforcement on illegal cutting and other damage of natural ecosystems;
- more chances for the local residents can share equally the right of forestsplanning and management.

G: Research, discussion and experiment about the public intend public education should be emphasized. The government, scientists and forestry professionals should be more interested in understandable information providing and

technology spreading.

H: More case studies scattering several representative (social, cultural, nationalities, eco-region) should be conducted for finding or building a series of operational mechanisms or ways to ensure that all partners including local residents can equally share the right, responsibilities, ideas of natural resource management. These kinds of case studies need to be widely joint by government, legislators, professionals, managers, educators, journalists, and international cooperation and assistance are very important as well.

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

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I. BACKGROUND

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

II. COUNTRY DESCRIPTION

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

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

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

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

III. OVERVIEW OF FOREST DEVELOPMENT

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

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

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

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

IV. FOREST POLICY DEVELOPMENT.

1. Policy on Land Allocation.

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

2. Re-Afforestation Policy.

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

aspect up to the present time and the government continues it commitment towards in the future. In the decree No169, it states that all-existing forest and forestland are the property of the National community, presented by the state. Tenure of the tree, natural forests and forestland was authorized by Ministry of Agriculture and Forestry, otherwise its remains the property of the state. Any tree or forest planted and maintained by individual or groups from their own resources, becomes their own property, which may be managed, used, transferred and inherited. The state also recognizes the right to the use and collection of fuel wood and non-timber forest products. The decree No 186 and forest law emphasized the promotion of the tree planting, protection, and rehabilitation of natural forest. Tree planting may be done by individual, community, and enterprise, which is local or foreign. Foreigners can hold and concessions and are thus obliged to under take joint concession with enterprise. Up to100 hectares of land for plantation can be allocated and approved by district authorities. If they use larger tracks, they need provincial level approval. Land tax as well as resources tax will not be charged in the case of wood well-stocked tree plantation.

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

List of plantation

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

3. Policy on Forest Conservation and Watershed Management

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

Management.

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

List name of National Bio-diversity Conservation Areas

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

Source: Department of Forestry, MAF

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

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

4. Wood Based Industry Policy

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

5. Forest Research Development

1). Background

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

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

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

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

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

2). Forestry Research Strategy up to Year 2010

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

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

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

3). Short Term and Long Term Priorities

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

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

Short term priorities

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

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

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

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

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

Longterm issues

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

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

(i) Product development research in collaboration with the private sector;

(ii) Development of human resource capability, especially in forest products chemistry; and

(iii) Establishment of processing capacity, largely through private sector initiatives with support from government.

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

(i) Charging for the services provided by research units / institutions based on "user pays principle". The scope for user funded research has increased substantially due to the entry of private sector.

(ii) Creation of a " Forest Research and Development Fund", as has been done in a number of countries and earmarking it exclusively for research and extension will significantly ease the budgetary constraints. Resources to the Fund can be mobilized through a levy or special tax on the value of logs and sawn wood exported from the country.

6. Human Resource Development

1). Current Situation

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

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

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

2). Vision for The Year 2020

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

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

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

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

3) Strategies to Realize the Vision

a. The current training infrastructure within Laos which includes the National University, Technician Training Schools and Forestry extension centers will be upgraded to ensure that their curriculums and teaching staff are able to deliver a product that is suited to the new reality. In particular this will be client focused and therefore producing trainees who are able to respond to needs at the local level.

b. Staff will be reallocated within the department to ensure that all Provinces and Districts are adequately covered.

c. District staff will be encouraged to support Forestry volunteers as their prime Function to ensure that villagers and farmers are able to interact directly with this first line of technical support. The development of a mentoring process for Forestry volunteers will be given a high priority.

d. Existing Donors projects and new projects will have to demonstrate the competence development aspects of their program and the relevance to the overall HRD strategy.

e. The development of twining links between training and research institutions with the ASEAN region will be given a high priority in the next five year period as a mechanism for accelerating the rate of skills transfer.

f. Women occupy 51% of the population and 50% of the workforce in Lao. They represent a latent talent that has not yet been fully realized. The development of a gender strategy will seek to find mechanisms to use women both as Extension staff and trainers, as well as increasing their representation within the forestry sector.

g. English language training will continue to be given a high profile to ensure that the Forestry sector is able to access and participate in regional and international initiatives.

h. The development of a functioning Personnel and Management Information system will be used as a tool to support the above initiatives and to monitor progress on a regular basis.

V. COUNTRY DESCRIPTION

1. Natural and Socio-Economic Condition.

- Total area 236,800 sq km.
- Population 4,581,258(population census 1995)
- Population density19.35
- farmers 85%
- GDP <200 USD
- GDP 58% come from agriculture

2. Geographique Condition.

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

3. Forest Overview.

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

- 1991 National action plan

4. Main Forest Policy

- land allocation

- Re-afforestion

- Forest conservation and watershed management

- Wood based industry

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SOURCE OF TABLE

Agriculture statistics 1976-1995 (MAP,1996)

Tropical Forest Action Plan (MAP, Main report 1990)

Watershed and wildlife Conservation on NBCAs

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

EMPOWERING COMMUNITIES THROUGH SOCIAL FORESTRY

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I. PROBLEMS

Forest resources management in Indonesia since 1990s has a critical question. Many observers' criticism related with the facilities enjoyed by Logging Forest Concession (HPH) since 1970s and Industrial Forest Plantation (HTI) since 1989.[1] Apparently, the critiques contain two reasons. First, most of the owners of the concessionaries have a special relationship with the ruling groups in the government, compare with the professional groups on forest management, which have attention to ecological affairs rather than economics and profit orientation.

Second, by the permission of HPH and HTI operational in many provinces, the government certainly receives a lot of income for reboisation fees and forest results funds (IHH). Although, the economic benefits for the government from forest exploitation is fewer about 20 percent compare with HPH's owners that reached 80 percent. In contrast, in reality most of HPH and HTI owners do not care about ecological issues, sustainable forest management and social problems that cause a huge deforestation. The forest fire in Indonesia which happened in 1997, the contribution of HPH and HTI, besides big estate plantations through land clearing are also significant to be considered.

Conflict between forest dwelling people and HPH about land use rights have been widely reported to occur in Indonesian outer Islands.[2] For example, among two forest dwelling communities: Tabbeyan and Sentosa, in Irian Jaya occurred in 1990-1991 with YLS logging concession, represented by Korean timber company. The villagers complaint about not receiving monetary compensation for their destroyed forest lands. Such conflict tended to escalate into disputes and hostility to involve a third party in the process of their settlement.

The issues of forest squatters in Sumatera and shifting cultivators (Kalimantan) in many provinces since 1980s are rapidly increased in searching of new areas for their agricultural plantations such as coffee and rice fields. According to the report from Department of Transmigration and Forest Squatters in 1993, that it was registered critical lands related with activities among forest squatters and shifting cultivators totally 1,725,439 families. From that amount, 654,574 families stay in the forest areas of 3,606,243 hectares. And the rest, 826,433 families occupied around 3,248,689 hectares outside forest areas. In East Kalimantan, for example the location of land for shifting cultivation tends to be increased from 55,000 hectares in 1985 to 100,000 hectares in 1990. And the family which occupied the area totally reached 50,000~65,000 among 1,876,663 of its population (Mubyarto, 1992).

From above description, logging and population expansion are the primary forces driving deforestation in Indonesia and Southeast Asia (Poffenberger, 1990). According to the World Bank report in 1993, the destruction of Indonesian Forest annually reached 600,000~800,000 hectares. But, the serious effects primarily have suffered rural society who live around and in forest boundaries (Mubyarto, 1992).

The solution among HPH and HTI's affairs, our government orders them to keep strict "regulation" which emphasizes on replant and reboisation of forest. Otherwise, the Minister of Forestry (1992-1997) had imposed hard sanction to cancel their operational permission. It was registered, that the government had canceled almost 148 HPH's owners from totally registered 574 units in 1990.

On the other hand, the solution concerning forest squatters, shifting cultivators and the conflict on land use rights between local communities and HPH is throughout legal system. How the government executes "law enforcement" which hard sanction for land conflicts and effort to reorient macro mapping of land use and its clear limitations. The role of government, from its mapping to recognize the land use of communal land rights hak ulayat, agricultural, hunting areas in (Irian Jaya), forest production, forest conservation and protected forest for national parks, etc.

It is commonly known the ecological destruction recently suffered global crisis faced by human beings. Three indicators for global crisis are: (1) poverty; (2) the failure of ecological life; and (3) social hardship. Furthermore, the limitation of forest areas which drastically happened in developing countries such as Brazil, Peru, Indonesia, Malaysia, the Philippines, etc., have a negative implication for ecological sphere and earth climate balancing. The devastation of earth tropical rain-forests is causing worldwide concern. An equatorial forest as I mentioned above contains an estimated 50 percents of all known animal and plant species. As the forests are destroyed by human beings, so are genetic resources that evolved over millions of years. Because tropical forests play important and only partially understood roles in shaping our climate and atmosphere. Therefore, the Earth Summit in Rio de Jeneiro has marked the growing concern of sustainability. The rhetoric of responsible exploitation of the environment by now is universal. Likewise the concerns of ecologically oriented scientists and policy makers to translate rhetoric into valid policies have gained legitimacy.

Nowdays, in the end of 20 century a great awareness was born, launched critical reflections and the paradigm transformation among scientists and policy makers in response and effort to understand the significant meaning of forest existence. Sustainable forest management is very urgent to maintain the sustainability of man earth, but inherently confess the acknowledgement on living rights and human dignity that is related to economic and social tradition depend on the existing of forest. On the other hand, commitment has been developed to enhance local community position in management and benefit on forest resources utilization (Korten, 1987). A wide range of forest products, including medical herbs/plants', bamboo, rattan, tannin, wood oils, fruits, and honeys, have considerable economic and employment potential. For example, in 1977 the

Southeast Asia rattan industry alone was valued at $ 1.2 billion per year and estimated to employ half a million people. On the US other hand, in Indonesia rattan industry was valued US$ 125 million and was able to employ at least 100,000 people in cultivation, collecting, processing, marketing, and small-scale manufacturing (Minister of Industrial and Trade, 1996).

Various research reports recently published by social and natural scientists for example, Bulmer, (1982); Rahakette, (1984); Dove, (1993); Atmaja, (1993); Michon de Foresta, (1994), Tjitradjaja, (1994), Michael P Wells, (1990); Cornea, (1985), etc., show the mistake in treating local communities just as a target in forest resources management that executed by HPH and HTI's owners through programs of Village Development (HPH / HTI Bina Desa). In contrast, their research results told us that local communities must be treated as subject, because they able to manage sustainable forest resources by their own local knowledge and wisdom. The Indonesian government is able to review land use rights and to do spices arrangement for all sectors, the social welfare for promotion of Indonesian people can be achieved.

II. THE STRATEGY

The strategy for conservation and sustainable management on forest issues based on a Local Community Participation (A Study from Indonesia).

The government really notices in developing of forest resources management. One of her strategy to achieve this aim is to conduct alternative forest management system based on local community participation. Rural community of forest is a group of people that live in and around forest boundaries. They live with primary subsistence dependent upon forest resources utilization. Therefore, the practices of HPH and HTI's policy by cutting trees and land clearing cause a huge implication on ecological, deforestation, social, and daily life of local people which finally they ignore a sustainable forest management. Because, the concept of forest management since two decades ago has been really ignored the reality of local community who live in and around the forest. This policy has a serious implication on living standard of rural community, which suffer structural poverty.

The present trend in development is towards more attention to the simultaneous security and sustainability of human lives and nature. Resolving forestland conflicts requires the formation of building blocks to achieve social and behavioral change. A pilot project in Social Forestry encouraged by Ministry of Forestry regulation No.22 / Kpts / ll / 1995, whose main goal is to empower social and economic society has been done in many provinces in Indonesia.

The impact of Social Forestry projects conducted in Southeast Asia over the decade and in Indonesia since three years ago for out side Java has a positive aspects. Therefore, drawing on the experiences of national social forestry programs and local projects in developing collaborative management systems (Poffenberger, 1990), to respond for environmental degradation and the growing conflict between government, private business and forest communities.

Since the sixth (1995-2000) of Indonesian's Five Years Development Plan (PELITA VI), the strategy of forest development drives the role of "social participation" in sustainable forest management. On the other hand, since that situation, the policy of Forest Department changes from the concentration on production and "economic benefit oriented" on forest management towards the necessity of local community role and "socio-ecological benefit oriented". Therefore, the forest sectors development programs in empowering communities through social forestry programs.

Related to social forestry programs, there are many aspects which a very relevant to be considered:

a. The equality aspect in development trilogy must be prioritized This policy must be conducted to allow community who lives in and around forest have an opportunity to manage forest resources as a national asset. It was an appropriate with the article 33 (3), Indonesia Constitution 1945, "Earth, water and natural wealth which contain on it must be mastered by state and use for social welfare of Indonesian people". Decentralization aspect must be carried out by central government. This policy trends on empowering social and economic of our local community in development.

b. From the viewpoint of protection and sustainable forest resources aspect, in this regard, direct community participation is necessarily required. And on the other hand, the need of improving their incomes to be more welfare must be considered in the social forestry programs. The consequence from its implications that forest resources management should give a wide chance to local community to manage forest utilization results for their welfare, and also give independent choices appropriate with potential social economic they want to do. So, the program on "Social Forestry" can be conducted in the forest areas, which are familiar as "community forest" and the out side as "private forest". The latest project of "private forest" (**padat karya**) is suitable with decision from Directorate General of Reboisation and Rehabilation Land (RRL), No. 5/KPTS/V/1998.

In order to build a welfare society and sustainable forest management we need a reformation of "participation" concept. The welfare of forest dwellers and sustainable forest management today and in the future must use **interactive participation** and **independent participation**. The understanding of interactive participation focuses on:

1. The control over forest resources management is done collaboratively by local people and other actors of forest, for example: businessmen and government bureaucrats;

2. The involvement of local people in forest management means they fulfill their own rights free from outsiders interference.

Here, I would like to present two examples as follows:

a. A sustainable forest management : on **Shorea javanica** (oil lamp / damar trees):

A Case Study of People in Krui, Liwa Distric in West Lampung. In Krui (Pesisir Tengah) local communities have been traditionally managing and expanding damar (*Shorea javanica*) forests, the size of wihich is presently estimated more than 10,000 hectares.

b. Eco-tourism of forest management: in Sangeh Village-Bali.

The forest of Sangeh in Bali is an interesting example of how a local community / **traditional village** (desa adat) is able to sustain forest management since three centuries ago. Whether from the local people's perspectives that Sangeh forest really located in a terrible condition towards destruction of people, because it is located near resettlement and agricultural environment.

NOTES

[1] The forest exploitation through HPH system is rapidly increased. In 1968 HPH's concession just reached 25, by 1990 was increasing until 574 units. The log production from 6 million meter cubic in 1967 up to 31 million meter cubic in 1990. On the other hand, the government income from forest resources is US $ 3 million in 1960, but in 1988 is increased until US $ 300 million, and almost US $ 1 milliard in 1996, the second national income after oil andgass (Walhi, 1993).

[2] Some policy analysts (e.g., Zerner, 1990; Gillis, 1988) argue that such conflicts result from conflicts in the Indonesian law itself, and a bias against forest dwelling communities in government policies. The government granted many areas under previously existing customary rights as forest production concessions. As a result, the rights assigned to timber concessions cause resentment and encourage excess timber harvests by local people within timber concession areas (Gillis, 1988:49).

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Afterword

FURTHER DEVELOPMENT OF RESEARCH COOPERATION IN FOREST MANAGEMENT IN THE ASIA-PACIFIC REGION

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The First IGES International Workshop on Forest Conservation Strategies in the Asia and the Pacific Region was held at the Shonan International Village Center from 21 to 23 July 1998 gathering 65 participants from over 10 countries. Among the participants were representatives of representing IGES Forest Conservation Project, relevant research institutes, government officials, international and national NGOs, academic societies and other entities. In the Workshop, two main subjects were considered and discussed. One subject was the underlying causes of forest degradation and deforestation, which has been one of the central subjects in the IFF process. Ardent and prudent presentation and discussion was conducted based on fact findings in various areas of the region. The other subject was participatory forest management which has also been a key concept for sustainable forest management around the world. Actual cases and recent experiences, as well as failures were explained honestly and necessary future actions were pointed out.

Through active discussion in the cource of two full days, we learned many of local perspectives on forest issues in the region. We also learned that further and thorough studies should be carried out because only a little part of the complicated social and physical aspects of forest issues have been introduced and understood. The IGES Forest Project has just been started. The Project members are going to carry out on-site research activities in various areas of the region putting a special emphasis on local participation in forest management in order to ensure sustainable utilization of forest products. The successful results of the First Workshop will no doubt help our research activities and we would like to ask all participants to cooperate actively with IGES.

We are going to hold the Second Workshop in Singapore in late November 1998 to review and discuss more about sustainable forest management and necessary legal and administrative measures to promote and support wider participation of local people. The result of the First Workshop will be published and sent to you all and will be distributed at relevant international forum such as the ECOASIA Meeting in September 1998 and IFF meetings.

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IGES International Workshop on Forest Conservation Strategies for the Asia and Pacific Region

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Published by The Institute for Global Environmental Strategies

This workshop was partly supported by Netherland commiittee for IUCN as a joint global secretary of the "Addressing the Underlying Causes of Deforestation and Forest Degradation-A joint initiative to contribute the Intergovernmental Forum on Forests(IFF)".