



After UNCED: Implementation of Agenda 21 and the Forest Principles in Asia and the Pacific

Report of the Workshop on the Follow-up to UNCED and
Implementation of the Forest Principles

FAO/RAP
Bangkok
16-19 January, 1995

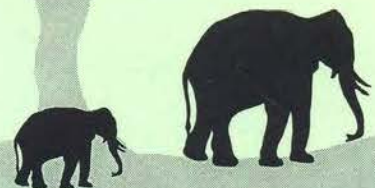


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Foreword


The United Nations Conference on Environment and Development (UNCED) was a defining event for forestry and natural resources management for the 1990s and beyond. UNCED was unique among international conferences with respect to the number and level of participants attending, the degree of enthusiasm generated, and the magnitude of commitments made by countries to ensure the health of the world's environment.

Of particular relevance to forestry, UNCED delegates agreed to the *"Non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests"* (generally referred to as the *"Forest Principles"*), and Chapter 11 of *Agenda 21* ("Combating Deforestation"). These accords provide the foundation for vital reforms in the way the world's forests are managed and used. A significant aspect of these agreements is an enhanced appreciation for the environmental aspects of forests and forestry. Underpinning all UNCED agreements is an uncompromising recognition of the firm bonds between environmental protection and sustainable development.

In the nearly three years since the Rio de Janeiro summit, many countries and organizations have made significant progress in implementing the forest-related agreements of UNCED. The countries of Asia and the Pacific have actively contributed to these positive changes. Still, a great deal more is needed to achieve widespread forest management that is truly sustainable.

To help assess the progress of countries in Asia and the Pacific in implementing the forestry agreements reached at UNCED, and to identify issues of regional concern for consideration by the U.N. Commission on Sustainable Development when it reviewed progress in the forestry sector, a regional workshop was convened in Bangkok in January, 1995. The workshop successfully drew upon the experiences of countries and organizations in the region in formulating conclusions and recommendations that were forwarded to the Commission on Sustainable Development, through FAO's Committee on Forestry.

In reviewing the documentation from that workshop, FAO and UNEP staff realized that the papers presented at the workshop—particularly the statements provided by country participants—revealed useful insights into the efforts of countries in the region to put into practice the lofty rhetoric espoused at the Earth Summit in Rio. Much of the information contained in the country statements has not yet been widely publicized or disseminated. It was recognized, therefore, that these experiences, along with the conclusions of the workshop, would be of interest to a much broader audience than the small group of individuals who participated in the workshop. For this reason, FAO is pleased to publish this summary of the workshop deliberations and edited statements presented by the participants.


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Workshop report

REPORT OF THE WORKSHOP ON FOLLOW-UP TO UNCED AND IMPLEMENTATION OF THE FOREST PRINCIPLES IN ASIA AND THE PACIFIC

16 -19 January 1995
Bangkok, Thailand

I. INTRODUCTION

The Regional Workshop on the Follow-Up to UNCED and Implementation of the Forest Principles was held at the FAO Regional Office for Asia and the Pacific in Bangkok, Thailand, from 16 to 19 January 1995. The meeting, supported by the United Nations Environment Programme (UNEP) and the FAO Tropical Forests Action Program (TFAP), was organized by the FAO Regional Office for Asia and the Pacific (FAO/RAPA).

Participants in the Workshop included senior forestry professionals and coordinators of National Forest Action Programs (NFAPs) from the following countries: Bangladesh, Bhutan, China, Fiji, India, Indonesia, Japan, Republic of Korea, Lao PDR, Nepal, Papua New Guinea, Philippines, Sri Lanka, Thailand, and Vanuatu. Also participating were representatives from the Japan Environment Agency, United Nations Environment Programme (UNEP), United Nations Development Programme (UNDP), and the Food and Agriculture Organization of the United Nations (FAO).

The Workshop was opened with addresses from Mr. Dong Qingsong, FAO Deputy Regional Representative, and Mr. Suvit Yodamni, UNEP Regional Director and Representative.

The Workshop was chaired by Mr. Jose Malvas, Jr., Director of the Forest Management Bureau, Philippines Department of Environment and Natural Resources. Mr. Ram Swarup, Conservator of Forests of Fiji, was elected Vice-Chairman. Mr. Thosapala Hewage, NFAP Coordinator for Sri Lanka, served as Rapporteur.

Context and Objectives of the Workshop

Since the convening of the United Nations Conference on Environment and Development (UNCED), several governments and international agencies have recognized the need to restructure their environmental sectors and policies as recommended in Agenda 21. Many positive actions have already been taken by governments, NGOs, and international organizations in Asia and the Pacific. However, it has become apparent that, since the signing of the Rio Declaration and the Forest Principles, the implications of these agreements for sustainable management of forest ecosystems are yet to be fully understood or appreciated at the local, national, and regional levels.

Given that the United Nations Commission on Sustainable Development (CSD) was to review progress on the implementation of Agenda 21 forestry recommendations in April 1995, it was considered important for countries of the Asia-Pacific region to be given the opportunity to highlight issues of particular concern to the region to the CSD. This Workshop was thus organized by the FAO Regional Office for Asia and the Pacific (FAO/RAPA), with financial support from UNEP and FAO/TFAP.

The overall objective of the Workshop was to review and assess the progress of Asia and Pacific countries in implementing the forestry-related agreements reached at UNCED, particularly Chapter 11 of Agenda 21 ("Combating Deforestation"), and the *Non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types*

of forests (generally referred to as the "Forest Principles"). The Workshop was designed to provide Asia-Pacific countries an opportunity to highlight achievements, issues, constraints, and recommendations of particular relevance for countries of the region.

The specific objectives of the Workshop were to:

- 1) Review the progress and constraints in implementing Agenda 21 and the Forest Principles in countries of Asia and the Pacific;
- 2) Identify forestry issues and recommendations of particular importance to the Asia-Pacific region to be brought to the attention of the CSD, when it reviews progress in the forestry sector; and,
- 3) Provide the CSD (through the Committee on Forestry and the Ministerial Meeting to be organized by FAO in March, 1995) with recommendations on the use of National Forest Action Plans for the implementation of UNCED Agenda 21 in forestry.

Documentation

The basic documentation for the Workshop consisted of:

- a) resource papers prepared by FAO and UNEP, including the following:
 - i) *Review of the Forest Principles 20 Months after Rio* (prepared by UNEP/Nairobi);
 - ii) *Summary Note on Areas of Progress, Experiences, and Selected Issues in UNCED Follow-Up with Emphasis on Developing Countries* (prepared by FAO/Rome);
 - iii) *Implementation of Agenda 21 and the Forest Principles in Asia and the Pacific: Draft Discussion Paper* (prepared by FAO/RAPA);

- iv) *National Forestry Action Programs for the Implementation of Agenda 21 and the Forest Principles* (prepared by the NFAP Support Unit, FAO/Rome).

- b) country statements and reports on the progress and constraints in implementing Agenda 21 and the Forest Principles.

Working Groups

To facilitate greater interaction and discussion, the participants were organized into two working groups to discuss the most significant achievements of Asia-Pacific countries in implementing Agenda 21, problems and constraints encountered, and issues of particular importance to the Asia-Pacific region to be brought to the attention of the CSD.

Working Group I discussed the following themes related to Agenda 21 and the Forest Principles:

- Conservation, management and overall aspects of sustainable development of forests
- Sustainable use of forests and related aspects of economic development
- Role of major groups and social aspects of forests

Working Group II discussed the following themes:

- Institutional strengthening and capacity building
- International and regional cooperation and support
- Forestry issues relating to other Chapters of Agenda 21 and international agreements

- TFAP as an instrument to implement Agenda 21 and the Forest Principles

A synthesis of the conclusions of the Working Groups is provided in Part IV of this report.

II. GLOBAL AND REGIONAL EXPERIENCE IN IMPLEMENTING AGENDA 21 (CHAPTER 11, "COMBATING DEFOR-ESTATION") AND THE FOREST PRINCIPLES

Progress, experiences, and selected issues in UNCED follow-up with emphasis on developing countries

The Workshop was briefed on global perspectives of the UNCED process and arrangements for review of forestry by the CSD, (Mr. Mafa Chipeta), UNCED Follow-up Focal Point for Forestry in FAO. Mr. Chipeta also outlined the roles of FAO in pre-CSD preparations and presented elements from the draft Task Manager's report on forests.

Observing that Asia and the Pacific is extremely vast and diverse, Mr. Chipeta indicated that it would be unrealistic and inappropriate to expect a "joint," or common, position on issues for consideration by the CSD. Instead, a range of issues which reflect the diversity of situations was viewed as appropriate.

The Workshop was reminded that central to UNCED agreements was the recognition that both development and environment must be given a central role in the way ahead and that there should be no question of choosing between environment and development. Either one on its own is inadequate and unsustainable, while the two are mutually supportive.

Highlights on post-UNCED progress made toward this main UNCED goal were given, with a special focus on developing countries. Examples were also drawn from the developed countries of the region, including Australia, Japan, and New Zealand.

It was noted that practical pre-UNCED actions in sustainable forest management have continued, but, more importantly, there has been a focus on creating the conditions to facilitate even faster progress in the future. In this respect, actions have been initiated to balance environment with development in policies, legislation, strategies (such as National Forestry Action Plans), programs, and institutional arrangements. Since UNCED, there has also been an increased recognition of the external driving forces behind forest loss and degradation such as poverty, rapid population growth, policy incentives that support inappropriate land uses, high levels of consumption, waste, and pollution.

The environmental aspects of forests, including greater attention to conservation (such as biodiversity and protected areas) have been given a higher profile since UNCED. The pace in achieving balance between environment and development, however, and approaches for doing so, have not always been perceived the same way by all interest groups—governments, NGOs, and the private sector. This has caused controversy, creating the need for consensus building on a priority basis.

To create a basis to assess progress, some countries have cooperated to develop criteria and indicators for sustainable forest management, although so far with limited participation from the developing countries. These indicators could partly be used in certificating forest products in international trade. Progress and experiences were also presented with regard to: the elimination of earlier unilateral restrictions in the timber trade; changes in production and consumption patterns; lack of innovation in international cooperation and its continuing poor coordination; modest flows of official development funding; limited technological development and technology transfer; institutional weaknesses and need for capacity building; modest progress in involving major groups and people in forestry; and outstanding deficiencies in information on the state of forests and on their valuation.

It was reported that there have been no specific actions to initiate review of the non-legally-binding Forest Principles which the countries had agreed to keep under review. To provide a basis to decide whether, and, if so, in what direction to go forward, it was reported that FAO was arranging for review of merits of various options at the March 1995 meeting of the Committee on Forestry and the Meeting of Ministers responsible for forestry which will follow it.

A detailed outline of arrangements for achieving convergence of ideas, initiatives and proposals, so as to reach CSD with a harmonized and coherent message for the sector was outlined. Of particular importance will be the March 1995 session of the FAO Committee on Forestry (COFO) and its associated special Meeting of Ministers responsible for forestry. These will be preceded by consultations with NGOs, the private sector, representatives of organizations leading various initiatives to develop criteria and indicators of sustainable forest management, TFAP coordinators, and the CSD's own preparatory Inter-Sessional Working Group. Before COFO and the Ministerial Meeting, regional perspectives are to be enriched by the convening of FAO/UNEP regional meetings, sessions of some FAO Regional Forestry Commissions (and of a special meeting of the bureaux of regional commission) and from country reports still being provided to FAO.

The Workshop was informed that a draft, which would serve as the basis for the UN Secretary-General's report to the CSD had been prepared by FAO and sent to the Secretary General's Office in early December 1994, using inputs received from governments, NGOs, private sector associations and inter-governmental organizations. Detailed information was given on FAO arrangements to ensure that information from the regional consultations could be channelled to CSD through the COFO process.

Progress in incorporating environmental concerns into forestry under Agenda 21 and the Forest Principles

Mr. Bai-Mass M. Taal, Senior Program Officer with UNEP's Terrestrial Ecosystems Branch, presented an overview perspective on progress in incorporating environmental concerns into forestry since UNCED. He noted the significance of Principle 4 of the Rio Declaration, which states that:

"to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it."

Complementing this principle are several paragraphs and elements of the Forest Principles calling for holistic and balanced approaches in forest development, incorporating all aspects of environmental, social, and economic development.

The Forest Principles are significant as they reflect, for the first time, a general consensus on all types of forests. They constitute a political document, affirming general values, while Chapter 11 of Agenda 21 provides an action plan to achieve the objectives outlined in the Principles and other forest-related UNCED outputs.

The countries are still grappling with how to incorporate environmental concerns into forestry. For example, in Asia, 49 percent of all forest areas are designated for wood production, compared with 14 percent for environmental protection.

Since Rio, there have been a number of initiatives or processes to put into action the Forest Principles. A number of countries, however, have focused only on particular elements of the Forest Principles for implementation.

The most developed element is 8(d): formulation of criteria, guidelines, and methodologies for sustainable forest management. In line with this element are the Montreal and Helsinki Processes for the development of criteria and indicators.

All four program areas of Chapter 11, and the Preamble of Agenda 21, call for an increase in partnership to achieve the Rio Declaration. Considerable progress has been made in this area. The Global Forest Conference, convened in Indonesia in early 1993, was the first global initiative after Rio. It resulted in the Bandung Declaration, calling for enhanced international partnership to address global forest problems.

Other international processes that have attempted to incorporate environmental concerns into forestry include:

- Indo-British Forestry Initiative;
- Malaysia-Canada Initiative;
- CIFOR-Indonesia Policy Dialogue on Science, Forests and Sustainability.

Similar efforts at the national level attempt to enhance environmental considerations in forest management. They include the following:

- Canada's Model Forest Program;
- Indonesia's eco-labelling and certification preparatory activities;
- India's National Conservation Strategy;
- China's National Agenda 21;
- Bangladesh's Forestry Master Plan;
- Japan's system of forest management and forest ecosystem reserves;
- Philippine's "Banner Program 1994;"

- The Republic of Korea's National Forest Plan (incorporating development and conservation of forests)

These developments indicate that improvements have been made in incorporating environmental concerns into forestry since UNCED.

National Forestry Action Plans for the Implementation of Agenda 21 and Forest Principles

Mr. Darmo Suparmo, TFAP Adviser for Asia and the Pacific, presented an assessment of the experience in using National Forestry Action Plans to implement Agenda 21 and the Forest Principles. TFAP has evolved considerably, with continuous feedback and adjustment, since it was formulated in the mid-1980s. The goal of TFAP is to promote the sustainable use of tropical forest resources to meet local and national needs, by fostering international and national partnerships to manage, protect and restore forest resources for the benefit of present and future generations throughout the world.

The key features and essential characteristics of TFAP are:

- implementation by the country;
- involvement by all concerned partners;
- harmonization and coordination;
- action oriented by identification of issues;
- flexibility

The use of National Forestry Action Plans as a tool for implementing sustainable forest management is explicitly encouraged in Chapter 11 of Agenda 21.

The TFAP, or parallel Forestry Master Plan process, has been adopted by 21 developing countries in Asia and the Pacific. Ten countries in the region are implementing NFAP programs. China has successfully completed the Simao Forest Action Plan (SFAP) project, and Hunan Province of China is likely to hold a roundtable meeting to facilitate further actions. It is anticipated that two other countries (i.e., Bangladesh and Thailand) will reach the implementation phase of their NFAPs in 1995.

NFAPs are most successful when they are well integrated within the overall national development program of the country. This has happened in most countries which have initiated NFAPs in Asia and the Pacific.

A number of problems have been encountered in the preparation and implementation of NFAPs. They include the following:

- weak country capacity in the coordination of partners in NFAP preparation and implementation;
- insufficient funds to support NFAP programs, especially in the areas of forests products utilization, non-wood forest products development, and plantation development;
- failure to involve all concerned partners, including NGOs, from the beginning of NFAP exercises;
- insufficient information and data upon which to base forest resources management.

Workshop participants strongly endorsed the TFAP process and agreed that NFAPs can be effective tools for the implementation of Agenda 21 and the Forest Principles. The participants noted that FAO's capacity to support the TFAP process should be enhanced to ensure effective development and implementation of NFAPs.

III. ASIA AND PACIFIC COUNTRIES' PROGRESS AND EXPERIENCES IN IMPLEMENTING AGENDA 21 AND THE FOREST PRINCIPLES

UNCED served to effectively elevate the issues and concern for the world's environment, including forests. The long-term nature of forestry and the extensive requirements needed to solve major forestry problems, however, preclude dramatic positive change in the sector. Much of the progress that has been achieved since UNCED has been related to the continuation or the acceleration of earlier programs. Common across most countries, have been preparatory actions to create an environment conducive to effective future practical action, including awareness raising, attitude adjustment, preparation of standards, policy changes, planning and strategy development, and institutional improvement.

UNCED reflected the conviction that the forestry sector should allow environmental considerations to permeate all development and become a central rather than peripheral issue. It also highlighted the role of non-governmental interests (including those of forest-dependent communities) in sustainable forest development and the inter-sectoral nature of many key forestry concerns. For the forestry sector, awareness of this among policy-makers and planners and the associated attitude change has been among the major areas of world-wide progress since UNCED.

The change in attitude has prompted efforts to search for early achievement of sustainable forest management and to develop the necessary criteria and indicators to measure the progress towards this goal. The development of criteria and indicators which will permit certification, will also lay the foundation for non-discriminatory trade in sustainably-produced timber from all types of forests and should make bans and boycotts unnecessary,

International debate is increasingly concerned with how to integrate national development considerations with global environmental benefits such as ameliorating climate change or conserving genetic pools. A standing issue is how to provide incentives or compensation to those countries or communities which forego rights to utilize their forests in order to contribute to global environmental security.

New or Adapted Policies, Plans and Strategies

Most countries of the region are reorienting forest policies and strategies in line with UNCED and Agenda 21. For example, in **Malaysia**, a revised *National Forestry Policy* was approved in 1992 and a new *National Forestry Act* in 1993. Further, land was designated as permanent forest estate and a continuous forest monitoring system was made operational in 1993. From 1993 Malaysia granted private forest plantations owners full tax exemption of between 5 to 10 years under various fiscal initiatives. **Bangladesh, Cambodia, Myanmar**, and **Samoa** have also recently adopted new forest policies. **Sri Lanka** is revising its Forestry Master Plan of 1986 to incorporate more environmental considerations into its forest management plans, and **India** has recently begun developing a National Forestry Action Plan. **Japan** has introduced a new "Forest Management System Based on River Basin" approach to enhance forest management across different ownerships.

Several countries, including **China** and the **Philippines**, have developed comprehensive national Agenda 21 programs. **India** has developed an Environmental Action Plan, which provides a framework for Agenda 21 actions. The preparation and implementation of NFAPs have continued after UNCED. IUCN-assisted National Conservation Strategies have continued to be prepared, while in some countries, National Sustainable Development Strategies (NSDS) are ready.

Management, conservation, and sustainable development of forests

At UNCED, and on numerous following occasions, countries of the region have committed themselves to achieving and practicing sustainable forest management. ITTO's *Objective 2000* provided initial impetus in this area, which has gained added momentum since UNCED.

Most countries of the region have accelerated reforestation efforts since UNCED. The planting programs of **China, India, Indonesia**, and **Viet Nam** are especially noteworthy for their scale. In 1994, FAO initiated a new regional project to support reforestation programs in **Bhutan, Lao People's Democratic Republic, Myanmar**, and **Viet Nam**.

Several countries have harmonized their policies on forest concession management. **Indonesia**, for example, has been implementing legislation which makes it possible for the government to assume the management of concessions which do not fully comply with regulations by establishing joint ventures between the concession holder and government forest enterprises.

Since UNCED, there has been increased attention to conservation, exemplified by the creation or expansion of protected areas in several countries. Under its pilot phase, the Global Environment Facility funded several developing country projects in the Asia-Pacific region, largely on protected areas, including wildlife management. Similar support is being provided by the World Bank and the Asian Development Bank in **Indonesia**.

Promotion of sustainable patterns of production and consumption

As the leading suppliers of tropical wood products, Asia-Pacific countries are very concerned about initiatives in developed countries which threaten their traditional markets. Partly to

respond to concerns in market countries, Asia-Pacific producers are actively promoting the development and application of criteria and indicators for sustainable forest management. **Indonesia** and **Malaysia** have taken the lead in this area and may soon start sustainability certification.

Several countries in the region have initiated efforts to reduce logging damage and negative impacts of forest operations. For example, **Malaysia**, **Indonesia**, **India**, and the **Philippines** have active programs to test and encourage reduced impact logging.

Fiji has recently adopted a model logging code designed to enforce environmentally sound forest harvesting. **Australia**, **Fiji**, **New Zealand**, **Papua New Guinea**, the **Solomon Islands**, and **Vanuatu** are drawing up a regional code of conduct that will set minimum standards for logging and export of timber.

Forest industries in the region remain relatively inefficient in terms of wood conversion into marketable products. Some countries (e.g., **Philippines**) are undergoing major restructuring of their industrial processing sector to modernize equipment and adapt to the realities of reduced raw material supplies, smaller logs, and increased dependency on plantation-grown wood.

Since UNCED, increased attention has been focused on non-wood forest products and services (such as ecotourism) as potential alternatives to more damaging timber harvesting. Several countries in the region are increasing emphasis in these areas. However, the lack of knowledge of complex management, utilization, and marketing aspects of these products and services is limiting more rapid development. Concerns also exist that non-wood forest products might be over-exploited the same way that timber resources have been in some places.

Paper fiber recycling is emphasized in the region. In **Japan**, the waste paper utilization rate is over 50 per cent; in the **Philippines**, about three-fourths of all waste paper is now recycled. In **Singapore** and **Hong Kong**, the rate is nearly 100 per cent.

Pre-UNCED programs to improve efficiency of wood stoves (to reduce fuelwood demand) have continued in many countries.

A development with significant conservation implications in the Asia-Pacific region is the rapid increase in rubberwood processing as a substitute for certain tropical hardwoods that risk depletion. In **Malaysia**, rubber clones that are more suited for timber production are being developed.

Role of major groups and social aspects of forests

Non-governmental organizations

Environmental organizations are rapidly gaining power and influence in many countries of the Asia-Pacific region. Building on their already formidable base, environmental NGOs in **India**, **Thailand**, and the **Philippines** have significantly expanded their power since UNCED. In **Thailand**, advocacy groups have strongly influenced the pace of development and the orientation of the Master Plan for Forestry and the design of a major GEF-supported protected area program. In other countries of the region, fledgling advocacy groups are beginning to exert increasing influence in forestry debates. In **Indonesia**, for example, a consortium of environmental groups recently elevated public awareness of forestry issues considerably by encouraging debate over reallocation of government reforestation funds.

In addition to local NGOs, international NGOs actively support conservation and sustainable forest management throughout Asia and the Pacific. Since UNCED, such organizations have been especially active in developing local capacities in many countries with previously limited links to the international NGO community, such as **Bhutan, Cambodia, China, Lao People's Democratic Republic, and Viet Nam**. International NGOs have also aggressively promoted the development and application of criteria and indicators of sustainable forest management and the certification of wood products.

Various "operational" NGOs and community-based organizations have played a critical role in practical implementation of grassroots conservation and forest-based livelihood programs and in local empowerment and capacity building. To benefit from perceived NGO strengths, many international and government agencies are closely working with NGOs. In the **Philippines**, for example, some protected areas are now co-managed by the government and environmental NGOs.

The commercial private sector

The commercial private sector is critically important for forestry in Asia and the Pacific. The high level of commercial exploitation in some countries of the region means that private companies wield tremendous influence over forestry, particularly in the management, utilization, and marketing areas.

The transition from centrally planned economies toward market economies in **China, Lao People's Democratic Republic, Mongolia, Myanmar, and Viet Nam** is presenting new opportunities and challenges for the private commercial sector and the governments involved. These countries are being faced with great opportunities and risks as forest management and exploitation are opening up to private-sector investment, privatization of state corporations, and joint ventures with international firms.

An important government incentive which can be provided for sustainable forest management is the adoption of policies supportive of private investment and entrepreneurship into value-adding industries instead of simple trade in raw materials. An example of what investment in technology, human resources development, and local entrepreneurship can achieve is the evolution of forest utilization in **Indonesia** from export of raw logs to local processing of timber products.

Other major groups and civil society

Tribal and clan ownership and management of forest resources has a long tradition in **Papua New Guinea, Fiji, Vanuatu**, and other South Pacific countries. In **Fiji**, the Native Land Trust Board assists in the management of forest land in many areas. In other areas, forest management decisions are made exclusively by local groups or in collaboration with government organizations.

Local governments and communities are being given increasing levels of responsibility for forest management and protection in several countries of the region. A recent trend toward decentralization and devolution of forest management responsibilities to local governments, user groups, local communities and individuals has taken place in **Bangladesh, India, the Philippines, Nepal, New Zealand, Viet Nam, China, Lao People's Democratic Republic, and Indonesia**.

Such decentralization and devolution has not released central governments from all forestry related responsibilities, however. Important technical assistance, monitoring, and regulatory duties remain. In many cases, however, the staff needs of central government forestry agencies have changed dramatically, and government forest departments are strugglingly to identify their roles in the rapidly changing resource management environment.

Forest-dependent peoples are highlighted under the new forestry policy of the Asian Development Bank which intends to give them an economic stake in forests. **Viet Nam** and **India** have variously encouraged participation by locals and forest dwellers.

Institutional strengthening and capacity-building

Post-UNCED capacity building efforts have been at three levels: creating an "enabling environment;" building up the capacities of government institutions; and strengthening NGO, local community and individual citizen capabilities. The most deliberate post-UNCED initiative in capacity building remains UNDP's Capacity 21, launched in 1993. UNDP's Country Capacity for National Forest Programs (CCNFP), which complements Capacity 21 is designed especially to enhance the capacity of countries to manage national forest programs. Considerably more funding is needed for these programs to succeed in meeting their objectives.

International and regional cooperation and support

Finance

The two main multilateral funding organizations supporting forestry in Asia and the Pacific are the World Bank and the Asian Development Bank. Forestry lending by the World Bank in the early 1990s has more than doubled compared with the early 1980s. Since 1977, the Asian Development Bank (AsDB) has made cumulative forestry loans amounting to US\$ 794.32 million (annual average US\$ 39.7 million).

In terms of financing technical assistance in forestry, the leading source in the UN system is UNDP, particularly through allocations under the Indicative Planning Figure (IPF) of countries. In 1993 UNDP provided US\$ 20.3 million for forestry worldwide through FAO alone. Asia received more than US\$ 10 million in UNDP support for forestry in 1992.

Asia and the Pacific receives a relatively large portion of the international funding for forestry, but the funding patterns are highly uneven. The **Philippines**, for example, has obtained over 100 percent of the external funding needs identified under its TFAP process, while **Fiji**, **Lao People's Democratic Republic**, and **Viet Nam** have received less than 25 percent of their identified needs.

Technology transfer and technical cooperation

Since UNCED, two major new international organizations have been established in Asia. These are the Center for International Forestry Research (CIFOR), and the Southeast Asian Regional Research Program of the International Center for Research in Agroforestry (ICRAF). In addition, the International Tropical Timber Agreement, under which ITTO operates, was renegotiated with a mandate to strongly pursue the goals of sustainable forest management throughout the region and the world.

Several other regional organizations funded by bilateral organizations are making significant contributions toward sustainable forest management objectives. Among these are the Regional Community Forestry Training Center, the Asian Institute of Forest Management, and the ASEAN-Canada Tree Seed Centre.

The FAO-executed Forestry Research Support Program for Asia and the Pacific (FORSPA), funded by the Asian Development Bank and UNDP, provides a model for promoting low-cost South-South technology sharing.

Recent developments and experiences in international cooperation

Given that many environmental issues are trans-boundary, regional cooperation will be increasingly important. A prime example of such cooperation is provided by the recent agreement by the Prime Ministers of **Australia**, **Fiji**, **New Zealand**, **Papua New Guinea**, **Solomon**

Islands and **Vanuatu** to work toward a common code of conduct relating to logging and log exports from indigenous forests.

Many countries in the region are similarly active in various initiatives designed to pursue the goals of UNCED. Among these are the Indo-British Initiative; the Canada-Malaysia Initiative, CIFOR-Indonesia Policy Dialogue, and the Montreal Process. It is important to note that many of these processes initiated in the Asia-Pacific region.

With assistance from ITTO, **Indonesia** and **Malaysia** have recently established a trans-frontier reserve in a key area of more than 1 million hectares straddling the two countries' border in Borneo.

Forestry elements relating to other chapters of Agenda 21 and the Conventions.

A few countries (e.g., **Indonesia** and **Viet Nam**) have raised agricultural yields, which may lead to an eventual reduction in the rate of forest clearing for new farm land. Poverty, and policies resulting in reduced access to yield enhancing inputs (including some elements of structural adjustment) are holding many other countries back in this area.

Several countries in Asia and the Pacific (particularly the middle-income countries) have demonstrated considerable success in reducing their rates of population growth. Others have made little progress in this area.

Some countries in the region (e.g., **Malaysia**) have pilot projects on carbon sequestration through reduced impact logging or reforestation.

With support from the World Bank, AsDB, and other donor organizations, many countries in the region are devoting considerable attention to the conservation of biodiversity. **Indonesia**,

for example, has recently drafted a comprehensive Biodiversity Action Plan and begun its implementation.

IV. WORKING GROUP REPORTS

During the course of the Workshop, Working Groups separately discussed achievements, constraints, and issues in seven thematic areas related to the implementation of Agenda 21. Working Group I addressed the first three themes, while Working Group II focused on the second four themes. The groups met in plenary to thoroughly discuss all conclusions and recommendations of both groups. This summary, therefore, represents the consensus conclusions and recommendations of the entire Workshop.

WORKING GROUP I

Theme 1: Conservation, management and sustainable development of forests

Major achievements in the region:

- Adopted National Forestry Action Plans or Master Plans for Forestry;
- One country (Indonesia) formulated and adopted a national land use policy
- Community and participatory forestry practices were promoted and enhanced;
- Awareness, on the part of all people, to environmental issues and the role of forests and trees were greatly enhanced;
- The number and extent of protected areas in most countries have been substantially increased, and some countries have enacted new laws for improved management of protected areas;

- Most countries have formulated and approved new national forest policies;
- All countries committed increased investment and resources for forest development and environmental amelioration.

Major constraints to effective implementation:

- Lack of firm political will;
- Conflicting forest use function and absence of conflict resolution mechanisms;
- Unresolved land tenure issues;
- Funding inadequacies;
- Lack of appropriate forestry technology and research support;
- Lack of adequately trained human resources and institutional capacity.

Issues of particular importance to be brought to the attention of the CSD:

- All nations should be called upon to formulate national land use policies;
- All nations should be reminded to formulate and adopt NFAPs, or similar appropriate forest management plans, and endeavor to implement them in an effective manner;
- All nations should be requested to create Forest Development Funds as appropriate, to augment their existing funding commensurate with forestry development requirements;
- All countries should be encouraged to support the establishment of protected areas that adequately conserve the

biodiversity of importance to the country and the world, and to strengthen the effectiveness of protected area management.

Theme 2: Sustainable use of forests and related aspects of economic development:

Major achievements in the region:

- Most nations have either rationalized or taken steps to rationalize annual allowable harvest of forest products;
- Several countries have taken steps to improve harvesting systems, reduce damaging skidding practices, and minimize soil disturbances through the application of low impact logging and the adoption of revised logging codes;
- Some countries imposed restrictions on the export of logs and primary products; instead they are promoting in-country processing and the export of value-added products;
- Steps have been taken to increase the recycling of forest products and to reduce waste;
- Environmental impact assessment procedures have been established for forestry and other land use, and for forest industries in a number of countries;
- One country (Philippines) introduced a system of environmental management charges;
- Steps have been taken to promote tourism (including ecotourism), resulting in new opportunities for rural development and increased revenue earnings from forest areas.

Major constraints to effective implementation:

- Lack of clear political decisions on ways to satisfy community needs from forests;
- Conflicts between short-term economic interests in forests and sustainable forest management requirements;
- Unilateral trade restrictions;
- Improper identification of research priorities and reluctance to invest in relevant research programs;
- Lack of appropriate technologies and mechanisms to transfer such technologies;
- Lack of investment funds;
- Absence of appropriate evaluation techniques for environmental costs and benefits.

Issues of particular importance to be brought to the attention of the CSD:

- Nations should be urged to improve mechanisms for the transfer of forestry-related technology;
- Influence liberalized Official Development Assistance (ODA) from developed to the developing countries as envisaged in UNCED 1992;
- Nations should be requested to honor international laws and agreements governing the free trade of all forest products; non-discriminatory and multilaterally agreed rules and procedures, and open and free international trade in forest products, should be facilitated;
- Nations should be urged to explore and develop mechanisms that encourage

the free trade of all forest products derived from sustainably managed forests.

Theme 3: Role of major groups and social aspects of forests**Major achievements in the region:**

- Land titles and usufructuary rights of indigenous people on forest land have received greater recognition; the needs and wishes of indigenous people have been given increased attention;
- People's awareness and understanding of sustainable forest management and environmental degradation issues have improved;
- Mechanisms for sharing the benefits from sustainable forest management have been expanded;
- Decision making and consultation on forest management issues have been decentralized and broadened in most countries;
- The contributions of environmental groups across many sectors to the planning and implementation of forest management have received greater appreciation;
- Volunteers (e.g., NGOs, boy scouts, school groups, environmental organizations, etc.) have been mobilized for tree planting and forest protection to a greater extent than in the past.

Major constraints to effective implementation:

- Poor communication and understanding between forestry personnel and forest neighbors/indigenous people;

- Communication and publicity inadequacies;
- Lack of knowledge and institutional capacity to deal with the needs of special groups in and near forests.

Issues of particular importance to be brought to the attention of the CSD:

- Governments should be encouraged to recognize the role of major groups in dealing with the social aspects of forestry, and improve coordination and cooperation with them to help solve forest management problems.

WORKING GROUP 2

Theme 4: Institutional Strengthening and Capacity Building

Major achievements in the region:

- Frequent and significant international fora on issues related to forestry;
- Since UNCED, three global initiatives on the implementation of the Forestry Principles were started in the countries of the region;
- Considerable progress has been made in developing criteria and indicators for sustainable use of forest resources;

Major constraints to effective implementation:

- Forestry is generally given a low priority in developing economies;
- Lack of institutional capacity to ad-

equately address the issues of sustainable management of forests;

- Lack of coordination among the different agencies and organizations concerned with land use and management of natural resources;
- Lack of national land use and forest policies.

Issues of particular importance to be brought to the attention of the CSD:

- Financial and technical support to countries that do not have land use and forest policies should be accelerated to enable them to develop and implement such policies;
- Country capacity for planning, policy research, and analysis should be strengthened;
- Networks to exchange research results and other information should be enhanced;
- The process of involving NGOs and communities in the management of forests should be accelerated; this requires considerable training and sensitizing of community leaders, forestry personnel, and NGOs for which training-of-trainers should be given a high priority;
- Governments should take steps to ensure adequate budgetary support for forestry institutions;
- An improved coordinating mechanism for country capacity building should be developed and institutionalized.

Theme 5: International and Regional Cooperation and Support

Major achievements in the region:

- Bilateral assistance in forestry has increased considerably since UNCED;
- A number of cooperative initiatives (e.g., Bandung Declaration, Malaysia-Canada, and Indo-British) have been started with the objective of furthering international dialogue on the implementation of the Forest Principles;
- A recent ministerial-level meeting was convened at ESCAP in Bangkok where Agenda 21 issues were discussed and an action plan was approved.

Major constraints to effective implementation:

- Inadequate funding through multilateral agencies;
- Skewed distribution of international funding;
- Lack of coordination among donor agencies;
- Inadequate technology transfer;
- Reduced capacity in FAO to focus on forestry issues due to resource constraints.

Issues of particular importance to be brought to the attention of the CSD:

- There is a need for greater devolvement of funds from international donors and a more equitable system of disbursements should be ensured;
- The pace of technology transfer should be accelerated;

- FAO should become a focal point for technological support and, to fulfill its mandate, it may examine options to strengthen its organization.

Theme 6: Forest Issues Relating to other Chapters of Agenda 21 and International Agreements

Major achievements in the region:

- Many countries have signed the Conventions on Biodiversity and Combating Desertification;
- The extent of protected areas in the region has been increased;
- Programs linking improved agricultural production with forestry (e.g., ICRAF's program on alternatives to slash-and-burn agriculture) have been initiated in the region since UNCED.

Major constraints to effective implementation:

- Lack of coordination among government agencies with responsibilities for inter-related issues affecting forestry;
- Lack of mechanisms for the management of shared ecosystems across legal boundaries;
- Rapidly changing lifestyles and demands of rural people in developing countries;
- Poverty and land hunger;
- Poor understanding of the diversity of biological resources.

Issues of particular importance to be brought to the attention of the CSD:

- All countries should be encouraged to sign the Convention on Combating Desertification and share their relevant experiences and technologies of combating desertification. Special funding mechanisms to support these efforts should be ensured;
- Considering the fact that mountain areas are watersheds of the river systems that ensure food security, and are fragile ecosystems, countries should be urged to give special attention to the preparation of effective management plans for such areas;
- Considering that sound agricultural and rural development is vital to the health of forests, nations should be encouraged to fully integrate rural development and agriculture; efforts to enhance the development of rural industries and other income and employment alternatives should be given high priority;
- In view of the importance of conserving biodiversity for future generations, the CSD may wish to consider the following recommendations:
 - > protected area networks should be expanded
 - > surveys of biological resources should be accelerated
 - > intellectual property rights issues related to biodiversity should be resolved
 - > the rate and level of the transfer of biotechnology should be enhanced.

- Countries should be encouraged to increase cooperation in controlling the trade and use of endangered wildlife;
- Countries should be encouraged to review all land use, agriculture, rural development, and other policies related to forestry for their potential negative impacts on forests, and revise them to reduce or eliminate damaging effects on forests.

Theme 7: TFAP as an Instrument to Implement Agenda 21, (Chapter 11, "Combating Deforestation") and Forest Principles

Major achievements in the region:

- National Forest Action Plans and Forestry Master Plans play an important role in supporting implementation of the Forestry Principles in more than 20 countries in Asia and the Pacific;
- The evaluation and revision of the TFAP and Master Plan processes have led to greater complementarity in supporting the Forest Principles.

Major constraints to effective implementation:

- FAO's capacity to service the TFAP process is limited;
- Many partners (including national governments in some countries) have given a low priority to the implementation of NFAPs;
- Weak institutional capacity to implement NFAPs;
- Lack of adequate financial resources.

Issues of particular importance to be brought to the attention of the CSD:

- TFAP should receive adequate administrative and financial support from all partners;
 - All countries that have not already done so should initiate NFAPs, or similar comprehensive forestry planning exercises, on a priority basis;
 - Financial and institutional support to TFAP should be enhanced;
 - Country capacity to implement NFAPs should be strengthened on a priority basis.
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Opening Addresses

BEYOND THE RIO RHETORIC: A TIME FOR ACTION IN FORESTRY

Dong Qingsong
FAO Deputy Regional Representative

Opening Address Workshop on the Follow-Up to UNCED and Implementation of the Forest Principles

It is a great pleasure for me to welcome all of you to the FAO Regional Office for Asia and the Pacific, and to this Workshop on the Follow-Up to UNCED and Implementation of the Forest Principles.

Nearly three years ago, the United Nations Conference on Environment and Development (UNCED) was convened in Rio de Janeiro. It was the largest global summit ever held, with 178 member countries and more than a hundred Heads of State represented. UNCED concluded that only by linking sustainable development with environmental protection could we ensure our common future.

The Conference was unique with respect to the lofty levels of political concern and commitment generated. These were translated into the adoption of conventions and other agreements on environment and development, and the formulation of Agenda 21 as an operational blueprint for saving the "blue planet."

In Rio, FAO was entrusted by the United Nations with the role of "Task Manager" to promote coordinated follow-up to UNCED in the field of agriculture, including forestry. Thus, the FAO Forestry Department is responsible for coordinating and monitoring follow-up related to the Forest Principles and to Chapters 11 and 13 of Agenda 21, "Combating Deforestation," and "Sustainable Mountain Development."

Since UNCED, FAO has participated in, and contributed to, many inter-governmental

consultations in forestry. We should recall that the first such effort was the Global Forest Conference, convened here in our region, in Indonesia. That conference produced the "Bandung Initiative for Global Partnership in Sustainable Forest Development."

The Bandung Conference was followed by the Canada-Malaysia Initiative, the Indo-British Initiative, the Helsinki and Montreal Processes, and several others. Such initiatives demonstrate the interest and energy which countries possess for following-up the agreements from the Earth Summit.

But such meetings and conferences by themselves will have little impact in the battle to ensure the existence of healthy forests for current and future generations. What is needed is not more words, but strong, forceful and vigorous actions. Words will not save the world's forests from destruction and misuse; actions may.

Deforestation in tropical Asia and the Pacific increased from 2.0 million hectares per year between 1976 and 1980 to 3.9 million hectares per year between 1981 and 1990. This gives the Asia-Pacific region the dubious distinction of having the fastest rate of deforestation in the world. Fully 1.2 percent of the region's forests are lost annually, mostly to land clearing for agriculture and excessive cutting of industrial timber and fuelwood.

It is unrealistic to expect an early end to the pressures driving the clearing and degradation of forests in the region. Poverty, greed, and inequitable distribution of wealth are the basic underlying causes of deforestation. Only when these fundamental problems are adequately addressed will the pattern of forest destruction be curtailed. The challenge of implementing UNCED follow-up in forestry is thus more of a fight for honesty, fairness, and sustainable economic development than it is a search for improved genetic clones and "silver bullet" technological fixes.

In most countries of Asia and the Pacific, the large populations and rapid economic development place exceptional demands on forest resources. In the post-war period, approximately 70 percent of all tropical forest products have come from Southeast Asia. Since the mid-1980s, the figure has risen to over 80 percent. These industrial demands, coupled with the insatiable appetite for new land for agriculture and other development have taken an extreme toll on the region's forests.

Twenty-five years ago, more than 50 percent of Thailand was forested. Today, perhaps only one-quarter of the country is covered with trees. One of the consequences of inappropriate land clearing was the devastating floods and landslides in southern Thailand in 1988. Similar disasters have also occurred in other countries where deforestation was unchecked for years. Ultimately, the widely publicised human sufferings and economic losses these disasters wrought, helped raised awareness among decision makers and led to major shifts in forestry policies such as total or partial bans on commercial logging in natural forests.

Principle 4 of the Rio Declaration states that "to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it." Ensuring the sustainability and enhancing the benefits from conservation and utilization of forests should be the focus of all UNCED follow-up in

forestry. The aim should be to avoid any loss or deterioration of biological resources and ecological services, while simultaneously managing the forests on a productive basis.

Indeed, timber extraction and the conversion of some forests to other land uses will be necessary. In this respect, however, it is the responsibility of governments to ensure that all citizens benefit from development. One should not be blinded by the "veneer of success" when a minuscule segment of society achieves great economic advances, at the expense of the majority. Sustainable utilization of forests can only be achieved through the recognition of the different groups of users who depend on the forest. We must pursue original and flexible approaches to promote sustainability across a variety of tenure, use, and management regimes in different ecological and economic contexts.

We must also keep in mind that forests are more than just timber. They provide a multitude of non-wood products and services with which you are all familiar, including watershed protection, carbon sequestration, and climate regulation. They serve as storehouses of irreplaceable genetic resources and playgrounds for tourists and recreationists.

Timber interests all too often overshadow these important non-timber products and services, in part because the latter are often outside the market economy or are difficult to quantify and value. Additionally, many such benefits accrue to people far from the forests. The time has come for us to "internalize" these externalities. This may require people, who have not done so in the past, to directly or indirectly share in the cost of maintaining forests which provide services of broad value.

This workshop, generously supported by the United Nations Environment Programme, comes at an opportune time to consider how the political commitments made at the Earth Summit have been put into action in the Asia-Pacific region. You are here this week to take stock of these actions and to deliberate how

the provisions of Rio's agreements can be better implemented and reflected in policies, programmes and institutional arrangements for forestry.

By your professional standing, mid-way between the politicians who made the lofty commitments at Rio and the actual users of the forests, you are ideally suited to conduct this task. Given sometimes very limited resources, you are the individuals who develop the operational procedures for forestry and oversee their compliance. You either help eradicate corruption or

condone it. You ensure equitable sharing of the benefits from forests and protect the rights of forest dwellers, or you turn a blind eye to such social needs. You put the long-term ecological interests of the forest as top priority, or you compromise these interests to short-sighted, unsustainable practices.

It is thus your actions, and those of the departments you head, that we are taking stock of this week. In that sense, this workshop serves as a "self-critique" and an opportunity to see how we can improve in translating the rhetoric of Rio into meaningful actions.

UNEP STATEMENT

Suvit Yodmani
Representative and Director for Asia and the Pacific
UNEP Regional Office for Asia and the Pacific

Allow me to extend my warmest welcome to you to this significant Regional Workshop in Bangkok. It is a great pleasure and honour for me to address this important meeting on the Implementation of the Forest Principles. Ms. Elizabeth Dowdeswell, the Executive Director of UNEP has asked me to convey to you her best wishes. She regards your deliberations in this meeting to be of crucial importance, especially since you will be dealing, for the first time, at the regional level, with the implementation of Forests Principles and Chapter 11 of Agenda 21: Combatting Deforestation.

You will recall that these two issues were considered, during the negotiations at UNCED, to be among the *key ingredients* of sustainable development. Your deliberations on these issues gain further significance in the light of the Commission for Sustainable Development's (CSD's) decision to review for the first time, in April 1995, forest issues as part of its five-year thematic review of Agenda 21.

UNEP, in this process, is primarily interested in ensuring the introduction of the environmental perspective within the dialogue and consolidation of approaches to the issue of "sustainable management and development of all types of forests."

To this end, our endeavour is not only to facilitate the dialogue, but also to contribute with the preparation of a set of opportunities and options for action that might be considered for adoption at the 1995 session of the CSD.

In the last year, there have been several initiatives and consultations on forest issues in preparation for the CSD review in April 1995. Initiatives started at Bandung in Indonesia in February last year, and were carried forward by the Helsinki and Montreal Processes, the Forestry

Forum for Developing Countries, the Canada-Malaysia sponsored Inter-Government Working Group on Forests, and the CIFOR - Government of Indonesia dialogue. They will be further strengthened at the FAO-COFO Ad-hoc Ministerial meeting to be held in March.

However, there was a realization that these meetings missed an important point — a strong regional perspective issue. Our workshop is, therefore, to fill this gap and also to complement and support other initiatives when and where appropriate. You will be pleased to learn that we are also cooperating with FAO in organizing similar workshops for the regions of Africa and Latin America and the Caribbean.

This meeting comes at a time when we, at UNEP, are re-orienting our policy and strategy for implementation of key activities in the field of forests. Our endeavour is to play a uniquely distinctive role in the field of forests, and simultaneously to favour such activities which are supportive to the actions of FAO, our sister organization in the UN System that has been assigned Task Manager for Chapter 11 of Agenda 21.

Thus, our major interest is in linking forest issues with other priority global and regional environmental issues such as biodiversity, climate change, desertification and watershed management. Our new strategy focuses on integrated management of terrestrial ecosystems, and their resources for sustainable utilization, considering ecological, social, economic and cultural factors.

Forests have, in the past, been regarded merely as an economic resource, as land covered with trees which could be exploited for timber and firewood, and converted to more economically productive use, such as for agriculture and cattle ranching.

The last two decades have seen the emergence of a more holistic view. This takes into account the full range of other goods and services produced by forests, such as the protective role of forests for the conservation of soil, water, genetic resources and biological diversity. The recent emphasis on forests as carbon sinks to reduce global warming has served to broaden the range of services rendered by forests to a global level.

The progressive decrease of the world's forests through activities such as logging, burning, development of new agricultural land, acid rain, and climate change calls for alterations in policies and approaches to help preserve the integrity and functions of forest lands.

The status and condition of the world's forests has become a source of increasing concern to the international environmental community. Forests account for roughly 40 percent of the world's land area. Out of a total of approximately 3.6 billion hectares of forest cover, 1.9 billion ha. are under tropical forests, according to the latest FAO assessment.

I need not dwell on the consequences of deforestation, but allow me to illustrate the loss of biodiversity due to deforestation in the tropics. Tropical moist forests represent the main repository of the earth's biotic resources, containing about one-half of the 1.4 million named species in the entire world (estimates of total number of species range from 5 to 30 million). At present, an estimated 10,000 species are lost each year because of tropical deforestation.

Concern about the loss of biodiversity arises from economic, social and ethical values that society associates with biological resources. Consensus exists that maintaining biodiversity requires protecting its habitat, in this case, forests.

I believe that the extent of UNEP's commitment to the Rio Principles, and in particular to Agenda 21, gives us a definite responsibility to take steps nationally, regionally and internationally to protect the multi-functional roles of forests. I refer

here to the environmental, economic, social and cultural factors leading to sustainability. I also refer to the environmental issues of forestry: forests at the interface of trade and the environment; inter-linkages of forests and biodiversity; forests and desertification; forests and watershed; and forests and climate change.

These cross-cutting issues show that forestry issues are central to global environmental concerns. Forests have endlessly been discussed during the past decade and have moved from the professional and technical level to the international political agenda. A concrete example of this shift is "the non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests", that is, "the Forest Principles" agreed at Rio. These Principles mark a genuine commitment to control deforestation through a variety of approaches at the global and, most crucially, local levels.

Agenda 21 calls for an enhanced and strengthened role for UNEP. As the principal body within the United Nations System in the field of the environment, we are also required to concentrate on the "further development of international environmental law, in particular conventions and guidelines, reinforcement of its implementation and coordination functions arising from an increasing number of international legal agreements."

It is also in this context that we are cooperating with FAO in assisting to bring about a regional perspective in the Forest Principles and other forest issues, and bring these to the attention of the CSD.

The Forest Principles signal the need for real change. A major weakness at previous policy deliberations in forest management is the failure to distinguish parts from the whole, and to enact comprehensive land-use policies and integrated ecosystem management in most countries. A land-use policy enables the consideration of management that could attain ecological, social, economic and political goals

coincidentally. It represents a general theory that management problems should be understood in their *larger ecological* context.

The contextual thinking inherent in land-use formulation helps to suggest new directions: the context of locally distinct cultures can be saved only if local communities go beyond negatively conceived restrictions and develop positively understood goals for protecting and developing their indigenous cultures. Their defined values, locally generated, are then assimilated into the agreed areas for sustainable development plans. These include a positive conception of the integrity of the land, of its ecological complexity, and of its creative and productive process, all of which are interwoven. Hopefully, any subsequent development will force us towards the universal application of integrated ecosystem management and of land-use planning.

This is the major challenge: to identify the linkages. On that basis, priorities must be identified, and action swiftly taken at national, regional and global levels. I am certain you will find your way in identifying how the Asia and the Pacific region can play a leading role in these complex but essential tasks.

In the next few days you will deliberate on all these critical issues. You know your region better than anyone else. The combined role of UNEP and FAO is to facilitate this dialogue with the hope that this meeting will build consensus on forest and environment interlinkages and on issues you feel are critical enough to be brought to the attention of the CSD. It is, therefore, important that your deliberations concentrate on issues and policy options that require political guidance and impetus.

We feel that whilst governments are deeply involved in the process of initiating actions relating to Agenda 21, it is imperative that they involve decision making and encourage active participation of the public and private sectors, local communities and NGOs in forest management and conservation. Only in this way will we be able to put into practice the new concept of "partnerships" validated at the Rio Summit. Also in this way we would achieve that new dimension, in addition to the governmental one, to be incorporated to ensure the full implementation of Agenda 21, involving the widest participation possible. The preamble of Agenda 21 captures this notion of partnership succinctly when it states "no nation can achieve sustainable development on its own; but together we can."

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Country Statements

Bangladesh

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Background

Bangladesh, with a land area of 14.4 million hectares, sustaining a population of about 120 million, is one of the most densely populated country's of the world (about 800 people per square kilometer). The country's potential tree growing areas total about 2.56 million hectares which is 17.8 percent of the nation's land area, but the actual tree-covered area is estimated to be only 7 or 8 per cent of the land area.

The deforestation rate is estimated to be 3 percent (about 8,000 hectares) annually. Because demand exceeds the sustainable supply of forest products, degradation of forests and depletion of trees from the rural groves is constantly taking place. Fragmentation of land holdings, disposal of property to tide over poverty, destitution caused by flooding and ethnic migration from across the borders, are major forces driving forest clearance for dwellings, cultivation and subsistence living.

The forestry sector of the country is currently in a state of serious crisis, both in matters of resource supply and environmental degradation. Immediate innovative programmes for preservation of forests and development of the forestry sector are urgently needed.

The Government of Bangladesh (GOB) is fully aware of the severity of the forestry and environmental situation. It thus resolved to bring about a positive, qualitative and quantitative change in the forestry sector. Both national and international expertise and financial assistance are being sought to support the efforts.

The Forestry Master Plan

Subsequent to UNCED, the GOB, assisted by the Asian Development Bank (ADB) and the United Nations Development Programme (UNDP), embarked upon a long-term planning exercise under the Forestry Master Plan (FMP) framework. The FMP is an example of Bangladesh's commitment to the UNCED goals and principles.

Under the FMP process, the forestry sector was assessed and measures were recommended to preserve and develop the nation's forest resources. The FMP was drawn up by a team of local counterparts and national and international consultants spanning a 20 month period from October 1991 to May 1993. The 20-year plan identifies sectoral strengths and weaknesses, and details the steps required to enhance sectoral development. The focus of the plan is on institutional factors - policy, education and training, and administrative structures. Special interest groups like the landless, women, NGOs, minorities (forest dwelling tribes) and private industry received special attention.

During its various stages of formulation, the FMP was discussed extensively in various fora including those of academics, journalists, environmentalists, planners, administrators, policy makers and politicians over a protracted period of about four years. It is now in the final draft, awaiting GOB approval.

Forestry Master Plan Implementation Stage

The first steps in implementing the FMP are to translate the broad sector programme into feasible project proposals and to develop appropriate forestry legislation, institutional reforms and programmes/projects needed for strategic development.

To enable the GOB to embark on systematic implementation of the FMP recommendations, two projects have been drawn-up and submitted to the ADB and FAO :

- (1) Project preparatory technical assistance; and
- (2) Institutional support for the FMP.

The objectives of the first project are to assist the GOB in identifying and preparing forestry sector projects, and to develop an effective policy and institutional framework to support the development of the forestry sector.

The project's objectives are focused on:

- participatory forestry for increased wood production and forest sustainability;
- environmental management to conserve protected areas and natural forests;
- increased wood production by means of intensively managed forest plantations using genetically improved seed/propagules;
- institutional development (e.g. training, technology transfer, R & D, policy and legal reforms).

The second project is intended to provide support in the three crucial areas of FMP implementation. These are:

- preparation of forestry legislation to support the new forest policy;
- institutional reforms and restructuring

needed to permit effective implementation of the FMP and the new forest policy; and

- preparation of detailed technical assistance and investment proposals over the next five years to be included in the GOB's next development plan, and for possible funding by external donors.

National Forest Policy 1994

In line with the recommendations of Agenda 21 and the Forest Principles, the GOB drew up a new forest policy on the basis of the FMP recommendations. The new policy, approved by the GOB in November 1994, demonstrates the high-level of political commitment. It envisages bringing 20 percent of the country's land area under tree cover by the year 2015 through extensive and intensive afforestation and reforestation programmes, conservation and preservation measures, and rural forestry programmes. The new policy strongly encourages people's participation in forestry development and management both as a tool and means for sustainable development.

For the preservation of natural heritage and biodiversity, the new policy aims to increase the extent of protected areas to 10 percent of the forest land by the year 2015.

The new policy recommends a ban on log exports and the use of government owned forest land for purposes other than afforestation. It also incorporates recommendations for strengthening the present Forest Department and for the establishment of a new Social Forestry Department.

The GOB also took a general executive policy decision not to fell any natural forest up to the year 2000. In locations where natural forests have been largely replaced by plantations, the residual natural stands shall be retained to preserve biodiversity.

Establishment of an Environment Management Wing

To strengthen environmental management and monitoring capabilities of the Forest Department (FD), a new Environmental Management Wing with regional offices has been created in the FD under the Deputy Chief Conservator of Forests. This new wing seeks to ensure the long-term productivity of forest land through maintenance of biodiversity, soil quality and modulated water flows. The wing also will be directly responsible for the planning and implementation of nature conservation activities within protected areas.

The new Environmental Management Wing will influence the FD's normal forestry operations by:

- establishing environmental standards and criteria to be incorporated into the FD's Resource Information and Management System (RIMS) module for formulating alternative forest management systems;
- collecting environmental data, arranging periodic environmental surveys and conducting environmental assessments through contractual agreements; and
- monitoring the environmental impacts of the FD's forest operations.

Measures for Afforestation of Privately Owned Land

The country has some 50,000 hectares of privately owned land which is mostly denuded, but could potentially support trees. The GOB in a recent policy circular appealed to the land owners to cover these denuded forest lands with tree plantations (timber, horticultural and cash crop) within a reasonable time frame. It was also made clear that if the owners failed to plant

the barren areas and halt further deterioration of the soil and the environment, the management of such land will be taken over by the state under the provisions of the Private Forest Act. This threatened action is expected to motivate land owners to reforest these extensive areas of degraded land.

Coastal Green Belt Project

After the Rio Summit, the GOB initiated a US\$28.9 million Coastal Green Belt Afforestation Project. The project envisages the creation of 5,020 kilometers of plantations on the slopes and foreshore areas of coastal embankments, and the creation of 40,000 hectares of coastal plantations to protect the hinterland from cyclonic storms and tidal surges. This project is funded by the ADB, and when completed, is expected to create a living wall of trees protecting human life and property.

City Afforestation

Many cities in Bangladesh are undergoing fast economic development at the expense of the surrounding environment. After the Rio Summit, an environmental and aesthetic improvement project was approved by the GOB in 1994. The project envisages planting 5 million trees in the cities and suburbs of five major urban areas of the country.

National Award Encouraging Tree Planting

The GOB made full effort to shape tree planting as a "Social Movement". The President, Prime Minister, Council of Ministers, senior civil servants, and social workers, all encourage people to plant trees in all possible and feasible areas. The people are encouraged through official programmes, public meetings and addresses. The statesmen, officials and social leaders themselves also plant trees in the course of their

visits to rural areas and institutions. This action generates enormous enthusiasm in the population towards tree planting, not only for environmental improvement but also as an economic activity. To continue this public enthusiasm and to create a competitive urge for qualitative and quantitative performances, a national tree planting award was introduced in 1993.

Participatory Forest Management

The custodial approach of forest management pursued by the country since the colonial days has proved counter productive for sustainability of both natural forests and plantations. Application of criminal laws and police actions for forest protection have failed to confront organized and deliberate pilferage or the damaging activities by neighboring communities.

The GOB now acknowledges the social and economic dimension of forestry. In a move to involve the forest communities, the GOB has pragmatically encouraged the conservation, development and management of resources through people's participation. The recommendations of Agenda 21 and the Forest Principles were a catalyst to a programme already initiated by the GOB. Over 60,000 hectares of plantations have been raised in traditional forest

lands. This programme has proved popular with communities near forests, especially the landless who previously had been instrumental in damaging the forests.

Future afforestation and reforestation programmes to be funded with ADB and World Bank loans will also acknowledge the necessity for people's participation in afforestation and reforestation, especially in areas of dense habitation.

Integrated Resource Development of Natural Mangrove Forests (Sundarbans)

A major portion of the world's largest mangrove forest, the Sundarbans, lies in Bangladesh. Mangrove forests are versatile habitats for flora and fauna and are especially important for fish. They are also fragile ecosystems, however, which need careful management.

In a bid to foster multi-sectoral development of the mangrove ecosystem, the "Integrated Resource Development of the Sundarbans Forests" project, assisted by UNDP/FAO was initiated by the GOB and is now nearing completion. The project is developing an integrated management plan for the mangrove forests which supports multi-sectoral development of forests, fisheries, wildlife, apiculture, tourism and forest worker's welfare.

Bhutan

*Sangey Thinley
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Background

The Kingdom of Bhutan covers an area of 40,076 square kilometers. It is one of the most rugged and mountainous countries in the world. The land rises from 150 metres above sea level in the south to more than 7,500 metres in the north. SPOT and Landsat images from 1994 show that 64.4 percent of the total area of Bhutan is still under effective forest cover. In addition, 8.1 percent of the country is covered with scrub forest. This is higher than the stipulated forest policy requirement of 60 percent forest cover.

The Royal Government of Bhutan recognizes that environmental protection should constitute an integral part of the development process, and can not be considered in isolation. Furthermore, economic development policy acknowledges that development today must not undermine the development and environmental needs of present and future generations. Such policy decisions are consistently reflected in the strategies adopted for economic development and natural resources utilization.

Forest Policy

To ensure proper orientation towards sustainable development, a Forestry Master Plan spanning a period of 20 years has been prepared and is under implementation. The proposals of the master plan have been translated into concrete programmes and projects through a Forestry Programme Framework, consistent with the national five-year plans.

Every effort is made to ensure that all forestry operations in the country are based on sustainable management principles. National forest policy also requires that all commercial logging be supported by an approved management plan.

So far, Bhutan has been able to keep up with this policy. FAO has contributed substantially to make this possible through consistent and useful technical assistance.

People's participation in management is central to the sustainability of any natural resource. Recognizing this fact, Bhutan has introduced participatory programmes such as social forestry, community forestry and village forestry. Presently, these programmes are supported by the World Bank-Swiss Development Corporation Social Forestry Project. In addition to these programmes, Bhutan is also implementing "Integrated Conservation and Development" programs in Manas and Jigme Dorji National Parks. The objective of these programs is to integrate conservation and rural development needs, whereby resource use and access are rationalized to ensure sustainability.

Shifting Cultivation

Recognizing the fact that unsustainable land use practices such as shifting cultivation eventually lead to loss of biodiversity and environmental degradation, the National Assembly has decided to phase out shifting cultivation within the Seventh Plan. People affected by this decision will be allocated suitable agricultural land in other parts of the country.

Protected Areas

In spite of being one of the poorest countries in the world, Bhutan has gazetted more than 26 percent of the total area of country as protected areas. This clearly reflects the high priority accorded to the preservation of the rich biological diversity for the benefit of the present and future generations. Detailed surveys of biological

diversity have been conducted on more than 50 percent of the country's land area. Management plans are being prepared and implemented in most of the protected areas.

Funding

To sustain the long-term financing needs of conservation efforts of Bhutan, the "Bhutan Trust Fund for Environmental Conservation" (BTF) has been established with a capital of US\$ 13 million which will eventually be increased to US\$ 20 million. The main contributors to the BTF are the World Bank (Global Environment Facility), WWF-US, the Netherlands and Norway. Interest from the trust fund is used to finance recurring and infrastructure costs for environmental conservation.

Bhutan has initiated a long-term cooperation programme with the Netherlands on sustainable development. This cooperation covers such diverse fields as social, economic, cultural, ecological and technological development and conservation of forests. It also recognizes the value of learning from each other through the principle of reciprocity.

Issues that need to be addressed

The following issues should be considered by the Commission on Sustainable Development during its review of forestry:

- economic trade offs of preserving biodiversity
- transfer of technology from industrialised nations to under-developed nations
- how to ensure that all nations abide by the principles of sustainable forest management
- access to information on bio-technology
- copyrights of genetic resources

Conclusion

Bhutan considers itself one of the pioneers in advancing the goals and objectives of Agenda 21 and the Forest Principles. The country's policies and programs are all directed at fostering sustainable development that takes into account both the present and future needs of the Country and the world.

China

Zheng Rui

Director

Department of International Cooperation

Ministry of Forestry

Since UNCED, China has initiated an ambitious series of actions to implement Agenda 21 and the Forest Principles. These include:

- Monitoring and participating in all initiatives related the Commissions on Sustainable Development (CSD), including the Malaysia-Canada Initiative, Indo-British Initiative, Helsinki Process, Montreal Process, etc. The Government of China is drafting country reports and statements for CSD in accordance with the format established by these meetings.
- Joining the Ramsar Convention (wetlands protection) and the UN Convention to Combat Decertification. The State Council has designated the Ministry of Forestry as the lead agency for implementation of actions and commitments under the agreements. A number of coordinating meetings have been convened to prepare detailed operational plans involving over a dozen line ministries.
- Drafting of an "Implementation Plan for the Forest Principles" and a "China Forestry Agenda 21" within the framework of China Agenda 21 (see following content lists of these documents).
- Stepping up law enforcement in nature conservation and wildlife conservation, including illegal trade in endangered fauna and flora (including animal parts).
- Continuing efforts in afforestation and reforestation (4-5 million hectares per year), biodiversity conservation, combating desertification; and watershed protection.

Several practical problems and constraints have been encountered in the process of translating the Forest Principles into action. These include:

- budgetary constraints;
- pests, including insect and disease problems, as a natural consequence of large scale afforestation
- technical assistance and improved genetic materials are needed; and
- population pressure, resulting in over harvesting and over grazing.

The following suggestions are offered for consideration by the Commission on Sustainable Development as methods to enhance implementation of Agenda 21 and the Forest Principles:

- Appeal to the international community, particularly to industrial nations, to follow through on commitments made at UNCED. More financial and technical cooperation is needed.
- Encourage the exchange of genetic materials and natural enemies for pest and insect control. Enhanced cooperation among all countries, including south-south cooperation, is needed.

China's Forestry Agenda 21

Chapter 1	Foreword
Chapter 2	Strategy and steps to be taken for sustainable forestry
Chapter 3	Cultivation, protection and management of forest resources
Chapter 4	Ecological shelter systems and their roles
Chapter 5	Desertification control
Chapter 6	Biodiversity protection and wise use of forests and wetlands
Chapter 7	Integrated forestry development and poverty alleviation in the mountain areas
Chapter 8	More efficient use of wood resources
Chapter 9	People's participation in forestry
Chapter 10	Consolidation of basic infrastructure of forestry
Chapter 11	System reform and legislation
Chapter 12	Development of forestry research and education

Implementation Plan for the Forest Principles

Ministry of Forestry China

- I. *The role of forests in the environment*
 - The irreplaceable role of forests
 - The efforts of the Chinese Government in conserving and developing forest resources

- II. *Forestry Development Strategy*
 - Basic concepts and rules to follow
 - Objectives and emphasis

- III. *Development Priorities and Layouts*
 - Forest/plantation tending and timber plantation establishment
 - Shelter-belt establishment
 - Desertification combating programmes
 - Establishment of non-wood or fuel plantations
 - Forest products industries

- IV. *Supporting Factors (conditions)*
 - Stability and continuity of policies
 - Joint efforts from the government, communities and farmers
 - Plantation establishment for special end-uses

- Accumulation of funds from all possible channels
- Increased inputs for forestry; larger percentage of the national budget for forestry
- Continuation of the "open-door" policy; enhanced international cooperation
- Further improvements in research, extension, and education

Appendices:

1. China's strategy on sustainable forestry development
2. China's ecological forests establishment programmes
3. China's bio-diversity situation and protection strategy
4. Wise use of forests and forest by-products
5. Forests and environment

Fiji

R. Swarup
Conservator of Forests

Background

Fiji has a total land area of 18,390 square kilometers comprised of 300 islands. Approximately 100 are inhabited, supporting a population of 771,100 with a population growth rate well below 2 percent (Bureau of Statistics 1990). The largest Islands are Viti Levu and Vanua Levu which together have over 90 percent of the population and comprise 87 percent of the land area.

Forest Resources in Fiji

Approximately 800,000 hectares, or about 44 percent of the country remain under natural forest cover. Afforestation has brought an additional 50,000 hectares of long-deforested land back into production.

The indigenous forest of Fiji is largely tropical moist forest plus about 42,000 hectares of mangrove forest. Fiji thus has just under half of its total land area (1.83 million hectares) under forest. Extensive areas of the drier (mainly western) parts of the two larger islands, and many of the smaller islands, have suffered severe deforestation. Consequently, the indigenous forest cover is actually much more than 50 percent in the wetter parts of the country and much less than 50 percent in the drier parts. Afforestation is mainly concentrated in the western areas of the country. The forest distribution is summarized in Table 1.

Indigenous Forests

The indigenous forests of Fiji occupy 797,000 hectares, including 253,000 hectares of

unexploited production forest upon which the hardwood industry is presently based. This area comprises 31 percent of all forest. Eighty-nine percent of the unexploited production forest and 84 percent of all Fijian forests are in communal ownership.

The Land Resources Division's (LRD) forest inventory of the late 1960's (LRD 1973) indicated a commercially available volume of 10.9 million cubic meters. From 1970 to 1993, about 85,000 hectares were logged, producing an annual log volume of around 200,000 cubic meters, compared with an approved annual cut of 350,000 cubic meters.

There is an estimated 5.6 million cubic meters in commercial forests on Viti Levu and 4.4 million cubic meters on Vanua Levu. Volumes per hectare are low compared to those of the dipterocarp forests of Malaysia and the Philippines. About 75 percent of the production forests have volumes averaging 45 cubic meters per hectare.

Table 1
Distribution of Forest Resources By Type and Location

	INDIGENOUS		PLANTATION	
	Mangrove Forests	Tropical Moist Forests	Softwood	Hardwood
Total area of forest type (ha X 1000)	42	797	50	54
<u>% Forest area By Division</u>				
Central & Eastern	35%	33%	8%	47%
Northern	14%	41%	20%	37%
Western	51%	26%	72%	16%

Fiji Pine Limited (FPL) Plantations

In 1990, approval was granted by the Government for the corporatization of the Fiji Pine Commission (FPC) to Fiji Pine Limited (FPL), a limited liability company which has been operational since January, 1991. The shareholders in FPL are the Government and the Fiji Pine Trust which holds shares on behalf of landowners and "extension" pine forest owners. The restructuring is in line with the Government's policy of corporatization and the requirements of the FPC Act which aim to establish a viable forest industry controlled by landowners.

By the end 1993, the area planted by FPL was 37,291 hectares. Plans are to increase the plantation area to 55,000 hectares by the year 2006.

Part of FPL's mission is to provide support, training, and technical advice to all extension or communal pine owners. Prior to 1990 extension pine owners were serviced by the Forestry Department's Extension Division. Extension pine plantations are owned, established, and managed by landowners at their own cost. About 14,500 hectares have been planted by extension pine owners. The area is being increased at a rate of 700 hectares per year.

Hardwood Plantations

By the end of 1993, the Forestry Department had established 43,500 hectares of plantations, mainly of hardwood. The planting target is 4,500 hectares per year, with a total target of 85,000 hectares by 2000 (Ministry of Forest 1990). One of the findings of the recent Fiji Forest Sector Study (1989) was that expansion of the forest resource base by afforestation and reforestation could safely go as far as doubling the present areas of pine and hardwood plantations.

Timber Harvesting and Utilization

Having developed plantation pine processing and marketing facilities, Fiji has reduced its indigenous log harvest over the past few years

as timber demands are increasingly being met from plantation pine. When harvesting, processing and marketing of mahogany begins in the year 2000, Fiji can further reduce its indigenous forest harvest to a sustained level for about 100,000 cubic meters per annum. The country's strategy, to reduce harvest from indigenous forest as plantations have mature has been highly successful.

Timber Industry Structure

The Fiji Forest Sector Development Study (1989) indicated that the timber industry faces a period of urgent adjustments. The rapidly rising output, exacerbated by a very weak domestic demand, requires an expeditious orientation towards export. Investment opportunities in marketing, processing, and forest plantations will be available. Careful planning and follow-up are needed, as the potential benefits to the Fijian economy are substantial.

Log Exports

Fiji has discouraged the export of unprocessed timber to maximize returns from its forest resources. Exports of unprocessed logs have been banned since 1989. The Government is encouraging processing and marketing of finished products from sawn timber by providing attractive incentives.

Allocation of Cutting Rights

The major factor determining timber cutting rights in Fiji, as elsewhere in the South Pacific Islands, is the pattern of land ownership. Most land, including productive forest land, is owned by Fijian communal groups called "mataqali". Crown land accounts for only seven percent, and freehold land about ten percent of the total. Fijian mataqali do not have any corporate authority to deal in land and all negotiations for the use of the indigenous timber growing on that land have to be conducted through the Native Lands Trust Board

(NLTB). Screening of applications is carried out between NLTB and Forestry Department.

To harvest timber on native land a Forestry Right License is required under law. NLTB's written consent is also needed if a Forestry Right License is to be issued on native land.

There are four distinct categories of tenure for timber cutting rights in the natural forests. These are:

- Timber Concessions
- Long-Term Licenses
- Annual Licenses
- Other Licenses and Prepayment Licenses (usually for land clearing)

The most advantageous to a processing company is the "timber concession" which typically runs for a 15-30 year period with various conditions attached (e.g., maximum and minimum annual cut, obligatory species to be removed, etc.).

"Long-term licenses" usually run for 10 years. Most of the smaller producers operate under "annual licenses." "Prepayment licenses" are used for cutting of firewood and for cutting timber from areas to be cleared (e.g., land for farming).

Major Initiatives to implement Agenda 21 and forest principles

Fiji is committed to the effective implementation of UNCED agreements. The country has signed and ratified the International Convention on Biological Diversity and the UN Framework Convention on Climate Change.

A number of initiatives aimed at sustainable forest use have been taken before and following the 1992 Earth Summit. The major initiatives are mentioned below:

Forestry Sector Review and Fiji Tropical Forestry Action Plan

Fiji's Forestry Sector Review and Fiji's National Forestry Action Plan (NFAP) were completed in 1989. Most of the project proposals identified in the NFAP have been implemented or are currently under execution.

Re-inventory of the Indigenous Forest (Fiji German Forestry Project)

As the last inventory of Fiji's native forests was undertaken in the 1960s by the Land Resources Division, it was felt that a reinventory was necessary, since a number of devastating cyclones had damaged forests in recent years.

Most of the field inventory work is now complete and the final results should be available soon. The project has established a Geographic Information System (GIS) providing most up-to-date forest resource information. It will also be possible to continuously monitor the rate of deforestation and changes in the forest area by regular analysis of satellite imagery. The updated information on forest resources will provide an important tool for management.

Development and Implementation of Fiji's Logging Code of Practice

Logging activities can cause substantial changes in the structure and composition of forests. While most of these changes are short-lived, poorly executed operations can have long-term consequences.

Although some guidelines to minimize damage to forests were incorporated in logging licenses and concession agreements in the past, they have not been sufficiently comprehensive. Many were subjective and open to different interpretations.

Concern for the environmental aspects of forestry led to a decision to produce a National

Code of Logging Practice to provide practical rational guidance to Forest Officers and loggers on how to minimize adverse effects of operations on the forest environment. The code was also expected to enhance safety standards.

In 1986, a committee comprised of forestry personnel, Logging School officials, and industry representatives was formed to develop the National Code. After numerous consultations with industry and related personnel, the Code was finalized and launched in 1990. All license holders must now comply with all terms of the Code.

Regional Code of Logging Conduct

The 25th South Pacific Forum meeting, held in Brisbane in 1994, expressed strong concern about exploitation of tropical forests in the region. Particular concern was raised over harvesting practices in indigenous forests and the need to maximize forest benefits for Pacific Island Governments and landowners alike.

The Prime Ministers of Australia, Fiji, New Zealand, Papua New Guinea, Solomon Islands and Vanuatu announced an agreement calling for:

- a common code of conduct governing logging of indigenous forests, to which companies operating in these countries would have to adhere;
- urgently improving the monitoring of logging and export of timber; and,
- a meeting of senior officers within two months to begin to implement these discussions.

The first meeting of senior forestry officials took place in Vanuatu in September 1994, followed by the second meeting in Fiji in December 1994, where a common code for logging conduct was discussed. The code is nearly finalized and will be presented for adoption at the next Forum Meeting scheduled to be held in Papua New Guinea in the first quarter of 1995.

ITTO Membership

Fiji has agreed to become a member of the International Tropical Timber Organization, beginning in 1995. Fiji will thus follow the International Tropical Timber Agreement and all other agreements on sustainable management of forests under the ITTO framework.

Fiji Forest Resources Tactical Planning Project

With support from AIDAB, this project was initiated in 1994.

The main goals are:

- to design and implement a practical and effective process for the preparation of environmentally sound coupe-level logging plans, hardwood plantation establishment plans, and management plans for larger areas; and,
- to enhance skills within the Department of Forestry to implement these plans.

This project aims to reduce the environmental impact of timber utilization practices by developing a planning process that is better documented, based on better consultation among stakeholders, capable of better control, and resulting in improved returns to the Government, landowners and the industry.

The following activities have been undertaken as part of this project:

- Production of maps - prepared from existing aerial photographs - suitable for detailed forest management planning (ie., scale of 1:10 000).
- Preparation of logging plans and plans for hardwood reforestation activities. This involves the incorporation of the maps into a document describing the logging operation for particular coupes.

A planning and monitoring process will be developed in consultation with interested parties, primarily the Department of Forestry, timber industry, land owners and the Native Land Trust Board.

- Preparation of management plans and plans for sustained yield of forest produce. The plans use national and regional level information to calculate long term sustainable yield for concession or region-sized areas. The calculation will be formalized in written management plans subject to environmental constraints and reservations.
- Training to carry out the above three components. Heavy emphasis is placed on training counterparts for the specialist consultants.
- Project management, providing for administration, monitoring, preparation of a Project Implementation Document and a Midterm Review.

The primary target groups are Department of Forestry staff, logging industry representatives and local communities. The most important beneficiary will be the natural forest environment of Fiji.

Fiji German Forestry Project on Reduced Impact Logging

The Fiji-German Forestry Project has initiated research into low-impact logging in natural forests as a pilot project whereby different compartments are logged at varying intensities. Logged compartments will be monitored to assess the response of the residual trees and to evaluate natural regeneration. Records of cost and revenue generated from the sale of the logs have also been stored. In addition, variable diameter limits have been used for different species. When the exercise is complete it will enable new prescriptions to be written to allow selective logging in native forest at the appropriate

intensity so that the regenerative capacity of the forest is not adversely affected.

Amendment of Forest Act and Legislation

The Forest Act was reviewed and decreed in 1990. Forest legislation is currently under review.

Forest Reserves

Forest Reserves cover about 37,000 hectares of native forests (currently the boundaries of these reserves are being demarcated). The department has developed two forest-based ecotourism areas for the landowners to manage.

Royalties Review

Timber royalty rates were last reviewed in 1990 and another review is presently under consideration.

Constraints

The main constraints in implementing the Forest Principles are:

- inadequate resources to pay landowners compensation for reserves, conservation and protection areas.
- lack of training and awareness at all levels - landowners, forestry staff, industry and in the general public.
- insufficient landowner participation at all levels (particularly in processing and marketing of forest products).
- lack of industrial structure for high value export markets.

India

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Ministry of Environment and Forests

Background

India has an area of 3,287,263 square kilometers and is the second most populous country in the world. Its population in 1991 was 843.9 million. The Forest Survey of India monitors the state of the forests every two years. The report for 1991 showed that, although the officially recorded forest area in the country was 77 million hectares, the area actually covered by forests was only 64.1 million hectares.

Ten million hectares of forest cover are managed as "protection forests" for ecological stability; 15 million hectares for produce timber for various industries, commerce, defense needs and railways; 25 million hectares are used in social forestry projects to meet the demand for firewood and fodder; 14 million hectares are national parks and wildlife sanctuaries; 41.49 million hectares are Reserved Forests; 23.31 million hectares are designated as Protected Forest and the remaining 12.21 million hectares are unclassified forest areas.

Forest Resources and Their Management

The forest vegetation in India ranges from tropical evergreen forests to alpine forests. Tropical rain forests constitute the principal component and are comprised of mostly broad leaved hardwoods. Nearly 1,600 wood species are commercially exploited and, of these, nearly 200 species have industrial value and specific end uses.

About 80 percent of India's forests are managed under working plans which usually cover a period of 10-15 years. Although the working plans have been by and large adhered to, it has not been possible to secure adequate natural re-

generation in the forests. This is mainly due to overgrazing and fires. Forest degradation is widespread near communities and the various rights, concessions and privileges enjoyed by the growing population, plus other biotic pressures, are increasingly threatening the forests.

To increase the forest cover and also satisfy the increased demand for forest resources, plantations are being established to supply firewood, fodder, and wood for use in industries and construction (Table 1).

<u>Period</u>	<u>Million hectares</u>
Prior to 1979	3.334
1979-80	0.222
1980-85	4.650
1985-90	8.870
1990-91	0.744
1991-92	1.015
Total	18.835

During the last decade (1980-1990) India promoted the Social Forestry Program with the main objective being to produce fuelwood, fodder, small timber and other products to meet the needs of rural communities. A number of externally aided social forestry projects were implemented during this period with an emphasis on the afforestation of non-forest lands.

The present forest management approach is aimed at comprehensive and sustainable forestry development. The rehabilitation of degraded forests, primarily through natural regeneration, has been given high priority. Forestry projects encompassing all elements of forestry (e.g., social and farm forestry, participatory management and wildlife conservation) have been launched in three States and similar projects are being formulated in other states.

Increasing attention is being given to protection of natural forests and the planting of indigenous species in various afforestation programs. Emphasis is also being placed on the preservation and propagation of various non-wood forest products including medicinal plants.

The concept of participatory forest management on a usufruct basis has been gaining ground as an effective means for regenerating India's degraded forests. The National Forest Policy of 1988 stresses that rights and concessions from forests should primarily be for the bona fide use of the communities living in and around the forests, especially tribal people.

It is in this context that in June 1990 the Government of India issued a circular highlighting the need, and the procedures, to be adopted, for the involvement of village communities and voluntary agencies in the protection and development of degraded forests. To ensure community participation, the State Governments have been advised to enlist the communication and extension expertise of local non-government organizations to serve as interfaces between the Forest Departments and the communities. These guidelines constitute a significant departure in forest management practice because increasing emphasis has been laid on the active participation of the people. They are involved in the development of micro-level plans whereby they participate in the decision making stages right through to implementation.

Another significant point is the benefit-sharing arrangement which is intended to give village communities a stake in the protection and de-

velopment of the degraded forests. In pursuance of the guidelines of the June 1990 circular, several State Governments have in turn issued appropriate resolutions/orders providing for the village communities to share the benefits from the adjoining degraded forest areas that they agree to protect and develop. Due to the high level of people's participation, Forest Protection Committees (FPC) and Forest Development Committees (FDC) have been formed in many areas.

Under the redefined priorities of the Forest Policy of 1988, the supply of raw material for industries is to come from private sources rather than from Government forests. Forest-based industries should, as far as possible, raise their own raw materials, preferably by establishing direct relationship with individuals who can grow them. A positive development of the policy is that many of the forest-based industries with the assistance of financial institutions, have encouraged private farmers to plant trees in their farm lands. Paper and pulp industries now obtain a sizeable portion of their raw materials from private sources. Plywood and matchwood species are also being planted in farmlands and community wastelands in a number of States.

Environmental Protection, Conservation and Watershed Management

The increasing pressures on the environment and natural resources emphasize the need for conservation and sustainable development. In order to lay down guidelines that will incorporate environmental considerations into the development process, the Government of India adopted the National Conservation Strategy, in June 1992. The Strategy has identified population control and conservation of natural resources including land, water, air, biodiversity and biomass, as the priority areas needing specific, concerted action.

The conservation strategy recognizes that afforestation and forest conservation must integrate activities and expertise from different sectors and departments. Specifically such a strategy must include efforts to involve government agencies dealing with rural development, water conservation and harvesting, soil conservation, animal husbandry, sericulture and agriculture. Such an integrated approach is all the more essential because the factors that have led to the degradation of our forests often relate to problems occurring in other sectors.

Under the new forest management approach, biodiversity conservation has become an integral part of overall forest management. The network of protected areas in the country, which is being progressively expanded, now covers 75 national parks and 421 sanctuaries over an area of about 141,000 square kilometers. This constitutes 4.26 percent of the total land area and 13.9 percent of the forest area of the country.

Forest Products

The estimated annual production of timber and fuelwood in the country is 12 million cubic meters and 40 million cubic meters, respectively, as against the current estimated demand of 27 million cubic meters and 450 million cubic meters, respectively.

The large gap between demand and supply of timber, firewood and fodder is being reduced through various methods, including extensive plantations of appropriate species in degraded forests and community lands; protection of forest areas to facilitate natural regeneration; encouraging farm forestry and agroforestry on private lands; improving wood utilization by increasing use of wood saving devices; etc. Although many of these activities are sponsored by the Government, there has also been increasing participation of communities and voluntary organizations.

Farm forestry and agroforestry have been encouraged for the production of raw material for

forest-based industries. Farmers are encouraged to establish plantations on their farm lands in consultations with industries and financial institutions.

The remaining shortage of timber will be met by imports. India has been importing about 1.4 million tons of timber, worth about US\$ 150 million, annually from the Southeast Asian countries.

Forest Industries

In India, non-wood forest products (NWFPs) are derived from over 3,000 plant species. In addition to their value as food, they provide employment to indigenous people and villagers living near the forests. Some of the NWFPs are actually industrial raw materials of great economic value.

Most of the forest-based industries in the country are small scale. There are also a large number of processing enterprises.

India's Forest Policy of 1988 stipulates the following considerations for establishing forest-based industries and the raw materials needed to supply them:

- As far as possible, forest-based industries should meet their raw material requirements by establishing a direct relationship with the individuals who can grow the raw material.
- The establishment of a forest-based enterprise should be permitted only if there is assured availability of raw material. The fuel, fodder and timber requirements of the local population should not be sacrificed for this purpose.
- Forest-based industries must not only give priority to providing employment to local people, but also involve them fully in raising trees and raw material.

- Industries will not be allowed to utilize natural forest areas for plantations or other activities. Such forests serve as a gene pool resource and help to maintain the ecological balance.
- Small and marginal farmers will be encouraged to grow wood species required for industries on marginal/degraded lands available to them.
- The supply of forest produce to industries at concessional prices should cease. Industries should be encouraged to use alternative raw materials, and the import of wood and wood products should be liberalized.
- The above considerations will, however, be subject to the current policy relating to land ceiling and land laws.

The change in the National Forest Policy with regard to forest-based industries has no doubt affected the industries which previously received preferential treatment and concessions from the government. The shortage of industrial raw materials from forests and subsequent increase in prices have forced the industries to look for alternative sources. Timber imports are on the rise. The industries have also started obtaining a part of their raw material requirements from private farmers. It is hoped that in a decade or so, the nexus between forest-based industries and farmers will be strong enough to reduce the dependence on natural forests to a minimum.

Planning of Forestry Development

Funding for the Eighth Five Year Plan (1992-97) is nearly three times that of the Seventh Plan. However, the present level of funding for the forestry sector is not adequate and efforts are being made at various levels to augment investment in this priority sector.

The priority areas of the Eighth Five Year Plan are: preservation of biological and genetic diversity in terms of fauna and flora; protection of forest cover from further degradation; rehabilitation of wastelands to make them productive; preservation and conservation of the fragile and critical ecosystems; decentralization and involving the general public in the development process.

Forest Policy

India's current policies, programs and initiatives in the realm of forestry broadly conform to the "Forest Principles." The 1988 National Forest Policy embodies many of the highlights of these principles. The Government's commitment to the management of forests through a participatory process is reflected in the June 1990 circular which envisages the active involvement of the village communities, especially women, the disadvantaged, and NGOs, to assist the forest departments in sustainable forest protection and regeneration initiatives. Various problems and conflicts arising out of the tribal forest interface are being addressed through a number of administrative measures. Increasing importance is being given to the conservation of existing natural forests with emphasis on natural regeneration. The current integrated approach to afforestation and forest conservation is necessary to deal with pressures from different sectors which are responsible for degradation of forests. Biodiversity conservation has become an integral part of forest management. The Government aims to increase the vegetal cover to one third of the country's land mass.

Various conservation measures have been taken up for the management of protected areas such as the strengthening of legislation and eco-development efforts. There has been increasing association with international and external agencies (e.g., the World Bank, FAO/UNDP, ODA, OECF, SIDA, CIDA, DANIDA, etc.) in the execution of a number of forestry projects for afforestation, forest conservation, wildlife conservation, research, education and training.

Forest Legislation

The 1927 Indian Forest Act is the principal legislation which regulates the management of forests by the States. Since its adoption, forestry has undergone many conceptual changes leading to the new National Forest Policy in 1988. A revised and more comprehensive legislation is now needed which will take into account the new National Forest Policy and the emerging imperatives of conservation of forests and wildlife and preservation of the nation's biodiversity. The 1927 Indian Forest Act is therefore being amended. The draft of the revised legislation is being circulated among the State Governments for their views before finalizing the legislation.

The 1980 Forest (Conservation) Act was enacted to check the indiscriminate diversion of forest land to non-forest purposes. Under this Act, prior approval of the Central Government is required before any forest land is diverted for non-forest purposes. In 1988, the Act was amended to make the existing provisions more stringent. Revised and comprehensive rules and guidelines under the 1980 Forest (Conservation) Act were reformulated in 1992.

Guidelines for promoting people's participation in forestry have been issued to the State Governments. Most of the States have issued Government orders/Resolutions facilitating participation of people not only in forest protection and management, but also in sharing of usufructs.

Forestry Institutions

Forestry and wildlife are in the concurrent list of the Indian Constitution. The basic policy guidelines are formulated by the Union Government through the Ministry of Environment and Forests. The responsibility of administering the forests is primarily vested with the State Governments, whose specialized agencies are the State Forest Departments.

Prior to August 1992, the country's forestry programs were overseen by the Forestry Division and the National Wastelands Development Board (NWDB), both under the Ministry of Environment and Forests. Consequent to the formation of a Department of Wastelands Development in the Ministry of Rural Development, and the transfer of the National Wastelands Development Board (NWDB) to that Department, a new Board called the National Afforestation and Eco-development Board (NAEB) was set up in the Ministry of Environment and Forests in August, 1992. The NAEB, under the Chairmanship of the Union Minister for Environment and Forests, is responsible for promoting afforestation, tree planting, ecological restoration and eco-development activities with special attention to the regeneration of degraded forest areas and lands adjoining forest areas, national parks, sanctuaries and other protected areas.

Forestry Research

India has a long history of forestry research. The first issue of the *Indian Forester*, a monthly journal devoted to forestry and research, was published in 1875. Laboratory research started in 1878 and a National Forest Institute was established in 1906.

In 1986, the Indian Council of Forestry Research and Education (ICFRE) was established. ICFRE is a national council that promotes and funds research through different agencies. Six research institutes and two research centers are currently under the umbrella of ICFRE. Specific research programs have been assigned to these institutes, which are listed below:

- Forest Research Institute, Dehradun
- Institute of Forest Genetics and Tree Breeding, Coimbatore

- Institute of Wood Science and Technology, Bangalore
- Institute of Deciduous Forest Research, Jabalpur
- Institute of Rain and Moist Deciduous Forest Research, Jorhat
- Arid Forestry Research Institute, Jodhpur
- Conifers Research Center, Shimla
- Advanced Center for Forest Productivity, Ranchi

In June 1991, ICFRE was made an autonomous body of the Ministry of Environment and Forests to allow it to function more effectively.

Many State Agricultural Universities also carry out forestry related research, and the Indian Council of Agricultural Research (ICAR) also promotes research in agroforestry through its institutes/centers. The Indian Plywood Industry Research and Training Institute, Bangalore, is carrying out research on timber products.

The Indian Institute of Forest Management (IIFM), Bhopal is a post graduate training institute and is planning to start research on environmental forestry, with particular emphasis on natural forest management.

Forestry Education and Training

Forestry education in India has two branches. The first gives professional training for those who will make it their career; the second is the academic education in the universities, leading to a formal degree.

The Indira Gandhi National Forest Academy (IGNFA), in Dehradun, trains Indian Forest Service Officers. The State Forest Service Colleges at Dehradun, Coimbatore and Burnihat

are responsible for training State Forest Service Officers. There are six colleges for training Range Forest Officers and a large number of Foresters and Forest Guards' Schools in different parts of the country, imparting training to Deputy Rangers, Foresters, Forest Guards and others.

To broaden the base of forestry education, a number of agricultural and other universities have started graduate and post graduate courses in forestry. Since 1989, ICFRE provided financial support to these universities to strengthen their forestry faculties. Curricula have been updated and reoriented to keep pace with the emerging trends in forestry development.

Economic Contribution of Forestry

Although the percentage contribution from the forestry sector to GDP is negligible, it should be remembered that its contribution is based on recorded removals from the forests. Unrecorded removals, especially of fuelwood, fodder and non-wood forest products, are very high. It is conservatively estimated that the value of total removals from India's forests is of the order of US\$ 10 billion per year.

Employment generated in the forestry sector is estimated at about 250 million working days per year under various development schemes in forest areas and other Government lands; about 75 million working days are generated annually under agroforestry and farm forestry programs. Non-plan activities (e.g. protection, maintenance and harvesting of forests) are estimated to generate about 100 million working days. The overall employment generated in the forestry sector is even more when the considerable employment of the rural poor and tribal people and the processing of forest products, in the organized and unorganized sector are included.

Forestry Investment

Forestry investment is made through various schemes in the Central and State sectors

(Table 2). It is difficult to identify one scheme with one objective since in most cases a number of objectives such as natural regeneration, production, social forestry, cultural operations, protection etc. are included in the same scheme. However, judging by the pattern of investments made in past Plan periods, forestry investments can be broadly classified into the following components:

Social Forestry	50%
Production Forestry	15%
Protection and Conservation	20%
Environmental Forestry (including Wildlife Conservation)	10%
Research, Education & Training	5%
Total	100%

Table 2
Estimates of forestry funding
by sector
(Million US \$)

Fiscal Year	Total Funding	State Funding	Central Funding
1980-81	32.08	28.55	3.53
1981-82	39.66	36.19	3.47
1982-83	49.76	43.74	6.02
1983-84	65.45	57.90	7.55
1984-85	83.00	70.75	12.25
1985-86	94.89	80.37	14.52
1986-87	113.43	92.20	21.23
1987-88	129.64	106.68	22.96
1988-89	148.98	120.95	28.03
1989-90	171.70	139.78	31.92
1990-91	192.14	152.08	40.06
1991-92	238.44	180.76	57.68

Implementation of the National Forestry Action Plan

Under the 1988 National Forest Policy, it is necessary to reorient all the on-going forestry practices and programs to meet the objectives. An

integrated perspective program for the long and midterm development of the forestry sector at the National and State levels, and a short-term priority action program for the next five years are being prepared under the project "National Forestry Action Plan" as a part of the global Tropical Forests Action Program with assistance from UNDP and FAO.

All forested States have prepared sector review documents for the first countrywide study ever attempted. The exercise has been completed and a wealth of information has been generated. A strategy paper will be prepared for consideration by the steering committee and thereafter preparation of State Forestry Action Plans will start.

Studies are also being undertaken on ecosystem management, rural sociology, land use, silviculture and management, wood substitution, agroforestry, data base management, resource assessment, industry, extension, markets, desertification, seed technology, and non-wood forest products. Other areas may be considered as work progresses. The data generated in the studies will be put into an interactive computer format, which will form the basis for a national data base. Ultimately, it should be possible to put all the data from forest management plans in this format with the help of the National Informatics Centre of the planning commission, which has a network connecting all the districts of the country. The Forest Survey of India is acquiring GIS capabilities and should be able to assist the States in developing GIS applications.

After the State Forestry Action Plans and the results of the studies have been reviewed, a draft National Forestry Action Plan will be prepared for consideration by the steering committee. It is proposed to have a wide-ranging debate on the draft in regional workshops, followed by a national workshop.

Indonesia

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Minister of Forestry*

Background

Indonesia's forested land totals nearly 119 million hectares or 62.3 percent of the total land area. In 1993 the foreign exchange earnings generated from the forestry sector were US\$5.47 billion. In addition, substantial employment, and social and cultural benefits are derived from forestry. The forestry sector is indeed vital to the national economy. Indonesia is therefore strongly committed to implementation of the Forest Principles and Agenda 21, especially Chapter 11 (Combating Deforestation).

Forest Resources and Biodiversity

In the early 1980s, prior to the introduction of the National Land Use Plan, the forest resources useage was determined by the Forest Land Use by Consensus (TGHK). In 1992, Indonesia adopted Act No. 24 of 1992 concerning General Planning on National Land Use. This act provides a mechanism for effective inter-sectoral cooperation and consensus regarding disputed forest areas under the existing Forest Land Use by Consensus. With the new regulation, the legal status of forest areas has been further harmonized and strengthened.

Indonesia has finalized a thorough inventory of its permanent forested estate through the use of satellite imagery covering an area of 167.9 million hectares. A terrestrial inventory has been completed for 107 million hectares and forest boundary establishment has been carried out for 181,766 kilometers. To improve the monitoring of production forests, aerial photographs have been made available for over 70 million hectares of forest at an annual cost of US\$2 million.

Forest Plantations

To improve land productivity, Indonesia is developing industrial plantation forests (especially on degraded and unproductive lands), rehabilitating its watersheds through greening programs, and promoting the establishment of private forests. Therefore, Indonesia has established over 3 million hectares of industrial forest plantation, and has targeted another 1.25 million hectares of new plantation forests for the period of 1994-1999. The intention is to maintain timber production from private forests at an annual level of 8 million cubic meters.

The plantation forests play an important role in the promotion of national conservation efforts. High yield and superior local species plantations could meet higher wood demand while maintaining and reducing the area of natural forest harvested. This program also provides employment for rural people and decreases local people's reliance on natural forests.

Forest Production

With 64 million hectares of public production forests, Indonesia's annual timber (log) production in the last six years has remained relatively stable, yielding on the order of 22 to 27 million cubic meters per year. The timber production target for the 1994/1995 period has been a conservative 22.5 million cubic meters per year, excluding timber coming from the private forests.

Forest sustainability

To further promote forest sustainability, in April 1993, the Minister of Forestry issued the Criteria and Indicators of Natural Production Forest

Sustainability on the National Level Decree (No.252/Kpts-II/1993). The Director General for Forest Utilization, then issued the Technical Guidance on Criteria and Indicators for Management Unit (concessionaire) Levels (Decree No..208/Kpts/IV-Set/1993). The basic structure of these decrees was derived from the ITTO criteria and indicators.

In recent years, it has also been the policy of the Ministry of Forestry to assume responsibility for the management of those concessionaires which were not conforming with regulations. This has been possible by establishing new joint ventures between the former forest concessionaires and public forestry enterprises. The management of the joint concession is regulated by, among others, the Minister of Forestry's decree. Thus far, 23 joint venture concessions "patungan" have been created.

In spite of some success in improving the management of its forests, Indonesia recognizes the challenging tasks which need special priority during the current Five Year Plan Period (1994-1999). They are:

- Enhancement of natural forest quality through rehabilitation and resource security;
- More efficient forest product utilization through better industrial processing and better harvesting systems;
- Improved land productivity through the development of industrial plantation forests (HTI) and promotion of private forests;
- Enhancement of the private sector to better manage natural forests using appropriate silvicultural systems and appropriate economic incentives;
- Promotion of trade in forest products which are produced through sustainably managed forests;

- Broader use of forestry to alleviate poverty and enhance the welfare of local people residing in the vicinity of the forests; and,
- Increased awareness and capability of local governments to conserve and manage forests as an economic resource and to provide environmental services.

Socio-economic benefits and sustainability

In an effort to promote local government capacity and involvement in managing forestry, the government, in 1994, decided to decentralize some forestry activities by establishing the Forestry and Soil Conservation Service at the district level. This District Forestry Service is also seeking solutions to the socio-economic conditions of the local people.

In line with the country's policy to increase the earnings from non-oil exports, Indonesia tried to move away from exporting unfinished hardwoods toward the export of finished products. This policy is also intended to increase job opportunities. Because of this policy, Indonesia has developed 1,973 saw mills, 115 plywood mills, 114 block board mills, 80 particle board mills, 19 chip mills, 3 pulp mills, 2 MDF mills, and over 600 various secondary wood processing mills.

Indonesia's forestry sector has provided benefits at both national and local levels. Most forestry activities have positive impacts on local and regional development through multiplier effects. Revenue gained through forest utilization leases has escalated through regular adjustment of royalties. Funds secured from forest resources are used primarily for forest management improvement and for local regional development.

People's participation in forestry has been a major development objective in Indonesia. Various programs for local community involvement

have been successfully implemented. Agroforestry and social forestry have been practiced for over 100 years in the teak growing areas of Java. To increase the contribution of the concessionaires to the local economy, the government has launched various programs such as the Village Development Scheme ("HPH Bina Desa"). As of August 1994, more than 511 villages have participated in this scheme. Forestry will continue to be an important sector in the foreseeable future. By the year 2000, the forestry sector is expected to provide some 6 to 8 million jobs.

Biodiversity

In order to conserve biodiversity, Indonesia has set aside almost 25 percent of its land area or 49.6 million hectares, as "totally protected areas" (TPA). They consist of protected forests (30.8 million hectares) and conservation areas (18.8 million hectares) including national parks, game reserves, nature reserves, and grand forest parks.

In October 1994, in cooperation with the Government of Malaysia and the ITTO, Indonesia launched a joint conservation project, the Transfrontier Reserve Bentuang-Karimun and Lanjak-Entimau, located in Kalimantan. This transboundary conservation area covers over one million hectares of virgin tropical forest.

Follow up to UNCED

After the UNCED Summit Meeting, in July 1992, the Ministry of Forestry convened all high ranking forestry officials to introduce the UNCED outcomes and to evaluate the state of forestry management in Indonesia relative to the Forest Principles and Agenda 21. The meeting concluded that Indonesia's forest management was principally in line with the Forest Principles and Agenda 21, but that further forest management improvement and fine tuning were needed. Since then, Indonesia has been intensifying its forest management efforts through law enforcement, standardization of the inventory and land

use planning, improvement of silvicultural systems, information dissemination, and training.

Under its Tropical Forestry Action Programme, Indonesia has institutionalized donor coordination through a fora called the Coordinating Group on Indonesian Forestry (CGIF). Presently, Indonesia is implementing 60 international forestry projects at a cost of about US\$260 million.

As a follow-up to the UNCED outcomes, Indonesia conducted the Global Forest Conference, held in Bandung, in February 1993. The result of this Conference, the "Bandung Initiative", identified the following measures as being imperative: strengthening national capacity in the area of forest management, increasing the area of forest, promoting the active participation of all sectors of society in forest development through education, and mobilizing scientific research to resolve problems of forest sustainably. The Bandung Initiative also emphasized the importance of global partnerships to solve global forestry problems.

Realizing the importance of science for sustainable forestry, the Government of Indonesia, in cooperation with the Centre for International Forestry Research (CIFOR) conducted a "Policy Dialogue on Science, Forests and Sustainability" in December 1994, in Bali. This dialogue stressed the significance of forest science and research in attaining sustainable forestry and identified research field priorities.

Conclusion

Indonesia strongly endorses the idea of global partnerships, including South-South cooperation, and the importance of promoting forestry research and technology and science for solving forestry problems. This idea should be given high priority by the FAO Ministerial Meeting, in Rome, in March 1995 and eventually to the Commission on Sustainable Development Meeting in New York, in April 1995.

Japan

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Background

Recognizing the multi-functional nature of forests, continuous improvement of forest management has been one of the priority areas of forest policy in Japan. A clear example of this is the establishment of the "Forest Management System Based on River Basins". It covers national and private forest management and ensures conservation and sustainable use of forests, while simultaneously protecting each river basin.

Japan has also made great efforts to conserve biodiversity and outstanding natural scenery. Similar efforts are made to promote the proper utilization of its forests for recreation.

Furthermore, Japan promotes the effective use of timber and encourages paper recycling. Attention is being given to the construction of more durable wooden houses.

Being aware of the rapid depletion and deterioration of forests on a global scale, Japan has increasingly contributed to the sustainable management of forests throughout the world. Making the most of its accumulated expertise obtained through the management of forests and national parks, Japan has actively intensified and expanded its international cooperation activities.

The Influence of UNCED

Japan had already launched several important measures, partly in advance of UNCED 1992, anticipating the fundamental idea of sustainable development in the forest sector.

The following are the some of those measures listed in Japan's report to the Commission on Sustainable Development.

Overall Aspects of Sustainable Development

A "Forest Reserve System" for the national forests was reformed and reinforced in 1989. Consequently, newly categorized forest reserves have been designated. These are: Forest Ecosystem Reserves (for the conservation of the whole forest ecosystem), Forestry Woods Genetic Resource Reserves (for the conservation of forest species), and Forest Organisms Genetic Resource Reserves (for the conservation of genetics).

Economic Development

A "Forestry Structure Improvement Programme for the Vitalization of Rural Communities" has been working since 1990. Infrastructure for forestry activities and living conditions of rural communities have been improved under this Programme.

Social Aspects of Forests

A new fund called the "National Fund for Greenery and Waters" was established in 1988 to promote public awareness and support research activities related to forest management. The total amount of 20 billion yen will have accumulated in the seven year period ending in 1995. Various projects have already been sponsored by the Fund.

Institutional Strengthening and Capacity Building

The Forest Law, originally formulated in 1898, was revised in 1991. The purpose of the revision was to promote the management and conservation of various types of forests, and to improve the production and distribution process of forest products. Under the Forest Law, several measures, including the "Forest Planning Systems", were improved so as to put the concept of "Forest Management System Based on River Basins" into practice.

International and Regional Cooperation

Japan has actively participated in, and contributed to, various international forestry initiatives. Such initiatives include the "Working Group on Criteria and Indicators for Conservation and Sustainable Management of Temperate and Boreal Forests" (Montreal Process), "Intergovernmental Working Group on Forests" (Canada-Malaysia Initiative) and "Workshop Towards Sustainable Forestry: Preparing for Commission on Sustainable Development 1995" (Indo-British Initiative).

Japan has also conducted overseas research activities, making use of its experience and expertise obtained through the national parks

management and wildlife protection. Examples of such activities include :

- research for the development of nature conservation for developing countries carried out from 1990 to 1993;
- basic surveys on environmental conservation in the tropics carried out from 1991 to 1993; and
- research on the development of methods to examine the state of environmental resources in Asia-Pacific Region.

Furthermore, Japan has carried out various bilateral technical and financial cooperation projects through the "Japan International Cooperation Agency" (JICA) and the "Overseas Economic Cooperation Fund" (OECF). Japan has also made contributions to international organizations, such as FAO and ITTO, supporting their cooperation with developing countries in the forest sector.

Conclusion

Japan will continue to make its best efforts to improve its own forest management so as to meet the wide variety of needs of both today's and tomorrow's generations.

Republic of Korea

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International Cooperation Division

Background

Korea has a forest cover of 6.45 million hectares, or 65 percent of the total land area. Due to the relatively large population, there has been increased conversion of forest lands for other uses, including housing, industrial sites, roads, and croplands. In the past decade, about 9,000 hectares of forest lands a year have been converted for other uses. Recently, the rate of forest conversion slowed due to the decline of the population growth, abandonment of some croplands, and strict restrictions against forest land conversion.

Forests in Korea are mostly located in mountainous regions. Therefore management practices difficult to apply.

To improve forest productivity, the Korean Government has established the National Forest Plan, in the spirit of UNCED. The objective of this forest policy is to change from an orientation of forest use mainly for economic development to one of harmony between development and conservation.

Sustainable Forest Management

To increase the economic value of forests and improve the structure for sustainable production, commercial forests with poor quality species are being replaced by quality species. Management practices have been adopted to monitor and develop water resources, land conservation, aesthetic beauty, biodiversity conservation, and recreational areas.

The increase of national forest lands and the enhancement of management systems have

been very important in maintaining and improving environmental standards and welfare benefits. The current five-year forest plan proposes to increase the national forest lands from the current 21 percent of total forests up to 40 percent. To accomplish this, national forests would be exchanged with public and private forests, or private forests would be purchased by the government.

To improve the utilization and value of small diameter timber, research has been carried out to expand its use and create new demand. In addition, timber utilization is being improved by enhancing the pattern of timber consumption and increasing recycling.

Protection and Conservation

To protect the forests, denuded forest land will be rehabilitated, erosion control measures will be taken in susceptible areas, and precautionary actions will be applied in rehabilitated areas to prevent reoccurrence of land degradation.

To control forest fires, early warning systems have been established. The fire lookout system has been improved, and special attention paid to improving the Forest Aviation Office's management and logistics. Early warning systems are also being improved to detect and control pests and diseases. The use of pesticides with low toxicity and natural enemies is encouraged as much as possible to conserve the natural ecosystems.

To check the loss of forests, methods of assessing the impact of forest conversion are being developed and utilized as criteria for forest land conversions. In addition, institutional instruments will be established to induce affor-

estation in marginal and abandoned croplands. Research on quantification and value assessment of forest benefits will be strengthened to reflect the forest's environmental value, so as to clearly define policies.

Improvement of Related Institutions

Forest-related legislation is being revised, so as to maintain the harmony between development and forest protection, conservation, and sustainable management.

Financial incentives and tax benefits will be introduced:

- to increase productivity and to improve the public benefits from private forests through sustainable forest management;
- to strengthen and develop related research; and
- to encourage joint research programs for closer cooperation among industry, university, and research institutes

National Coordination

In 1992, the Ministerial Committee on Global Environment was established. Under the Ministerial Committee, a Task Force was established

to coordinate specific action plans in relevant sectors as recommended by Agenda 21.

In early 1994, a working group was organized involving members from the Forestry Administration and the Forestry Research Institute.

International Cooperation

Contributing to global environment conservation, the government actively participates in discussions of criteria and indicators for sustainable forest management, and in other meetings, related to the International Convention to Combat Desertification, and the Convention on Biological Diversity.

Foreign timber purchasing in the future will depend more on overseas plantation programs rather than blindly buying from foreign sources.

The experiences and techniques that Korea has accumulated in successful land rehabilitation programs can be shared with developing countries to contribute to global environmental conservation. For this purpose, experts in these subjects may be dispatched to relevant countries. Through strengthened bilateral and multilateral cooperation, exchange of forest-related knowledge and information will enlarge each country's understanding of how to achieve sustainable forest management.

Lao People's Democratic Republic

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Background

Laos has abundant natural resources, including forests covering a variety of ecosystems. Since the initiation of New Economic Mechanism (NEM) in 1986, which encouraged private ownership and foreign investment, the average economic growth rate has been approximately 5 percent per year. However, the social-economic conditions remain largely underdeveloped especially in the areas of education, public health, transportation and communication. The population growth rate remains high (2.9 percent), but economic production is still at subsistence levels with an average per capita income of US\$350.

Agricultural and forest products constitute a major portion of the GNP. This factor alone has been a major cause of the existing environmental problems. More than one third of the population still relies on swidden agriculture as a means of food production. The area under shifting cultivation each year varies from 250,000 to 300,000 hectares depending largely on the success or failure of the previous year's production.

In formulating economic policy, the Lao government has not neglected environmental protection. In this regard the Lao People's Democratic Republic constitution states the following:

"All organizations and citizens must protect the environment and natural resources, land, underground resources, forests, fauna, water resources and atmosphere."

Progress and issues in implementing Agenda 21 and the Forest Principles

The central purpose of economic development in Laos is to improve the quality of life for the country's population. Therefore, socio-economic development programs have been aimed at combating general and rural poverty, and improving health conditions. These objectives could not be achieved without formulating comprehensive programs including the support of a number of agencies at local, national and international levels.

Approximately 80 percent of the Lao people live in rural areas. Due to poverty, many local communities are forced to encroach upon forested areas to cultivate rice and other crops. Fully aware of the dangers posed by rural poverty, the state introduced economic reforms in 1986, which have been successfully employed in all sectors of the economy under the New Economic Mechanism. Basic infrastructure construction has been the predominant focus of development programs. In addition to economic development, the government has given high priority to human resources development.

Forest Resources and Biodiversity

In the early 1940's the forest cover was estimated to be 70 percent of the total land area. Now the remaining forests occupy only 47 percent of the national area. Although a comprehensive study has not been carried out, it is obvious the main causes of deforestation are shifting cultivation, unsustainable and illegal logging, and forest fires.

Forestry production

In 1991 the National Forest Action Plan (NFAP) (officially known as Prime Minister Decree No. 66), was introduced and all inefficient state-run forest enterprises were transferred to other forms of ownership. The government encouraged the private sector to undertake entire spectrum of forest industry activities. This includes reforestation, tree harvesting, timber processing and marketing of lumber products. Moreover, all business ventures are to simultaneously include tree planting to ensure future timber supplies. Emphasis must also be given to rural development. In further support of these initiatives, government policy promotes timber processing domestically by restricting log exports. Furthermore, Prime Minister Decree No. 67 placed a temporary ban on timber harvesting.

Forest preservation

In an effort to shift from employing only administrative measures to tackle the problem of deforestation the Lao government has taken a more participatory approach. Local communities are granted the right to manage the forests for their own interests, however, local communities must comply with the regulatory framework. In 1993, the New Decree on Forest Management and Civilization was promulgated addressing all aspects of the forestry sector and recognizing the customary rights of the villagers.

Forest plantations

The Lao government has continuously encouraged reforestation and to this end has declared June 1 as National Tree Planting Day. Under the old economic management mechanism, the campaign for tree planting had not been successful. Following the 1986 open door policy, there has been noticeable progress in this area.

In October 1994, the most recent decree addressing forestry promotion was promulgated, offering attractive incentives to local communities for reforestation. A farmer who now plants more than 1,100 trees per hectare is not required to pay a land use tax. If the farmer cuts down trees, he is still exempt from taxation providing the tree he has cut down is for his own use.

Biodiversity

Laos has a rich biodiversity, although many habitats have been lost due to environmental destruction. Decree No. 184/PM addresses this issue through the creation of 18 protected areas encompassing approximately 2.5 million hectares, representing more than 10 percent of the total land area.

Watershed management

The Mekong river and its tributaries play a very important role in the national economy. Therefore, the conservation of watersheds is essential. Donor countries as well as international aid organizations, including NGOs, are assisting the Lao government to study and understand the problems of watershed degradation.

Agricultural development

Agriculture is the largest sector of the economy. Major projects and results have been accomplished primarily around the urban areas. However, agricultural systems in rural and remote areas remain at subsistence levels.

Shifting cultivation and alternative livelihood

More than 1.5 million people continue to practice swidden agriculture with significant detri-

mental impact on the environment. Therefore, the two-pronged focus of the government agricultural program is food production and the stabilization of areas vulnerable to shifting cultivation. According to government plans, the number of families using swidden agriculture should be reduced to 100,000 by the year 2000. During 1995, a target population of 30,000 will be shifted to other modes of production such as animal husbandry, coffee and other cash crops.

Hydro electricity production

Future consideration of hydro-electric power plants will take into account not only economic aspects, but also assess environmental and social impacts.

International cooperation

In accordance with the 1990 Tropical Forestry Action Plan (TFAP), international assistance has

been provided from a variety of donors including SIDA, Mekong Committee Secretariat, FAO, ADB, World Bank, GTZ, IDRC, JICA, IUCN, CUSO, JVC, ACIAR, NOVIB. The total amount of assistance is still far less than needed levels, however, other donors have expressed their intention to take part in the implementation of the TFAP. For that purpose, the Ministry of Agriculture, and Forestry planned another donors meeting in March of 1995.

Conclusion

Since the introduction of economic reforms, progress has been achieved in many areas of society. The general living standard of the population has been achieved in many areas of society. The general living standard of the population has been raised and the basic structure of all economic sectors has been expanded. The private sector and foreign investors are participating in development projects including forestry and agriculture, reflecting the commitment of the Lao Government to combat general poverty and to find alternatives for shifting cultivators.

Nepal

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Background

Nepal, extending 800 kilometers east to west along the central Himalayas, contains dramatic physiographic and climatic contrasts considering its small area of 147,181 square kilometers. About two-thirds of the country is occupied by hills and mountains. Nepal's current population, estimated to be 19 million and growing at slightly over 2 percent per year, is expected to reach 24 million by 2000. Over 90 percent of the population relies on agriculture for its livelihood. Thirty-seven percent of the country's area is under forest cover while that under agriculture is about 20 percent.

The country's economy depends largely on the use of its natural resource base. Lack of economic opportunities and infrastructure has hampered economic growth. The problems have been further exacerbated by the growing poverty and environmental deterioration which is accelerated due to excessive dependence on the use of natural resources.

Seventy-five percent of the country's energy requirements are met through fuelwood. Deforestation in Nepal is primarily due to the extraction of fuelwood, fodder and timber, over grazing, frequent fires, encroachment on forest land for agricultural expansion, and poaching and smuggling. The current tree plantation rate is unable to offset the deforestation rate. As forests are not evenly distributed in relation to the population, all accessible forests are over-used and depleted.

Management, Conservation and Sustainable Development of Forests

A 21-year Master Plan for the Forestry Sector, implemented since 1989, concentrates on:

- community and private forestry
- national and leasehold forestry
- soil conservation and watershed management
- conservation of the ecosystem and genetic resources
- medicinal and aromatic plant development

A National Conservation Strategy for Nepal, endorsed by the Government in 1988, outlines a conservation action agenda to facilitate the integration of conservation prescriptions into the socio-economic development plans and programs.

The objectives of the current Eighth Five-Year Plan (1992-97) include the following:

- sustainable economic development
- poverty alleviation
- rural development and regional balance.

To achieve these objectives, priority programs include:

- agricultural intensification and diversification
- energy development
- rural infrastructure development
- employment generation and human resources development

- industrial development and tourism promotion
- export promotion and diversification
- macro-economic stabilization
- reforming development administration
- institutionalization of performance monitoring and evaluation system

The Nepal Environmental Policy and Action Plan, prepared in 1993, aiming to maintain a balance between economic development and environment, has focused on program priorities in the field of: sustainable management of natural resources; preservation of national heritage including biological resources; mitigation of adverse environmental impacts by amending existing legislation; institutional reform; and, public awareness programs.

The National Environmental Impact Assessment (EIA) guidelines for Nepal, endorsed in 1992, mandates the identification, prediction, and evaluation of all potential environmental impacts and assessment of mitigation measures for the conservation of environment and biodiversity in all major development projects and programs.

The 1993 New Forest Act, ensures the conservation, management and sustainable use of forests and forestry resources with the extended cooperation of the private sector. The 1973 National Parks and Wildlife Conservation Act, (amended in June 1993) has a provision for declaring buffer zones to ensure the regular supply of forest products to the local people. The 1982 Soil Conservation and Watershed Management Act, has provisions to regulate land-use practices in protected areas in order to best utilize the watershed resources in reducing soil erosion, landslides, floods and other environmental problems.

Promotion of Sustainable Patterns of Production and Consumption of Goods and Services from Forests

Community forests will be managed and utilized on a sustainable basis through user groups mobilized as autonomous bodies.

In the national parks and wildlife reserves, to solve the conflicts between the parks and local people, local communities will be mobilized for the sustainable development and management of buffer zones. Sharing of 30 to 50 percent of the revenue generated from the parks is being provided for community development activities as an incentive.

Soil conservation and watershed management programs launched in 40 districts have helped minimize soil loss and increase soil productivity. Endangered species have been identified and their trade and exploitation restricted under CITES. In the continuous and arduous efforts to protect the one-horned rhinoceros, its population has increased from 60 to 80 in the late 1960s to 460 in 1994, an annual rate of increase of 3.7 percent.

Pressure on traditional energy sources, primarily fuelwood, will be reduced by developing fuelwood saving devices. Of particular focus will be improved cook-stoves and bio-gas plants.

Social Aspects of Forests

Local community participation in managing the existing natural forest has been given high priority. Under current policies, local people can fulfil their demands for fuel, fodder and small timber. They can also allocate some revenue generated by managing the forest to other necessary local developments such as primary health, education, irrigation, etc. The program of leasehold forestry has been launched in order

to uplift the living conditions of the absolute poor. Nepali women have been encouraged to participate in managing the natural forest and afforestation programs. Some of the forest user's committees are composed exclusively of women.

Various forestry development programs - afforestation, soil conservation and watershed management, pasture development, agroforestry, national parks and reserves - have provided considerable employment opportunities and income generation to the local people.

Tourism potential is increasing with the establishment of the national parks and wildlife reserves. Environmental measures have been provided to maintain the ecological conditions.

Institutional Strengthening and Capacity Building

An interministerial Environmental Protection Council was constituted under the chairmanship of the Prime Minister in 1992 as a policy coordination body. The council is charged with managing natural and physical resources, maintaining balance between environment and development to meet basic needs in a sustainable manner, and supporting sustainable development.

The 1994 institutional reform of almost all government institutions has made the policy making bodies smaller, more focused and involved at the implementation stage. This will in turn help the government to deliver services to needy people in more efficient and effective ways.

Furthermore, the decentralization of administrative powers and tasks has created a development-cadre for decision making and implementation of the plans and programs. A number of non-governmental organizations, established after the reinstatement of democracy in 1990, are developing conservation packages to ensure equitable sharing of forest benefits.

Forestry research was completely reorganized in July 1993 with the formation of the Forest Research and Survey Center, once again combining the responsibility for research and survey within the Ministry of Forests and Soil Conservation. Planning capacity has been enhanced by exposing central, regional and district-level officers to the latest planning tools. Training on community forest management has been assigned to different categories of field staff.

Forest user groups have been organized in the villages and operational plans have been prepared with their consent and contribution. National forest areas have been handed over to local user groups. Responsibility for managing and utilizing the forests has been given to them.

International and Regional Cooperation and Support

Nepal is an active member in regional and international cooperation and support programs and is a signatory to a number of international conventions. Many forestry development programs have been launched with the technical and financial assistance of bilateral and multinational donor agencies such as UNDP, UNEP, FAO, USAID, ODA, JICA, SIDA, DANIDA, WB, CIDA, AIDAB, SDC, GTZ, etc. Implementation of the Forest Principles and other forestry related issues of Agenda 21 and various conventions of the Earth summit have been initiated.

Forestry Elements Relating to Other Chapters and Conventions

Past initiatives in managing fragile ecosystems and sustainable mountain development (Chapter 13 of Agenda 21) have been further expanded. The program of action emphasizes soil conservation and watershed management and sustainable use of biological resources.

To implement the Convention on Biological Diversity, four biodiversity conservation projects are being launched. They focus on the conservation and sustainable use of the wild flora and fauna.

One component of a 5-year GEF-funded biodiversity conservation project is to develop and implement a National Biodiversity Action Plan (BAP). A Dutch-funded biodiversity project has been launched to assess the present state of biological diversity in Nepal. In addition, a

WWF-funded biodiversity conservation program is providing assistance to implement conservation-oriented development activities in two national parks.

The 3-year Park-People Project funded by UNDP will be instrumental in conserving biological resources at a sustainable level in two national parks and three wildlife reserves and their buffer zones. The 1993 Forest Act ensures the conservation, management and sustainable use of forests and forest resources with the extended cooperation of the private sector.

Papua New Guinea

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Background

In recent years, the forestry sector in Papua New Guinea has gone through a major transformation. The Commission of Inquiry, which was set up by the Government in 1988 to look into the various aspects of the Forest and Forest Industry, has been the reason behind the change. The Commission revealed serious malpractices and irregularities and recommended swift changes to correct these practices. It also advised the Government to review policies and draft legislation to control the timber industry. Consequently, the Government with the help of the World Bank undertook the drafting of policy and legislation to properly manage forest resources and monitor the timber industry. Along with the new policy and legislation, the National Forest Service was established.

In early October 1993, all staff previously employed by the Department of Forests, Provincial Forest Departments and Forest Industries Council were united to form the National Forest Service.

Forest Policy (1991)

The fourth goal of Papua New Guinea's constitution, states:

"our forest resources must be used for the collective benefit of us all and be replenished for future generations."

With this goal in mind and the belief that forest resources are renewal natural assets if used and managed wisely, the 1991 Forest Policy

was developed with two major policy objectives.

Objective # 1: Management and protection of the nations forest resources as a renewable natural asset

Under this objective, the following actions are pursued:

- Enforcement of sustained yield forest management.
- National and Provincial consultation for the orderly harvesting of the forest, through the development of National and Provincial Forest Plans (NFP, PFP). *Present status:* scheduled to begin in 1994 but delayed until 1995 and 1996 due to financial constraints.
- Plantation establishment to complement the use of natural forests on a sustainable basis. Timber companies, and landowners will be encouraged to participate in plantation programs. *Present status:* A study was carried out and sites have been identified, but there is no funds support the establishment of these plantations.
- Development of Forest Management Agreements (FMAs) to replace Timber Rights Purchase Agreements (TRPs), for granting rights to manage, harvest and plant timber and to establish infrastructure (e.g., roads and bridges). Under FMAs, landowners have increased decision making authority and participatory roles in the utilization of their forests. *Present status:* Initial FMAs have already been granted. However, more funding will be needed for FMAs to be established throughout the whole country.

- Conservation and protection of forest areas through the establishment of Conservation/World Heritage Areas. *Present status:* Areas have been identified, but there is a need for further planning of the preservation of these areas as they are owned by landowners who retain the right to conserve or develop their land.
- Control of logging operations to minimize environmental damage. Two options are being pursued:

(i) silvicultural knowledge is being broadened to minimize the environmental damage;

(ii) landowners are being given the responsibility to control all logging activities.

The latter option requires training of landowners.

Objective # 2: Utilization of the forest resource for economic growth, employment creation, greater Papua New Guinea participation in the forest industry and increased viable domestic processing:

This objective will be achieved through the following activities:

- Relying less on log exports for revenues and by increasing domestic processing to provide value-added and other "spin-off" effects. *Present status:* A study has been completed by ITTO and strategies are now being formulated to reduce log exports and increase domestic processing.
- From negotiation of contracts for the processing forest products. There is no automatic "right" for operators to export logs
- Restricting exports of forest products. The export of certain premium timbers in log and flitch forms has been banned.
- Restricting imports of forest products. Incentives will be provided to encourage greater use of locally made wooden products such as furniture.
- Encouraging the creation of employment and local participation, nationals will be actively involved at all levels of the forest industry. National companies, especially landowner-based companies, will be encouraged to be involved in the forestry sector. *Present status:* This is to be organised through FMAs.
- Promoting small-scale, forest-based industries (e.g., the use of "Wokabout Somils"). An advisory service will be provided to assist small scale operators. *Present status:* This service is scheduled for 1995.
- Allocating all royalties from the timber harvest to the landowners. This will be a faster and improved system of royalty distribution.
- Providing support and guidance to community forestry, (e.g., village woodlots and agro forestry projects). *Present status:* Scheduled to begin in 1995.
- Welcoming foreign investment, especially capital-intensive higher technology projects.

Post 1992 Forest Policy Achievements

There has been gradual progress in the implementation of projects that were forthcoming due to the Forest Policy change. Two of the constraints the PNG Government encountered

were related to finance and manpower. Thus the World Bank made contributions through the National Forest and Conservation Action Program (NFCAP) to support the Forest Policy 1991.

Some of the major programs are listed below in order of priority:

- (1) Rapid resource appraisal (RRA) and re-inventory of resources; the RRA is almost complete, with all forest types zoned, the density and volumes have been collected for each forest category and mapped with assistance from AIDAB, CSIRO and the World Bank.
- (2) A new resource management structure including a National Forestry Board, specialized Standing Committees, a new Forest Service and a new financial framework has been set up.
- (3) Maximizing returns from logging with a comprehensive review of royalties, export taxes and other revenues from log exports. Marketing firms will be consulted to improve sales and revenues.
- (4) Industrial development prospecting with a review of the log export ban and feasibility studies for sawmill/board plants, wood chipping and pulp mills. *Present status:* This study has been carried out by ITTO and strategies are presently being formulated.
- (5) Conservation and land use planning including a World Heritage site proposal, a national conservation strategy, rehabilitation of the existing national parks, improved ecological and monitoring programs, training of local people, support to NGO activities, and a feasibility study for establishing a land use research council.
- (6) Institutional and human resource development. *Present status:* A study has been carried out and strategies will be formulated in the near future.

The major policy changes proposed under the new forest program include:

- A 2-year moratorium on logging in new areas;
- Timber right purchases (formally used as a timber right by customary land owners) have been incorporated into the forest management agreement (FMA);
- Increased emphasis on the development of plantation forests and on increasing the country's timber processing capacity; and,
- Involvement of NGOs in policy making and project execution, and their integration as members of the technical support team.

Critical limitations to implementing NFCAP are insufficient qualified manpower in specialist areas and lack of information about the regenerative capacity of the forest resources. Building upon the progress achieved with respect to changes in forest policies and forest organization, the PNG Forest Authority will continue to focus efforts on implementing new policies and identifying external technical assistance and funds for NFCAP programs. Progress will be continually monitored and evaluated.

Follow-up to UNCED

The PNG National Forestry Policy (1991) has adapted all the principles of UNCED. The NFCAP has incorporated a wide range of specific interventions to strike a balance between environment and development.

Since 1992, PNG has been able to reorganize institutional structure and attempts have been made to achieve sustainable forestry development. However, progress has been slower than expected due to fund shortages and structural transition. The National Forest Plan which is

now being undertaken will bring the new policy initiatives into perspective.

The implementation of the National Forest Plan (NFP) and Provincial Forest Plans (PFP) has also been obstructed by the lack of detailed information about the resource base in the country. However, this is being addressed by the NFCAP with the Rapid Resource Appraisal Project that will eventually determine the up-to-date resource information to be incorporated into the plan.

The delay in resource allocation decisions due to the moratorium on the issuance of new logging concessions has been prudent. Future allocations must be based on sound land use planning.

The commitment to manage the forest on a sustainable basis for today and the future is present, with a goal, of achieving full implementation of new policies, by the year 2000.

Prospects and Constraints

While there have been set-backs, overall the Government has demonstrated a genuine commitment to change. It has earned particular

praise for the speedy accomplishment of new forest policy and legislation.

Non-governmental organizations are, for the first time, represented both formally and informally in forestry affairs. Forest industries and the private sector are represented on the Board of the Forest Authority and are increasingly being drawn into the consultative process. A framework has been established for landowners to increase participation in forest sector development.

Environmental consciousness has been strengthened. Papua New Guinea is now recognized as a significant global reservoir of biodiversity and international assistance is sought to help safeguard these resources for future generations.

The PNG National Forest Authority faces many challenges in coordinating the many and varied inputs from the landowners, government departments, NGOs, industry and international conservation organizations to achieve the goal of sustainable forest development. For the first time in many years, Papua New Guinea has major interest groups working together towards a more just and sustainable future of forest resources use and conservation.

Philippines

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Background

Only about 5.78 million hectares, or roughly 19 percent of the total land area of the Philippines, are covered with forests today. To meet the country's wood requirements and the basic needs of the people who are dependent upon the forest resources and forest-based industries, immediate appropriate management directions and strategies have to be initiated.

Operationally the strategies are clear and simple. The remaining forests have to be protected and sustainably managed. These are well articulated in the Philippine Strategy for Sustainable Development and in the Philippine Forestry Master Plan.

Strategy for Sustainable Development

In September 1992, taking into consideration UNCED's Agenda 21, the Philippine Agenda 21 was adopted in a National Conference called "Response to Earth Summit: Implementing the Philippine Agenda 21 for Sustainable Development". The Philippine Council for Sustainable Development (PCSD) was created to provide the mechanism for implementing the principles of Sustainable Development in the country. The PCSD and its various committees and sub-committees are now fully functional and are working hard to fulfill their mandates.

The following have been agreed upon as the priority activities and key elements for the Philippine Agenda:

1. Complete planning of land use and of the allocation system - delineation of forest boundaries and amendment of policies for agricultural lands.

2. Enacting a "Law on Ancestral Land" as well as other land use bills.
3. Promoting people's participation through the "Community's Right to Know" policy and community-based organizations including indigenous groups in forest management activities.
4. Strengthening the capability and participation of local governments in reforestation and forest protection.
5. Focusing on sustainability requirements in logging and other forest utilization.
6. Developing and promoting non-conventional energy resources, particularly to relieve pressure for fuelwood harvesting.
7. Supporting the establishment of industrial tree plantations in the shift towards non-exploitation of natural forest while diversifying tree planting and supporting the use of endemic species to approximate the natural forest.

Master Plan for Forestry Development (MPFD)

In 1990, the Master Plan for Forestry Development was completed. Under this plan, the forestry sector will be directed towards efficient and equitable management, conservation, and utilization of all the forest resources, satisfying in appropriate ways and on a sustainable basis the needs of the people for forest-based commodities and services. Thus, the Philippine Forestry Master Plan has already integrated

most of the principles proclaimed by UNCED in 1992, with the following objectives:

1. To meet the national demand for wood and other forest products by putting all of the country's production forest resources under sustainable management.
2. To contribute to the production of food, water, energy, and other necessary commodities by properly managing the upland watersheds and through effective cooperation between forestry and agriculture practices.
3. To protect the land and its resources against degradation such as desertification, soil erosion, landslides, floods, and other ecological devastation through proper land management systems and practices.
4. To conserve the forest ecosystems and their diverse genetic resources through wise use.
5. To contribute to employment and growth of national and local economies through fully developed and integrated forest-based industries.
6. To promote social justice and equity, and to honor the rights of indigenous cultural communities in the management, conservation and utilization of forest resources.

The MPFD envisaged that the general, long-term goal will be attained in stages within the Master Plan span of 25 years. In the medium-term of 10-15 years, the objectives of the Master Plan are:

- Equitable access to opportunities in management and sharing of benefits from forest resources, including a keenly developed private sector, with active leadership provided by non-governmental

organizations in the development and management of forest resources.

- Conscientious effort to practice soil and water conservation .
- Development of an integrated protected area system that recognized and is respected by the people and is kept intact.
- Active practice of urban forestry in cities and towns.
- Elimination of conversion of forests to other land uses, and excessive and illegal cutting, as well as unplanned exploitation.
- Scientific management of natural dipterocarp forests.
- Development of plantation forests and tree farms, with high productivity, complementing the yields from natural forests.
- Development of well-equipped and efficient wood-based and non wood-based industries that contribute to the supply of finished products, the generation of foreign exchange, and the development of the economy.
- Enactment of forest policies and legislation which promotes the efficient and equitable management, conservation, protection, and utilization of forest resources.
- Development of properly organized, staffed, and equipped forestry institutions.
- Full research and development support to field operations.
- Organized mass communication and field extension cooperative efforts for the

public and non-governmental organizations.

- Accurate monitoring and evaluation of the impacts on forest resources of forestry programs, projects, and activities.

In the immediate term of five years, emphasis is being placed on the attainment of top quality service in all components of the sector. Meeting quantitative targets is of secondary importance and used mainly to build capacities for performance. Quantitative targets can later be increased and their attainment can be practically pursued after the capability and vitality of institutions have been strengthened.

Three umbrella programs with five component programs under each encompass the areas related to the specific goals. These are the "Programs on Man and the Environment," the Forest Management and Products Development Programs," and the "Institutional Development Programs."

The first two umbrella programs deal directly with a set of primary concerns on the forest resources and their use by the people, while the third deals with supportive concerns which are necessary for the successful implementation. The latter set can therefore be considered as the action program of the Master Plan. The component programs are as follows:

Programs on Man and the Environment

- People-oriented forestry
- Soil conservation and watershed management
- Integrated protected area system and biodiversity conservation
- Urban forestry
- Forest protection

Forest Management and Products Development Programs

- Natural dipterocarp forests
- Pines, mangroves, and other natural forests
- Plantation forests and tree farms
- Wood-based industries
- Nonwood forest-based industries

Institutional Development Programs

- Policy and legislation
- Organization, human resources, infrastructure, and facilities
- Research and development
- Education, training, and extension
- Monitoring and evaluation of resource information and program impacts

Man and the Environment Programs

People-Oriented Forestry

The strategies of this sub-program provide a good indication of the detailed planning which has been undertaken for all the sub-programs. The strategies are to:

- Provide equitable access to upland resources and security of tenure, using Community Stewardship Contracts and other tenurial instruments.
- Implement community-based forest management to ensure upland development.
- Recognize the rights of indigenous cultural communities to their ancestral lands.
- Encourage and institutionalize active community participation in planning and implementation of programs.

- Implement agroforestry and other conservation measures in the uplands.
- Prevent destructive farming and resource utilization practices in the uplands.
- Provide adequate training to the participants in all aspects of the program.
- Provide adequate support services to agricultural activities, as well as social services to the uplands.
- Promote coordination and active participation of various agencies, including local government units (LGUs), NGOs, and the private sector, in the delivery of vital technical and social support services.
- Develop the capabilities of LGUs and NGOs so that they can perform their roles effectively and expand their services for more widespread action.

Soil Conservation and Watershed Management

The goal of this sub-program is environmentally sound and sustainable land use for both tangible and nontangible benefits. Four main strategies are to be taken for watershed management. These are:

- Isolation of the effects of poor land use.
- Elimination of destructive land-use practices.
- Enhancement of the productivity of watershed resources.
- Improved protection of the watershed forest reserves.

Integrated Protected Areas System (IPAS)

This sub-program was created to:

- Establish, over the next 10 years an IPAS that is representative of major bio-units and ecosystems, recognizes cultural values, and is consistent with criteria of international conservation bodies and the principle of sustainable development.
- Provide effective management and protection of existing and future protected areas according to each area's specific requirements.
- Revise legislation and policies for IPAS to reflect the concepts of biodiversity conservation and sustainable development, and provide for an effective blend of public participation.
- Provide a system for the selection and inclusion of important bio-units that need protection into the IPAS.
- Provide recognition of Department of Environment and Natural Resources (DENR) as the principal agency of the Government of the Philippines responsible for all IPAS and wildlife conservation management activities.
- Improve attitudes toward conservation programs by developing awareness and understanding of conservation values and by promoting viable alternatives to unsound resource utilization.
- Develop research and monitoring capabilities that provide reliable data for preparing management policies and plans, and providing links to other national, regional, and international conservation databases.

The major constraints for establishing and managing IPAS need to be addressed and removed as soon as possible. Highest priorities include immediate protection and inclusion into the IPAS of mossy forests, dipterocarp forests on slopes steeper than 50 percent and virgin forests.

Urban Forestry

The goal of the sub-program is the rehabilitation of the environment in urban centers. The idea is to establish tree strips and forest parks to help in reducing air, noise, and sight pollution and to improve the air temperature in urban areas. This program aims to plant one tree for every four persons in urban areas. Among some of the initiatives are:

- Provision of tax incentives to encourage owners of vacant and idle lots to plant trees.
- Initiation of an intensive information campaign on the benefits derived from urban forests.
- Enactment of laws and local ordinances directed toward urban environmental enhancement.

Forest Protection

Several strategies have been undertaken to protect the forests. These work to prevent land conversion, illegal logging, fire, pests and diseases, poor management, and other causes of forest destruction.

Forest Management and Products Development Programs

Natural Forest Management

The goal of these sub-programs is to bring about sustainable management of natural forests in a practical and feasible manner with accompanying environmental stability.

Under the Master Plan scenario, the natural production forests will include about 2.5 million hectares of second-growth dipterocarp forests and at least 100,000 hectares of pine forests. Logging has been banned in the remaining 980,000 hectares of old-growth forests, and in second-growth forests on slopes greater than 50 percent or above 1,000 meters in elevation. Logging has also been banned in mossy and marginal forests, mangrove forests, national parks and reserves.

Management of the second-growth dipterocarp production forest will be through a mix of operator-managers from local communities and corporations. This addresses the issue of access to forest resources by giving local people the opportunity to manage these resources.

Forest Plantations

The goal this sub-program is to establish and manage forest plantations to complement production from the natural forests, taking into account environmentally sound and sustainable development. It is envisaged that close to 3 million hectares of plantations will be created by the year 2015. New plantations are expected to yield 14.8 million cubic meters of wood annually.

The objectives of the plantation program are:

- To set aside suitable and available areas for production and protection plantations.
- To provide livelihood and sustained development opportunities for rural people.
- To contribute to environmental upgrading.
- To produce large volumes of raw material for processing plants that will serve established or future markets.

Wood-based Industries

The goal of this program is to develop wood-based industries for economic development, especially taking the rural areas into consideration.

The main objectives are to:

- Develop an industry that is efficient, competitive and economically profitable.
- Satisfy the growing demand for wood products.
- Maintain present employment, with a goal of increasing it in the future.
- Increase export earnings.
- Promote further processing and downstream industries.
- Develop community-based wood processing industries as a complement to large processing firms.

Non-Wood Forest Based Industry

The goal of the sub-program of non-wood forest products is to develop and bring under the

sustainable management these resources for the economic and ecological benefit of the greatest number of Filipino people. The main objectives are to:

- Provide adequate raw materials to various end users and industries while conserving the resources.
- Promote equitable access to opportunities in the utilization of the resources.
- Promote economic development in the rural areas.
- Institutionalize the development of non-wood forest resources.

Institutional Development Programs

This umbrella program has 5 sub-programs: Policy and Legislation; Organization, Human Resources, Infrastructure and Facilities; Education, Training and Extension; Research and Development; and Monitoring and Evaluation.

Existing forest policies are being reviewed to ensure that they support the objectives and strategies of the Master Plan for Forestry Development. DENR staff members are being placed in a work environment that will allow them to best serve the institution and its mission. Relative to this, existing infrastructure and facilities are being improved. Under the MPFD, human resources development is a priority concern, hand-in-hand with the implementation of an appropriate research and development program. More research will be directed toward determining appropriate silvicultural practices for residual forests.

To promote transparency in the implementation of the different forestry programs, a multisectoral approach has been developed. Multisectoral teams, or committees, have been created in pilot areas of the country and are involved in forest protection, watershed management, protected area management and the monitoring and evaluation of forestry projects.

Policy Framework for Sustainable Forest Management

The Philippine Constitution mandates that the State shall protect and advance the right of the people to enjoy a balanced and healthy environment in harmony with nature. This constitutional provision alone provides justification for government efforts to prevent environmental imbalance.

The DENR has been given primary responsibility for the protection and conservation of the country's natural resources. Key areas of the DENR's mission include the sustainable development of the ecologically critical uplands; protection/conservation of the remaining natural forests; rehabilitation of denuded and marginal areas; expansion of the integrated social forestry program; and establishment of community-based industries.

A new Forestry Code has been proposed that stresses sustainable development as the guiding principles in the management, conservation and development of forest resources. It adopts the Philippine Strategy for Sustainable Development and the Master Plan for forestry Development. The protection and rehabilitation of forest land is given the highest priority, and people participation is strongly promoted.

Some other salient features of the New Forestry Code include the establishment of a permanent forest estate and delineation of the limits of the forest land in the country.

The Code provides for equitable sharing of the benefits derived from the forests by empowering communities to develop and manage forest resources. It also provides incentives to forest-based industries to encourage them to be efficient, competitive and profitable. A Forest Management Fund for forest rehabilitation is to be established.

Under the new code, there will be less conversion of forest lands to other uses since farmers will be given secure tenure and incentives to practice soil and water conservation.

Program Thrusts for 1995

The DENR program thrusts for calendar year 1995 are to:

- Integrate environmental considerations in the decision making of forestry projects;
- Continue with the forest renewal and rehabilitation efforts in support of OPLAN ALIS KALBO (Operation "Stop Baldness");
- Establish permanent forest estates;
- Concentrate on the implementation of the current program on forest protection and strengthen the administrative capacity of the DENR in support of OPLAN ALIS KALBO;
- Integrate forest protection in forest management;
- Expand the existing people-oriented forestry programs;
- Generate programs focusing on the livelihood of displaced workers of cancelled Timber License Agreements;
- Continue providing technical support to Industrial Forest Management Agreement (IFMA) applicants;
- Accelerate the implementation of the Forest Land Management Agreements; complete the delineation of the forest line;
- Complete the delineation of the old-growth forest;
- Continue the inventory, assessment and delineation of residual forests to determine the extent of protection and production areas;

- Ensure the implementation of the nationwide tree planting program;
- Recognize the rights of indigenous cultural communities concerning their ancestral lands.

Outlook

Reforestation will be given a boost by increased local people participation. It is envisaged that the efforts of the Government and private sector will lead to nearly 3 million hectares of plantation forests by 2015.

The implementation of the Master Plan will also result in the reduction of brushlands, from 2.46 million hectares to only 900,000 hectares; grasslands from 1.54 million hectares to 680,000 hectares and the other extensive land uses from 6.59 million hectares to about 5 million hectares.

The Master Plan will encourage re-engineering of the wood industry and also the establishment

of new industries for domestic and export purposes. It is expected that the country will not only be able to satisfy its domestic requirements for sawnwood and plywood but will also be able to export these products.

Conclusion

The management of forest resources follows the DENR's mandate of sustainable development of the country's natural resources and ecosystems. The overriding aspect of this policy is the promotion of the well-being of the Filipino people through sustainable resource development, social equity, efficiency of natural resources-based industries, and effective environmental management and protection.

Renewed efforts are being taken to ensure the protection and conservation of the Philippine forests under the new system of sustainable forest management. All policies, plans, and programs of the Government are now geared toward this goal, which can hopefully be achieved fully by the year 2015.

Sri Lanka

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Background

Measures to address the concerns expressed in Agenda 21 and the 15 Forest Principles are interlinked and can be grouped under the following headings:

- Reforestation and afforestation to meet national timber and biomass demands;
- Forest protection and management of natural areas for preservation of biodiversity and to ensure soil and water conservation to support agriculture;
- Management of other forests for multiple purposes;
- National Conservation Review (NCR) of natural and near-natural areas for the development of a more representative Protected Area System;
- Studies on the traditional use of forests by nearby communities;
- Updating national policies and strategies relating to environmental issues.

The ministries responsible for the above activities are the Ministry of Agriculture, Lands and Forestry; the Ministry of Public Administration, Home Affairs, Plantation Industries and Parliamentary Affairs; and, the Ministry of Transport, Environment and Womens' Affairs.

Planning and Management of Land Resources to Control Land Degradation (Agenda 21 - Chapter 10)

The first attempts to arrest land degradation took place over a century ago. Legislation has not always been effectively enforced, however, due to institutional weaknesses, inadequate financial resources and the socio-political changes of the post-independence era commencing in 1948.

There are a multitude of institutions responsible for land management and most are not responsive to innovative approaches. Coordinated approaches and working mechanisms, backed by reliable information on land use and land degradation, are needed to deal with today's land problems. However, the prime concern is a National Land Use Policy for the conservation of natural resources and the environment. There should be provisions for arresting land degradation through erosion and loss of soil fertility, and for the safeguarding of biodiversity and natural ecosystems.

The long-term rehabilitation of shifting cultivation areas is the focus of many agroforestry research projects at the district level, but there are no concrete solutions yet.

Combating Deforestation (Agenda 21 - Chapter 11)

Sri Lanka has identified four programs for implementation under Chapter 11 of Agenda 21.

- Sustaining multiple roles and functions of all forest types;

- Enhancing protection, management and conservation of forests and converting of degraded areas into forest plantations;
- Promoting efficient utilization of wood and services from forests to obtain full value from the forests;
- Establishing and/or strengthening capacity for planning.

Forest Resources and their Degradation

The natural forests of Sri Lanka are comprised of four basic forest types: dry mixed evergreen forest of the dry zone; tropical rainforest; wet evergreen forest of the low and mid country wet zone; and tropical mountain forest of the mountain wet zone.

Deforestation has continued throughout history, reaching its peak during the British period when forests started being exploited for timber. During the present century, the forest cover has gradually declined from about 70 percent of the total land area to the present level of 20.3 percent, as shown through satellite imagery in 1992.

Forest clearing for irrigation, agriculture, human settlement, and hydropower development are trade-offs that have to be made in pursuit of socio-economic development. However, a large amount of forest clearing is a result of shifting cultivation and encroachment.

Another disturbing aspect of forest degradation is the exploitation of merchantable timber contrary to the principles of sustainable management. This has led to severe degradation of all the dry zone forests. In the wet zone, exploitation has also been severe. There is only about 47,500 hectares of well-stocked forest available for timber harvesting, and this is mainly in relatively inaccessible areas.

Administration of forest resources

Nearly all the natural forests in the country are State-owned. They fall mainly within the jurisdiction of two institutions, the Forest Department and the Department of Wild Life Conservation. Most of the natural forests that fall under the jurisdiction of the Forest Department are designated Reserve Forests or Proposed Reserve Forests. Reserve forests have been demarcated, proclaimed reserves by gazette notification, and set apart as areas to be dedicated permanently to forestry. The removal of timber from these forests has been carried out by the State Timber Corporation since 1968 according to regulations prescribed by the Forest Department. There is also a third category called "other state forests". These are jointly administered by the Forest Department and the Provincial Administration according to their size. These forests are now devoid of timber and have been degraded to scrub by past exploitation.

The areas falling within the jurisdiction of the Department of Wild Life Conservation are of two broad types: national reserves and sanctuaries. There are five types of national reserves: Strict Natural Reserves, National Parks, Nature Reserves, Jungle Corridors, and Intermediate Zones. While all national reserves are State land, the sanctuaries may include privately owned land.

All the State forests, and particularly those under the control of the Forest Department have been subject to varying degrees of clearing. In order to ensure that representative forest ecosystems are saved from exploitation and clearing, the Forest Department marked out Man and Biosphere reserves within its reserve forests. By 1990, the total area of these special reserves was 120,000 hectares, but even they had been subject to some degree of illicit clearing and encroachment. Further erosion of the Man and Biosphere reserves is bound to take place unless effective measures are taken to make their boundaries readily identifiable and to protect them from illicit felling and clearing.

In 1988, Parliament passed the National Heritage Wilderness Act, "to preserve in their natural state unique ecosystems and genetic resources and habitats of threatened species of animals and plants and for enhancing the natural beauty of the wilderness of Sri Lanka." The Sinharaja biosphere reserve, a primeval rainforest of 11,000 hectares, has been declared a National Heritage site under this Act. It has also been identified as a Natural World Heritage Site by UNESCO.

Environment

During the 1980s, the Government of Sri Lanka took steps to develop scientifically sound and acceptable resource management and environmental conservation principles. Sri Lanka was one of the first countries to recognize the objectives of the World Conservation Strategy (WCS) of 1980. A major recommendation of the WCS was that each country should prepare its own National Conservation Strategy (NCS) to guide the management and utilization of natural resources in achieving development objectives. A task force appointed by the Head of State completed the NCS in 1988 which identified priority areas and a strategy to deal with problems of environmental degradation. The Central Environmental Authority was empowered to exercise provision of the National Environmental Act. In 1990, the Cabinet Ministry of Environment was set up to formulate and coordinate all policy matters related to environmental matters.

Recognizing the need to pay attention to environmental issues relating to forestry development prior to the implementation of the Forestry Sector Development Project, a separate Environment Management Division was set up within the Forest Department in 1991. The main objective of the Division is to ensure the application of environmental safeguards to all forestry operations and to prepare conservation management plans for selected forest areas,

developing a database and training personnel for these specific tasks.

Main Environment and Development Issues and Suggestions for the Future

In the low wet country and mountain zones, where the forest cover is already heavily depleted and the need to conserve soil and water is paramount, it is agreed that no forestry operations will be allowed. In addition, selective fellings which had been prescribed in the first Forestry Resources Development Project (1986) have been suspended pending the execution of the National Conservation Review (NCR) when all natural and near-natural areas, including grasslands, mangroves and forests, will be assessed for their biodiversity status.

In the dry zone, illicit felling has been heavy and widespread. While the land presently under shifting cultivation could be given to the landless for permanent agroforestry after providing appropriate inputs for long-term settlements, any further illicit felling should be stopped by a combined effort of people's participation and law enforcement. Land-use plans should be drawn up taking into account adequate areas for permanent reserves or protected areas in the dry zone. The on-going National Conservation Review, which extends to the dry zone, will facilitate this activity.

The raising of forest plantations, primarily for the purpose of increasing supplies of industrial wood and woodfuel, should continue. Participatory agroforestry programs have an important role to play in increasing the productivity of abandoned and sparsely cropped areas. Plantation forestry has been carried out and expanded mainly by the Forest Department and to a lesser extent by the commercial tea plantations in the central hill country. At the end of 1992, it was recorded that 142,747 hectares of forest plantations had been established by the Forest Department throughout the country.

In 1991, the Forestry Sector Development Project (FSDP) commenced a five year investment program. The project is designed to:

- Strengthen the management of forests, establish plantations, and inventory additional natural forests and young plantations for management purposes;
- Establish an environmental management system to ensure conformity of forestry operations with environmental guidelines;
- Establish and maintain 23,000 hectares of new plantations;
- Expand and augment resources for professional and technical education and training; and
- Strengthen the Forestry Planning Unit of the Ministry in charge of forestry; reorganize and strengthen the management and field organization of the Forest Department; and upgrade information and data processing at the State Timber Corporation.

The project also includes the establishment of a Forestry Information System and the strengthening of the research facilities of the Forest Department.

Under the ongoing FSDP, (1991) a target of 23,000 hectares for reforestation has been set. At the mid-term review in 1993, it was recorded that the target appeared unattainable, mainly due to difficulties in obtaining suitable plantation sites. Survival rates, particularly in the dry zone, were also below optimum, indicating the need to develop a reliable plantation establishment system for relatively large areas. Reverting to the co-operative reforestation system (*taungya*), which was the principal method for the dry zone till 1981, has been accepted as a means of expanding forest plantations in that zone.

A self-financing scheme for production plantations was suggested at the 1993 Mid-Term Review of the FSDP. More recently, the involvement of village communities, NGOs and the private sector as partners in reforestation activities with technical backing from the Forest Department has been suggested.

Another area which needs strengthening in forestry development is the preparation of forest management plans and their timely implementation. Special attention is now being given to this need by the Forest Department, with support from the Overseas Development Administration (ODA) of the United Kingdom. Extensive forest mapping programs, and the preparation of management plans for established forest plantations, are a part of the program. An efficient and innovative mechanism for implementation of the forest management plans is necessary as a follow-up action.

Most of the current issues in the forestry sector have been addressed by the FSDP, but two areas which require attention have not been included. They are forest protection and timber utilization.

Forest Protection

The country's most serious problem in the forestry sector is the decline in the area and quality of the forests mainly due to shifting cultivation, illicit felling of trees and encroachments. The Forest Department is unable to control these illicit activities fully, due to insufficient staff and lack of mobility. Forest fires have also been a major cause of forest destruction, particularly in forest plantations.

Therefore, it is necessary to strengthen the capacity of the Forest Department to combat illicit activities and fire hazards through the provision of vehicles, equipment and staff. In addition, new approaches to solicit the assistance of villagers residing on the fringes of forest areas, and the establishment of buffer zones in specified areas, should be instigated.

Timber Utilization and Product Research

To commercialize timber extraction, conversion and sale by the State, the State Timber Corporation (STC) was set up in 1968. Utilization research was also entrusted to the STC. Due to the lackadaisical performance of the STC, however, the State has ceased to be the major supplier of timber and nearly 70 percent of the timber now being used is supplied from homegardens and from trees in the plantation sector or private lands.

The efficient use of available timber resources is vital. This can only be achieved by strengthening timber utilization research, particularly in relation to non-traditional timber. The setting up of an appropriate institute either within the State sector or outside to provide technical standards and advisory service in wood technology and utilization is urgently needed.

Establishing and Strengthening Capacity for Planning

The Forestry Planning Unit (FPU) and the Government plan the budget and monitor the programs that are implemented. Previously, planning has lacked order and long term vision. The main activities of the FPU include the preparation of a comprehensive National Forestry Policy, the proposal and revision of the Forestry Master Plan and the preparation of a comprehensive development plan to cover a 25-year period commencing in 1995.

Conservation of Biological Diversity (Agenda 21 - Chapter 15)

The past few decades have seen development activities that have posed a serious threat to the nation's unique indigenous biological wealth. The rate of deforestation has been rapid, and exploitation of the remaining natural forests has

gone well beyond renewable levels. If these trends continue, much of the country's forest based biodiversity will soon be irretrievably lost.

Compounding the problem is Sri Lanka's high population density, which is amongst the highest in the world. The population is largely rural and agrarian, and its growth will continue to exert severe pressure on the limited biological resources of the country.

There have been many initiatives taken to address and arrest these adverse trends. A package of activities has been introduced in the forestry sector. It includes the suspension of timber extraction from the natural forests; a National Conservation Review (NCR) that will inventory the flora and fauna; the declaration of many wet zone forests as conservation areas; a nationwide survey of traditional uses of forests; and the current revision of the forestry master plan to place special emphasis on conservation. Another move that aims to deal with the underlying causes of loss of biodiversity is the action being taken to address the interests and needs of villagers living in the peripheral areas of the forests.

Despite these initiatives, the loss of biodiversity continues. It is of critical importance to the national interest to review the current conservation measures and their effectiveness in conserving biodiversity. A coordinated, coherent, national Biodiversity Action Plan (BAP) is needed to address the present problems.

The Ministry in charge of Environment has set up a National Experts Committee on Biodiversity to guide and advise on action necessary to fulfil Sri Lanka's objectives for the conservation of biodiversity. A Biodiversity Action Plan for Sri Lanka will be prepared during a 15-month period commencing March, 1995.

Thailand

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Background

Thailand has an area of 513,115 square kilometers and a population close to 59 million. In recent years its economic growth has been phenomenal; its buoyant economy has been fueled by strong agricultural and industrial exports. This development, however, has had adverse effects on the environment, mainly by upsetting the land-use balance.

The country has been rapidly losing its forests to agriculture and other land uses. In 1961, forests covered 27.4 million hectares, or 53.3 percent of the land area. In 1993, the figures were only 26 percent. Many of the remaining forests have been heavily over-exploited, leaving them deficient in both growing stock and biodiversity.

The Royal Forest Department (RFD) has implemented, with the approval of the cabinet, a "forest zonation" of the national forest reserved land. The 23.6 million hectares of reserved forest land was divided into three zones as follows:

- Conservation forest (Zone C) = 14.1 million hectares.
- Agricultural land (Zone A) = 1.2 million hectares.
- Economic forest (Zone E) = 8.3 million hectares.

Tree Planting Programs

Future planting efforts will clearly exceed those of the past. The budget for the programs have already received approval by Parliament.

In 1996, Thailand will celebrate the 50th anniversary of the coronation of His Majesty the King. The RFD will honor this occasion by planting trees on 5 million rai (800,000 hectares) of degraded forest land. This 3 year project (1994-1996) will be conducted in cooperation with the private sector.

The Forestry Extension Fund will support planting on private and occupied lands during the 3-year period (1994-1996). Farmers will be paid 3,000 Baht per rai (or US\$750 per hectare to plant and take care of plantations).

Loans from the Agricultural Bank will support efforts to replace cassava with trees on 68,800 hectares between 1994 and 1996.

Seedling Distribution Program

The rapid expansion of reforestation projects is reflected by dramatic increases in seedling production. Tree seedlings produced by RFD for distribution jumped from 52 million seedlings in 1993 to 700 million in 1994. Production is expected to rise further, to 997 million seedlings, in 1995.

Protected Natural Resources

Protected areas in Thailand are managed by four divisions within the RFD: the Marine National Parks Division, the National Parks Division, the Wildlife Conservation Division and the Watershed Management Division. In addition, the RFD has responsibility for managing buffer zones surrounding protected areas.

Thailand

There are now 99 national parks, covering 5.2 million hectares in Thailand. In 1995, seven new parks, totalling 500,000 hectares, will be established.

Thailand has 37 wildlife sanctuaries covering 2.9 million hectares. One more 40,000-hectare sanctuary will be added in 1995.

Thailand had 13 botanical gardens and 45 forest parks as of 1994. In 1995, one more botanic garden and two more forest parks will be added.

International Cooperation

Thailand continued to cooperate with various international NGOs and respective foreign government donor agencies to enhance forest management in the country. Specific support is being provided by international organizations in the areas of protected area management, tree improvement, reforestation, plantation development, biodiversity, conservation, agroforestry, and community forestry.