INTERNATIONAL TROPICAL
TIMBER COUNCIL

ITTO

MR - 3
Distr.
GENERAL

ITTC(XXXI)/10
26 September 2001

Original: ENGLISH

THIRTY-FIRST SESSION
29 October – 3 November 2001
Yokohama, Japan

ACHIEVING SUSTAINABLE FOREST MANAGEMENT IN INDONESIA

REPORT SUBMITTED TO THE

INTERNATIONAL TROPICAL TIMBER COUNCIL

BY

THE MISSION ESTABLISHED PURSUANT TO DECISION 12(XXIX)

"STRENGTHENING SUSTAINABLE FOREST MANAGEMENT IN INDONESIA"

ACHIEVING SUSTAINABLE FOREST MANAGEMENT IN INDONESIA

Report of the ITTO Technical Mission to Indonesia

Jakarta
September, 2001

LETTER OF TRANSMITTAL

Jakarta, 21 September 2001

The Executive Director
International Tropical Timber Organization
Yokohama, Japan

Dear Sir,

We have the honour and pleasure to submit our report, entitled Achieving Sustainable Forest Management in Indonesia. This report, we believe, fulfills the request of the Government of Indonesia to the International Tropical Timber Council outlined in Decision 12 (XXIX), which was adopted at its 29th session, held in Yokohama, Japan from 30 October to 04 November 2000. This decision called upon the ITTO to organize a Technical Mission to assist the Indonesian government to identify ITTO support, especially in formulating plans and programmes to achieve sustainable forest management. The terms of reference of the Mission specified five important areas, namely, curbing illegal logging, restructuring forest industries, forest plantations for resource creation, recalculating timber value and implementing decentralization of the forestry sector.

The attached Report was prepared by a team of four international and five national experts led by Dr. B.C.Y. Freezailah over the period 12 March to 6 April and from 10 – 21 September, 2001. The Mission has enjoyed the full cooperation of the Government of Indonesia, and many individuals, groups and institutions representing a broad range of stakeholders and benefited from their valuable contributions. Indeed, the Mission itself was composed of individuals from an equally broad range of perspectives and backgrounds. The attached report is the consensus view of its members. From these recommendations we have drawn up an immediate agenda of action by the Government of Indonesia with the support of the international community

Each of the areas is addressed in a common format, specifically a review of the current situation, a fairly comprehensive discussion of the issues and the recommended measures to address these issues.

In view of the urgency to address the issues involved, we also recommend that "retreats" may be held to intensively discuss the findings and recommendations of the Mission at relevant national levels, with the support of ITTO.

We trust this report will stimulate a productive debate and enlist the needed support from the member countries of the ITTC.

We remain,

B.C.Y. Freezailah

C. Chandrasekharan

David W. K. Boulter

Hasim Danuri

W. Herbert Diemont

Agus Purnomo

Hiras P. Sidabutar

Nana Suparna

Dradjad Wibowo

ACKNOWLEDGEMENT

The Mission wishes to place on record its sincere thanks and appreciation to all those who provided assistance to facilitate its work. Many persons, too numerous to enumerate, have provided such assistance. We will fail in our duty if we do not specially mention the help provided by the following:

International Tropical Timber Council

Ministry of Forestry, Government of the Republic of Indonesia

Interdeparmental Committee on Forestry (IDCF)

Donor Forum on Forestry in Indonesia (DFF)

WWF Indonesia

Centre for International Forestry Research (CIFOR)

Asosiasi Panel Kayu Indonesia (APKINDO)

Asosiasi Pengusaha Hutan Indonesia (APHI)

PT. Sari Bumi Kusuma (Alas Kusuma Grup)

Lembaga Konservasi Alam dan Ekoturisme

Dr. Manoel Sobral Filho, Executive Director of ITTO

Dr. Efransjah, Projects Manager of the ITTO Secretariat.

Prof. Dr. Herman Haeruman

Mr. M. Kuswanda and his staff at the ITTO Resident Advisor's Office in Jakarta

Mr. Hasjrul Harahap

Mr. Djamaludin Suryohadikusumo

Mr. Thomas Walton, World Bank

Mr. Katsuro Saito, JICA

Prof. Emil Salim

Mr. Wisber Loeis

Mr. Chung Rae-Kwon

TABLE OF CONTENTS

	Page No.
LETTER OF TRANSMITTAL	iii
ACKNOWLEDGEMENTS	v
TABLE OF CONTENTS	vii
ABREVIATIONS AND ACRONYMS	xv
ABSTRACT	xix
EXECUTIVE SUMMARY	xxi

1. INTRODUCTION

1.1	ITTO TECHNICAL MISSION	1
1.2	COSTS AND BENEFITS OF FORESTRY'S CONTRIBUTION TO DEVELOPMENT	1
1.3	CRUCIAL CONCERNS	3
1.4	THE CONTEXTUAL ASPECTS	3
	1.4.1 Reformed Forest Policy	4
	1.4.1.1 Suggestions Galore	5
	1.4.2 Planning and Programming	7
	1.4.2.1 Indonesian Forestry Action Plan	7
	1.4.2.2 Propenas and Renstra	8
	1.4.2.3 National Programme	8
1.5	PROJECT IDEAS	10
	1.5.1 Policy Studies	11
	1.5.2 Framework for a NFP System	11

2. CURBING ILLEGAL LOGGING

2.1	REVIEW OF THE SITUATION	12
	2.1.1 Nature and Magnitude of the Problem	12

2.1.2 Influencing Factors and Agents of Illegal Logging 13
2.1.2.1 Direct Causes 13
2.1.2.2 Indirect Causes 14
2.1.2.3 Actors and Accomplices 15

2.2 ISSUES
2.2.1 Ineffective Law Enforcement 15
2.2.2 Deficiencies of logging concession (HPH) system 15
2.2.2.1 Institutional Problems 16
2.2.2.2 Social Problems 16
2.2.2.3 Economic Problems 17
2.2.3 Unregulated Development of Wood-Processing Industries 17
2.2.4 Negative Impacts on the Rights and Welfare of Local Communities 17
2.2.5 Need to Regulate and Reduce Wood Consumption 18
2.2.6 Need for Economic Bases to Support Development 18

2.3 MEASURES TO ADDRESS THE ISSUES
2.3.1 Law Enforcement 19
2.3.1.1 Role of Certification Bodies 19
2.3.2 Rectifying Deficiencies of Logging Concession System 21
2.3.3 Ensuring Rights and Welfare of Local Inhabitants 21
2.3.4 Regulating Wood Consumption 23
2.3.5 Building Strong Economic Bases 24

2.4 PROJECT IDEAS 24

26

3. RESTRUCTURING FOREST INDUSTRIES

3.1 REVIEW OF THE SITUATION 26
3.1.1 Common Features of Forest Industries 28

3.2 ISSUES
3.2.1 Policy-Related Issues 30
3.2.1.1 Inappropriate Licensing Conditions and Criteria 30
3.2.1.2 Distortionary Impacts of Incentives 30
3.2.1.3 Unimaginative Controls 30
3.2.1.4 Other Distortionary Impacts 31
3.2.1.5 Lack of Financial Discipline 31
3.2.2 Practice – Related Issues 31
3.2.2.1 Excess Production Capacity 31
3.2.2.2 Unsustainable and Uncertain Supply of Raw Material 32
32

3.2.2.3 *Lack of Transparency* 33
3.2.2.4 *Conflicts with Community Interests* 33
3.2.2.5 *Weaknesses of Financial Management* 33

3.3 MEASURES TO ADDRESS THE ISSUES 35
3.3.1 Policy Measures 35
3.3.1.1 Criteria for Restructuring 35
3.3.1.2 Balancing Supply and Demand 36
3.3.1.3 Preventing Market Failure 36
3.3.1.4 Ensure Sustainability of Resource 36
3.3.1.5 Inter-sectoral Coordination 36
3.3.1.6 Effective Use of Checks and Balances 37
3.3.1.7 Removing Distortionary Incentives 37
3.3.1.8 A Sound Approach Towards Investment in Forest Industries 37
3.3.2 Practical Measures 37
3.3.2.1 Detailed Review and Evaluation of the Situation. 38
3.3.2.2 Categorising the Processing Units. 38
3.3.2.3 Master Plan for Forest Industries Restructuring. 39
3.3.2.4 Annual Survey of Industries 40
3.3.2.5 Streamline Supply Situation. 40
3.3.2.6 Market Rationalisation 40
3.3.2.7 Diversion of Fuelwood for Industrial Use 40
3.3.2.8 Promoting Small-scale Forest-based Operations 41
3.3.2.9 Reducing Demand for Wood 41
3.3.2.10 Continuous Monitoring of Wood Balance 41
3.3.2.11 Effective Institutional Measures 41
3.3.2 Other Strategic Elements 42

3.4 PROJECT IDEAS 44

4. FOREST PLANTATIONS FOR RESOURCE CREATION

4.1 REVIEW OF THE SITUATION 44
4.1.1 Plantation Development in Indonesia 46
4.1.1.1 Categories of Plantations in Indonesia 47
4.1.1.2 Range of Rotations 48
4.1.1.3 Growth and Yield 49
4.1.1.4 Estimated cost per unit of wood 49
4.1.2 Reforestation Fund and HTI Concessions 49
4.1.2.1 Financing of HTI 50
4.1.2.2 Current Situation of HTIs 51

4.2 ISSUES 52
4.2.1 Slow Progress in Achieving Targets 52

4.2.2 Low Profitability 52
4.2.3 Low Productivity 52
4.2.4 Imbalance in the Implementation of HTI Programme 53
4.2.5 Lack of a Production Objective for Rehabilitation Plantations 53
4.2.6 Investment Risks 53
4.2.7 Controversies about the Contributions of Forest Plantations 53
4.2.8 Lack of a Policy and Plan for Forest Plantations 54

4.3 MEASURES TO ADDRESS THE ISSUES 54
4.3.1 Conduct Inventory and Evaluation of Plantations 54
4.3.2 Enhance Productivity of Forest Plantations 55
4.3.3 Privatization to Improve Competitiveness and Efficiency 55
4.3.4 Rescue Measures for the Troubled Joint Venture HTIs 56
4.3.5 Promote Stakeholder Participation 56
4.3.6 Undertake Research and Technology Development 57
4.3.7 Formulate a Clear Policy on Forest Plantations 57
4.3.8 A Proposal for Use of Reforestation Fund 58
4.3.9 Prepare and Implement a Plantation Master Plan 58
4.3.10 Strengthen Institutional Support for Forest Plantations 59

4.4 PROJECT IDEAS 60

5. RECALCULATING TIMBER VALUE

5.1 REVIEW OF THE SITUATION 61
5.1.1 Studies on Rent Capture in Indonesian Forestry 62
5.1.1.1 Present Position 63
5.1.2 Impact of Uncaptured Rent 63
5.1.3 Other Deficiencies in the Forest Revenue System 63
5.1.3.1 Weaknesses in Revenue Collection 64
5.1.3.2 Effect of Inflation on Forest Revenue 64

5.2 ISSUES 64
5.2.1 Environmental Values and Sustainable Forestry in Indonesia 65
5.2.2 Inadequacy of Royalty and Charges 65
5.2.2.1 Inappropriateness of Royalty and Charges 66
5.2.3 Complicated Collection Process 66
5.2.4 Problems in Revenue Allocation and Utilization 66
5.2.5 Lack of a Forest Resource Accounting System 66

5.3 MEASURES TO ADDRESS THE ISSUES 67
5.3.1 An improved Framework for Forest Revenue System 67
5.3.1.1 Concession Charges 68

5.3.1.2 *Log Production Charges* 69
5.3.1.3 *Forest Products Export Charges* 69
5.3.1.4 *Non-timber Forest Products Charges* 69
5.3.2 Improved Assessment of Log Production 70
5.3.3 Alternative Systems to Realise Timber Revenue 71
5.3.4 Increase Rent Capture 71
5.3.5 Simplify Timber Revenue Collection 71
5.3.6 Streamline the Concession System 72
5.3.7 Other General Measures 73

5.4 PROJECT IDEAS 75

6. DECENTRALISING THE FORESTRY SECTOR

6.1 REVIEW OF THE SITUATION 75
6.1.1 The Decentralisation Laws 76
6.1.1.1 *Key Features* 76
6.1.1.2 *Financial Autonomy* 77
6.1.2 Implementation of the Decentralisation Laws in Forestry 78
6.1.2.1 *Division of Functional Responsibility* 79
6.1.2.2 *Level of Preparedness* 79
6.1.2.3 *Planning for Forestry Development* 80
6.1.2.4 *Interpretations and Actions based on Expediency* 81
6.1.2.5 *Revenue Sharing Provisions* 82
6.1.2.6 *Differing Views* 82

6.2 ISSUES 83
6.2.1 Misperceptions about Decentralization 83
6.2.2 Lack of a Clear Decentralisation Plan 85
6.2.3 Need for a Comprehensive and Clear National Forest Policy 85
6.2.4 Deficiencies in the Process for Decentralization in Forestry 85
6.2.5 Inadequate Capability 86
6.2.6 Need for Strong and Enhanced NGO Involvement 87
6.2.7 Forest as an Economic Base 88
6.2.8 Forest Resource Security 88
6.2.9 Ownership vs Stewardship 89
6.2.10 Inadequate Revenue Source 89
6.2.11 Anomalies in Forest Revenue Sharing 89
6.2.12 Need for Financial Discipline and Efficiency 89
6.2.13 Need to Ensure Environmental and Social Harmony 90
6.2.14 Other Constraining Factors 90

6.3 MEASURES TO ADDRESS THE ISSUES 92
6.3.1 Framework and Sequenced Strategy for Decentralization in Forestry 92
6.3.2 Avoid Pitfalls of Trial and Error 93
6.3.3 Formulate and Promulgate a National Forest Policy for Indonesia 94
6.3.4 Framing Appropriate Set of Rules and Regulations 94
6.3.5 Human Resource Development and Capacity Building 94
6.3.6 Reformed and Strengthened Forestry Institutions 95
6.3.7 Develop Forest Resource Base and Sustainable Resource Utilization 97
6.3.8 Ensure Security of Forest Resource 97
6.3.8.1 Perumisasi Proposal 97
6.3.9 Enforce Financial Discipline and Control 98
6.3.10 Promote Forest Conservation 98
6.3.11 Promote People's Participation 99
6.3.12 Committed Management of Transition 99

6.4 PROJECT IDEAS 99

7. CONCLUSION AND RECOMMENDATIONS

7.1 CONCLUSIONS 102

7.2 RECOMMENDATIONS 103
7.2.1 Project Ideas 106
7.2.2. Immediate Agenda 107
7.2.3. Articulation of ITTO Mission Report 107

8. REFERENCES

LIST OF APPENDICES

Appendix-I Terms of Reference for ITTO Technical Mission to Indonesia 113
Appendix-II Members of ITTO Technical Mission to Indonesia 115
Appendix-III Members of the counterpart team to the ITTO Technical Mission 117
Appendix-IV Programme of the ITTO Technical Mission in Indonesia 119
Appendix-V List of persons met with by the ITTO Technical Mission 123

LIST OF TABLES

Table 4.1	Situation of Rehabilitation Planning, 1994-1995	47
Table 6.1	Revenue sharing between Central and Regional Levels related to Forestry Activities	82

LIST OF BOXES

Box 1	Action Proposals on Policy and Programmes	11
Box 2	Action Proposal to Curb Illegal Logging	25
Box 3	Action Proposals to Restructure Forest Industries	43
Box 4	Action Proposals to Raise Forest Plantations	59
Box 5	Action Proposals to Recalculate Timber Value	73
Box 6	Action Proposal to Implement Decentralisation in Indonesian Forestry	100
Box 7	Immediate Agenda	107

ABBREVIATIONS AND ACRONYMS

AAC	Annual Allowable Cut
AAPP	Arara Abadi Pulp and Paper
APHI	Asosiasi Pengusaha Hutan Indonesia (Indonesian Loggers Association or Indonesian Association of Logging Concessionaires)
APRIL	Asia Pacific Resources International Ltd.
APKINDO	Asosiasi Panel Kayu Indonesia, Indonesian Wood Panel Association
ASEAN	Association of Southeast Asian Nations
BAPPENAS	Badan Perencanaan Pembangunan Nasional, National Development Planning Board
BFL	Basic Forestry Law
BPHB	Property Transfer Tax
BPPN	Badan Penyehatan Perbankan Nasional (See IBRA)
BUMN	Badan Usaha Milik Negara, State Owned Enterprises
CBD	Convention on Biological Diversity
CGI	G-7 Consultative Group for Indonesia (The country's major donor group)
CGIF	Consultative Group on Indonesian Forestry (donor forum within MoFEC)
CIFOR	Centre for International Forestry Research (CGIAR),
C & I	Criteria & Indicators for Sustainable Forest Management
CITES	Convention on International Trade in Endangered Species
COC	Chain of Custody
CUR	Current Utilisation Rate
cu.m	Cubic meter
DFF	Donor Forum on Forestry
DfID	British Department for International Development
Dinas	District Government Authority
DJR	Dana Jaminan Reboisasi, Reforestation Guarantee Deposit Fund
DPOD	Dewan Pertimbangan Otonomi Daerah (Regional Autonomy Advisory Council or Council of National Development for Autonomy)
DPR	People's Representative Assembly or House of People's Representatives (Lower House of Parliament)/*Dewan Perwakilam Rakyat*
DPRD	Regional People's Representative Assembly (Dewan Perwakilan Rakyat Daerah) There are two categories of DPRD – DPRD-I in the provinces and DPRD-II in Kabupatens and Kotamadya.
DR	Dana Reboisasi, Reforestation Fund
EIA	Environmental Investigation Agency (International NGO)
EIA	Environmental Impact Assessment
EU	European Union
FAO	The Food and Agriculture Organization of the United Nations
FLB	Forest Liaison Bureau
FMU	Forest Management Unit
FOB	Free on Board

FRS	Forest Revenue System
FSC	Forest Stewardship Council
GBHN	Garis-Garis Besar Haluan Negara, National Development Guidelines
GDP	Gross Domestic Product
GOI	Government of Indonesia
Ha/ha	Hectare = 10,000 square meters
HPH	Hak Pengusahaan Hutan, Forest Concession Rights
HPHH	Hak Pemungutan Hasil Hutan, Forest Products Collection Rights or Forest exploitation licence
HPHTI	Hak Pengusahaan Hutan Tanaman Industri, Concession Rights for Industrial Timber Estate
HRD	Human Resource Development
HTI	Hutan Tanaman Industry, Industrial Timber Estate
IBRA	Indonesia Bank Restructuring Agency/*BPPN*
ICRAF	International Centre for Research in Agro Forestry
IDCF	Interdepartmental Committee on Forestry (Also Indepartmental Co-ordination Forum)
IFAP	Indonesian Forestry Action Plan
IHH	Iuran Hasil Hutan, Forest Products Royalty
IHPH	Iuran Hak Pengusahaan Hutan, Forest Concession License Fee
IHHT	Iuran Hasil Hutan Tambahan, Additional Timber Royalty
IMF	International Monetary Fund
INPRES	Instruksi Presiden, Presidential Instruction
IPF/IFF	Intergovernmental Panel on Forests/Intergovernmental Forum on Forests of the UNCSD
IPK	Izin Pemanfaatan Kayu (Clear Cutting Permits/Wood Utilisation Permit/Log Exploitation Permit)
IRR	Internal Rate of Return
ITTC	International Tropical Timber Council
ITTO	International Tropical Timber Organization
JICA	Japanese International Co-operation Agency
Kabupaten	District or Regency Administration
Kanwil	Kantor Wilayah (Regional Branch of the Central Government)
Kecamatan	Sub-District Administration
KKN	Korupsi, Kolusi Dan Nepotisme
LAS	Log Audit System
LC	Letter of Credit
LATIN	Indonesian forestry NGO/ *Lembaga Alam Tropika Nasional*
LEI	Lembaga Ecolabel Indonesia (Indonesian Ecolabelling Institute)
MAI	Mean Annual Increment
MDF	Medium Density Fiberboard
ML	Mission Leader
MOAF	Ministry of Agriculture and Forestry
MOF	Ministry of Forestry
MOU	Memorandum of Understanding

MOFEC	Ministry of Forestry and Estate Crops/*Departeman Kehutanan dan Perkebunan*
MPR	People's Consultative Assembly or National Consultative Assembly (Upper House of Parliament)/ *Majelis Permusyawaratan Rakyat*
MR	Mission Rapporteur
MTH	Mixed Tropical Hardwood
NFC	National Forestry Council
NFP	National Forest Programme
NGO	Non-governmental Organization
NPV	Net Present Value
NTFP	Non-Timber Forest Products
NWFP	Non-wood Forest Products
PBB	Pajak Bumi Dan Bangunan (Land and Building Tax)
PEMDA	Pemerintah Daerah (Regional Government)
PFA	Public Forest Administration
PFC	Provincial Forestry Council
PP	Peraturan Pemerintah, Government Regulations
PROPENAS	Program Pembangunan Nacional (National Development Programme)
PT	Perseroan Terbatas, Limited Liability Company
R&D	Research and Development
RENSTRA	Rencana Stratejik (Strategic Planning)
RFP	Regional Forest Program
RKT	Rencana Kerja Tahunan, Annual Working Plan
Rp	Rupiah, Indonesian Rupiah
SAF	Society of American Foresters
SFD	Sustainable Forestry Development
SFM	Sustainable Forest Management
SKEPHI	Forestry Conservation Non Governmental Network / Sekretariat Kerjasama Pelestarian Hutan Indonesia
SNA	System of National Accounts
t	tonne(s)
TFAP	Tropical Forestry Action Plan
TOR	Terms of Reference
TPI	Tebang Pilih Indonesia, Indonesian Selective Cutting System
TPTI	Tebang Pilih Tanam Indonesia, Indonesian Selective Cutting and Planting System
tpa	tonnes per annum
UN	United Nations
UN-FCCC	United Nations Framework Convention on Climate Change
UNCED	United Nations Conference on Environment and Development
UNCSD	United Nations – Commission on Sustainable Development
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
US$/USD	United States Dollars
UTF	Unilateral Trust Fund
USA	United States of America

UU	Undang Undang (Law passed by Parliament)
WALHI	Wahana Lingkungan Hidup (Indonesian Forum for Environment - a forum of some 400 Indonesian NGOs)
WB	World Bank
WFC	World Forestry Congress
WWF	World Wide Fund for Nature
WTO	World Trade Organisation

ABSTRACT

The circumstances that led to this Technical Mission are represented by the worsening situation in Indonesia, following the multidimensional economic crisis of 1997/1998. For more than 30 years, the Government of Indonesia pursued an aggressive and seemingly successful development policy. But the economic crisis wracking the country today is but one signal that much of that success has been achieved through a relentless exploitation and mismanagement of the country's rich natural resources far beyond their capacity that promise to rapidly deplete them.

The current state of forests is increasingly disheartening. The most glaring aspect of the present situation of the Indonesian forestry sector is the unsustainable management of forests under the current system of forest land management. This in turn has led to deforestation, environmental degradation, rampant illegal logging, increasing incidence of forest fires, falling productivity and widespread land conflicts.

This critical situation is a result of deep-rooted problems that largely emanate from attenuated property rights and weak enforcement of laws and regulations. Accordingly, there is a need for "reforming and strengthening of institutions". Attempts have been made in that regard by many bilateral and multilateral projects over the past 3 decades without achieving much tangible progress. The economic crisis of 1997/1998 and subsequent rise of a democratically elected government and initiation of decentralization process have raised expectations at all levels of society of an equitable opportunity to improve the situation. However, the process is still evolving. The uncertainties and ambiguities of decentralization process are producing serious negative impacts on Sustainable Forest Management.

This report addresses five important issues: (i) curbing illegal logging; (ii) restructuring forest industries; (iii) forest plantations for resource creation; (iv) recalculating timber value; and (v) implementing decentralization of the forestry sector.

Indonesian forestry is now at a critical crossroads: the choices are twofold, (1) continue on a path of forest depletion leading to a precipitous decline in its contribution to socio-economic and environmental welfare of the nation or, (2) a shift towards sustainable economic contribution over the longer term. There can be no doubt that the costs to the nation and to the world in the former option are greater than with the second.

However the sustainable benefits associated with the second option recommended in this report are conditional upon the full support of all stakeholders requiring their attendant obligations. This also calls for the fullest support of the international community.

EXECUTIVE SUMMARY

Introduction

Decision 12 (XXIX) was adopted at the request of the Minister of Agriculture and Forestry of the Republic of Indonesia during the 29th session of the International Tropical Timber Council (ITTC), held in Yokohama, Japan from 30 October to 04 November 2000. The decision of the ITTC entailed organising a Technical Mission to assist the Indonesian Government to identify ITTO support, especially in formulating plans and programmes to achieve sustainable forest management. Accordingly, the ITTO Technical Mission comprising four international and five Indonesian experts led by Dr. B.C.Y Freezailah undertook its work in Indonesia from 12 March to 6 April, and from 10 September to 21 September, 2001.

The circumstances that led to this Technical Mission are represented by the worsening situation in Indonesia, following the multidimensional economic crisis of 1997/1998. The country is struggling to manage the complex political, economic and social changes in what is still a fragile recovery from the economic crisis. The worsening situation in the forestry sector is evidenced by the continuing and alarming rate of deforestation and forest degradation, failure of the rule of law, inefficient and inequitable forest utilisation partly due to malpractices, excessive concentration on economic gains from timber management, and lack of co-ordination among relevant institutions. This situation is further compounded by the on-going process of decentralisation without adequate and clear transitional measures.

The terms of reference of the Mission have specified five important issues to be addressed – i.e., (i) illegal logging (and its impact on the security of forest resources); (ii) restructuring forest-based industries (to rectify the imbalances and inefficiencies in the wood industries sector); (iii) forest plantations (the inadequate efforts on creating high-yielding industrial forest plantations); (iv) recalculation of wood value (the low price/rent being realised for the supply of wood from natural forest); and (v) decentralisation of forest management (the inadequate preparedness for decentralisation in forestry).

80 percent of the primary forests in Indonesia have been logged over. There is a great deal of uncertainty concerning the productivity of the second growth forests which in turn has serious implications for future economic supplies of timber.

The Backdrop

Indonesia is a vast and diverse country of 220 million people, representing some 300 ethnic groups. Forest, accounting for about 60 percent (estimated at about 113 million hectares) of the land area, is Indonesia's most extensive natural resource, and has major importance for global climate and bio-diversity. Indonesia's forests represent about 10 percent of the world's remaining tropical forests. The tropical rain forest of Indonesia is widely acclaimed as one of the most species

rich and complex tropical eco-system. Indonesia is one of the 12 mega biodiversity countries in the world.

Indonesia's forest is home to some 40 million people. Additionally, forestry provides livelihood, directly and indirectly, through its contribution to employment and income, for some 4 million families. But the main benefit from forests accrues to a relatively small group of entrepreneurs who practise unsustainable forest exploitation.

The teak plantations of Java dominated the forestry scene of Indonesia up to the late 1960s. Since then forestry activities in the Outer Islands, including logging in natural mixed hardwood forests for sawlogs and plylogs and processing of timber, have been the main focus.

More than three decades after the policy on Indonesia's natural forests was set, the state of forests is increasingly disheartening. The most glaring aspect of the present situation of the Indonesian forestry sector is the **unsustainable** development of forests under the current forest management system, particularly **of logging concession system.** This in turn has led to deforestation (annual rate of 1.8 million ha.), environmental degradation, illegal activities, and increasing incidence of injurious factors such as forest fires and falling productivity of both natural forests and plantations.

These issues are actually a manifestation of deep-rooted problems that largely emanate from attenuated property rights and weak enforcement of existing laws and regulations. Accordingly, there is a need for "reforming and strengthening of institutions". Attempts have been made in that regard by many bilateral and multilateral projects over the past 3 decades without achieving much tangible progress. The economic crisis of 1997 and subsequent rise of a democratically elected government and initiation of decentralisation process have raised expectations at all levels of society of an equitable opportunity to improve the situation. However, the issues are still being discussed, and no firm action has been forthcoming. The uncertainties and ambiguities of decentralisation process is producing serious negative impacts instead of serving as a tool to enhance Sustainable Forest Management.

Contextual Aspects

The five inter-related aspects specified in the TOR of the ITTO Mission form the core of the issues tormenting the forestry sector of Indonesia. In that regard, the need for a strong and comprehensive National Forest Policy and an appropriately designed National Forest Programme is specially highlighted.

The Mission received a large number of suggestions from a wide range of stakeholders, institutional representatives, donors and concerned citizens regarding the reforms needed in the policy front. The Mission also consulted a number of papers and publications related to Indonesian forest policy. In listing some of those suggestions, which are somewhat overlapping, the intention is to **boldly underline the urgent need to review and reform the forest policy** of the country:

- Review the current forest landuse classification and re-establish new and realistic targets for total Permanent Forest Estate, production forests, plantations, protected area system (parks and nature reserves), community woodlots etc.
- Review the current system of forest production management under logging concessions; diversify production management by introducing new/improved systems.
- All types of forest to be brought under a system of management plan; establish model/demonstration FMUs; adopt the holistic concept of ecosystem management; promote NWFPs and forest (environmental/recreation) services and integrate them in the overall system of forest management.
- Support and promote social forestry, trees outside forest and non-forest sources of wood (such as rubber and coconut plantations).
- Promote reduced impact and waste-free harvesting and utilization of harvest residues.
- Support forest-based rural industrialization and downstream processing for improved value addition; develop efficiency measures for wood processing industries; promote entrepreneurial involvement of private sector in the forestry sector.
- Reform, strengthen and streamline forestry institutions at all levels.
- Provide greater support to forestry research and technology development.
- Improve incentives for sustainable use of timber by: (a) moving log prices to international levels, (b) raising the share of forestry revenues received by the government with the intention of optimising rent capture and (c) reviewing the need for continued subsidies of forest plantations; appropriately link trade policy instruments with incentive policies in forestry.
- Treat indigenous people as social assets and integral elements of Indonesia's forests; analyse and evaluate forest related rights and privileges and tenurial systems to assess the nature and extent of reforms required and to implement such reforms.
- Ensure advance consultation with forest-dwelling communities affected by forest development projects, and put in place mechanisms to ensure equitable participation in the benefits, including possible joint management of regenerating areas based on traditional resource management systems.
- Establish intensive multi-stakeholder consultations as a necessary prerequisite for forestry planning and implementation.
- Institute a regular and mandatory system of forest valuation, rent calculation and forest resource accounting within the overall purview of SNA.
- Develop more effective long-term mechanisms for interagency coordination in forest land conservation and development.

- Wherever a specific aspect of forestry needs elaborate policy attention, formulate "sub-policies" linked organically to the "parent policy" – examples: policy on forest tenures; policy on forest plantations; policy on non-wood forest products; policy on fire management.

Policy aims are achieved through plans and programmes. The concept of National Forest Programme was developed as part of the follow-up of the UNCED decisions by the international forest policy dialogue under the auspices of the UN-CSD. The NFP comprises a broad inter-sectoral approach to forest development at all stages including strategies and plans of action as well as their implementation, monitoring and evaluation. The NFP in Indonesia is envisaged to become a vehicle for a national discussion of what should be done for sustainably managing the forests of the country. The NFP should be prepared through a participatory, interactive and bottom-up process, duly appreciating the ground realities.

Several immediate actions are necessary, such as: establishment of a secretariat for NFP; create a multi-stakeholder forum for discussing the NFP processes; establish partnerships on different levels in order to create synergies; develop standards and criteria for sub-national forest programmes. The NFP system needs to be institutionalized (preferably within a sectoral institution with full access to information), and it will be advisable, initially at least, to undertake the task as a full-fledged project.

Since many of the programmes included in the NFP/RFP are of substantial size and nature, it is often necessary and advisable to prepare separate plans for such programme areas (e.g. Forest Plantations, Forest Industry Development, Research and Technology Development, Non-wood Forest Products, Forest Fire Management, Bio-diversity Conservation, Eco-Tourism).

Specific Issues

The Mission's findings and recommendations on the specific issues referred to it are summarized below:

Curbing Illegal Logging

The Mission identified the following as important factors influencing the spread of illegal logging:

- Total breakdown in forest law enforcement.
- Inadequate transitional measures for the decentralization process.
- Serious deficiencies in timber production management, which encourages illegal logging and other forms of irregularities.
- Unregulated expansion of wood processing industries unlinked to sustainable sources of raw material.
- Excessive domestic demand.

- Serious indifference/neglect to the rights and welfare of the local community.
- Lack of employment opportunities.
- Inefficiencies in wood use.

Strict enforcement of law and order including deterrent punishment, in tandem with a program to address corruption within enforcement agencies, is unavoidable if the pervasive nature of illegal logging is to be effectively controlled.

On the issue of law enforcement in forestry and prevention of illegal logging, the Mission is of the opinion that there are no short cuts to efficient institutional arrangements, with adequate staff and funds, that use "sticks" and "carrots" appropriately. Illegal logging has to be attacked on a war footing. This stern measure should be complemented with policy measures including changes to the existing system of logging concessions, industrial licensing and perverse subsidies. A temporary ban on log exports may also be considered. Once the situation is brought back to a reasonable state of civility, it may then be possible to promote lawful behaviour through a proper system of timber tracking and inspections. Additional measures required include: ensuring rights and welfare of local populations; regulating and reducing demand for wood; implementation of timber certification; auditing of conservation areas; and promotion of overall economic development.

Control of illegal logging is an area where there is need for urgent and vigourous action.

Restructuring Forest Industries

The wood industry sector of Indonesia is characterised by several common features such as over capacity, wood supply deficit, over and unsustainable forest exploitation, low level of capacity utilisation, low efficiency and low competitiveness, increasing use of illegal logs, over capitalization, debt burden, social tension, and lack of reliable and consistent information. Low administered fees for raw material, along with other flaws in the logging concession system, are fuelling these problems.

Interaction of the Mission with stakeholders and other concerned persons have brought out two types of issues linked to restructuring of forest-based industries – policy-related and practice-related.

Policy-related issues result from inappropriateness and vagueness of policies, and/or conflicts among related policies. Policy-related issues include: conditions and criteria for issuing licences to establish forest-based industries; implications of incentives including concealed and direct subsidies; forms of access to raw material resource (e.g. supply from land clearance); impacts of tariff and non-tariff protection; controls and monitoring; changes in socio-economic roles of industries; and fiscal and financial inefficiencies and/or irregularities. Often, these policy-related issues get reflected practically as impacts of implementational flaws. Some policy-related issues may result in more than one practical issue and/or one practical issue may be attributable to more than one policy issues.

The practice-related or practical issues are linked to the skewed structure of forest industries in Indonesia. These often result from policy failures, and include among others: excess production capacity; lack of sustainable raw material supply; lack of respect for the concept and criteria of AAC; serious lapses in forest management; low profitability of forest plantations; inadequate planting and indifferent performance of plantations; lack of integrated management for wood and non-wood products; lack of transparency in the management of forest industries; unreliability of statistical information; lack of people's participation and social conflicts; improprieties of financial management, weaknesses of financial intermediation and indebtedness of industrial enterprises / companies.

It has been highlighted by all concerned that the principal reason for the present crisis in Indonesian forestry is the gap between supply and demand for wood. Two aspects, which have precipitated the need for restructuring the forest industries are the financial crisis and the raw material crunch. They have affected the processing units which are under IBRA's responsibility as well as those outside it. The situation is likely to prevail (and assume larger proportions) in the future, unless realistic action is taken immediately. Inaction will have implications on employment, income, government revenue, trade, operational efficiency, community welfare and environmental conservation.

The main incentives needed to achieve increased efficiency in wood industries are higher log royalties and methods of pricing designed to apply scarcity value of raw material. This can be achieved by reducing log output to sustainable levels.

Policy measures to address the issues affecting the structure of forest industry include, *inter alia:* structuring specifications and criteria, supply/demand balancing, improved market mechanism, sustainability of forest resources, inter-agency/inter-sectoral co-ordination, checks and balances, balanced incentive system, and investment strategy.

On the practical side some of the important measures required are: detailed review/evaluation of the wood industries and categorization by their state of viability and efficiency; formulating and implementing a master plan for restructuring forest industries; establishing a system of annual survey of industries; streamlining forest management system and rationalizing wood supply arrangements; and reducing demand for wood.

Master plan for restructuring forest industries will specify: the units which are to be closed down or replaced; those which can be repaired and retooled; those which require streamlining of management; and the need for diversifying production and establishing new units. All aspects involved in the wood industry structure, i.e. product combination, size, technology, location, availability of raw material, trade and market characteristics, capital formation, indebtedness, efficiency and so on, are to be periodically reviewed.

The focus on the problem in achieving sustainable forest management in Indonesia has recently shifted from the rent-seeking behavior amongst a few stakeholders to an alarming rate of illegal logging that, *inter alia*, is considered to be a consequence to excess capacity in the forest industry. The apparent solution, therefore, is to downsize and/or restructure the industry. It is not, however, clear if this is to be a preferred solution as such downsizing/restructuring will have

unintended social and economic effects. While such a problem should not materialize in an open competitive economy where price would equate excess demand with available supply, a long history of government subsidies have muted market forces in Indonesia.

The present structure of forest industries, dominated by primary processing units, mainly of sawmilling and plywood and recently of pulp and paper, was influenced by easy availability of cheap raw material and labour at low cost. As the raw material situation changes, as the national policy demands balanced regional development, as domestic demand for processed products in terms of quantity and variety changes, and as the country faces competition in the export markets, it will be necessary to suitably modify the structure, if Indonesia's forest-based industries are to retain their important role in the future. Wastage of raw material has to be reduced to the minimum and forest industry should be diversified to promote utilization of residues. Also efficiency in forest utilization through diversification of production would make it increasingly necessary to carry out production, to the extent possible, in integrated units.

As Indonesia attempts to expand exports of further-processed products, much greater emphasis will have to be placed on effective marketing activities. This implies a much more detailed understanding of individual markets and market segments, including attention to consumer tastes and preferences, and to product quality, consistency, buyer service, and distribution network. Intersectoral coordination and promotional efforts are also important.

Expanding Forest Plantations

The area under forest plantations are increasing in many countries, because of the failure of natural forest management to supply the right species of wood, in the required amounts and at the right time. Forest plantations at the same time have several favourable attributes: i.e. ideal for concentrated production of raw material for industrial processing; can use degraded lands; allow intensive management at acceptable cost; amenable for manipulating growth and quality through genetic improvement; can be grown as pure or mixed crop; high-input/high-output potential; positive economy of scale; can form a useful part of diverse and synergetic landscape; create employment particularly when associated with value-added processing; provide products for local consumption, relieve pressure on natural forests and help improve land-use through small holder and outgrower planting.

Some of the potential negative aspects of plantations include: heavy investment and infrastructure needs; complexity of cost structure; tendency to rely on restricted species base; pressure of industrial demand may distort priorities; bio-diversity and land rights are likely to be compromised; management lapses can lead to site deterioration and poor growth rates. Unless adequate care is taken, these negative aspects can undermine the effectiveness of plantation programmes.

Reflecting these attributes, the major roles being played by forest plantations include: meeting the timber supply deficit from natural forests; rehabilitation of watersheds that have been extensively degraded; and provision of socio-economic and environmental benefits.

As in other primary production enterprises, advanced technologies play an increasingly important role in plantation forestry. Use of appropriate plantation technology will ensure that the right species are planted on the right site using the right technique and maintained under the right treatment. The broad aspects involved in this regard will cover: soil capability studies; analysis of site factors; site preparation and improvement; preparation of planting materials; control of fires, pests and diseases; plantation silviculture and management systems.

Productivity of forest plantations of all categories in Indonesia, including that of most HTIs, is considerably lower than the achievable optimum. This is essentially due to the deficiencies in management: inadequate attention to nursery practices; lack of care in site-species matching; inappropriate technological inputs; lack of maintenance; lack of protection from pests, diseases and fire; insufficiency of skilled human resource; poor infrastructural facilities, and so on.

Slow progress in achieving targets, low profitability of plantation enterprises and imbalances in the implementation of HTI programme are major issues. Some of the reasons attributed for the situation are the following:

- Since alternative source of cheaper raw material is being made available, the companies benefit by not planting, and private investors have no incentive to produce.
- Tenure issues and land conflicts.
- Inappropriate selection of species, provenances and sites.
- Lack of plantation performance audit.
- Inadequate access to credit due to high risks and low profitability.

Other related issues to be addressed include: lack of a production objective for rehabilitation plantations; various types of investment risks, and lack of a clear policy for forest plantations.

While some issues originate from the conceptual positions taken in favour of or against plantation forestry, most issues are policy-related and institutional in nature. An example is the maneuvering on the part of Industrial Timber Estate (HTI) concession holders in Indonesia to obtain secondary forests with valuable timber growth tagged as "logged over and degraded" in order to earn a "profit before investment". This practice – the unwarranted increase in the cost of an investment project - allows producers to secure much larger amounts of financing than needed. This in turn contributes to an increase in activities unrelated to reforestation.

The Mission received strong messages from those who were interviewed that it is pivotal to reassess the policies (and considerations) governing forest plantation programme, including those on the use of Reforestation Fund (DR) for HTIs. Many operators of HTI lose their interest to plant once the payment from the Government has been received. In some other countries, such financial contributions are made available only *post factum*, after the work (or defined stages of the work) has been completed, so that there will be no "profit before investment".

The following measures have been proposed by the Mission to address the above issues: conduct an inventory and evaluation of plantations in Indonesia to assess their condition and management needs; enhance productivity of forest plantations; encourage and establish a system of stakeholder consultation and participation in plantation development; undertake research and technology development on different aspects of plantations; formulate and implement a clear and comprehensive policy on forest plantations; prepare and implement a plantation master plan; strengthen institutional support for forest plantations (including a *Forest Trust* to administer the funds for plantation development); and promote non-forest sources of wood to supplement the supply of wood from forest sources.

It is further suggested that high yielding tree plantations should be given priority because of their positive environmental and economic contributions. Reasonably good and suitable land should be allocated for production plantations. Such lands, for clearfelling and planting, can be found in the areas classified as conversion forests and some of the degraded production forests.

Industrial plantations with the right mix of species (e.g. fast growing general purpose species and valuable species such as teak, Agathis, and mahogany) can support the development of a wood panel industry providing both cheaper core and expensive face veneer. These plantations can also supply part of the sawlog needs. Plantation, in combination with tropical hardwood from natural forests, could meet the range of market demand for different types of wood products. For reasons of economy, pulpwood requirements will have to be met largely by raising fast-growing tree plantations.

Recalculating Timber Value

In the system of forest resource use being practised in Indonesia, based on forest concessions awarded to private entrepreneurs, the value due to the resource or rent is captured in the form of royalty and charges. In the existing structure of the forest revenue system in Indonesia, there are some 13 different charges of which royalty and reforestation fee account for almost 96 percent.

Rent is the surplus available after all factors of production have secured the minimum return needed to keep them engaged in the activity in question. Rent capture is effected through the revenue system of the Government. The rent capture coefficient is an indication of the efficiency in managing logging concessions by the government for the benefit of the Nation. In that regard, calculation of real value of timber assumes significance as a factor in improving rent capture.

A study commissioned for the Mission by ITTO found that in 1997-98 rent capture in logging concessions was between 24 and 36 percent (average 30 percent) leaving a windfall of 64 to 76 percent to concessionaires. However, the Mission is unable to obtain more recent data reflecting the current situation.

Apart from the lack of an effective fiscal mechanism to capture rent due from timber resources, and the losses occuring through illegal logging, there are also other limitations in the forest revenue system of Indonesia. Two of the important deficiencies are: weaknesses in revenue collection

(ranging from flaws in assessment of production to lapses in collection) and absence of a compensatory mechanism against inflation. Some of the issues discussed earlier under illegal logging, forest-based industries and forest plantations have their origins in the weaknesses found in timber pricing and related policies. These, *inter alia*, include the following:

- adverse impact of raw material pricing on: efficiency of industries, investment in plantation forestry and entry by potentially more efficient users of the resource;
- industry policy based on inefficient export taxes, and official sanction of cartels controlling exports of processed products;
- lack of effective measure to encourage community participation in forest management and protection.

The inappropriateness and inadequacy of royalties and charges lead to undesirable impacts, manifested in different ways:

- There is no element of competition in awarding logging concessions.
- The low level of charges encourages concessionaires to hold large tracts of forests without having to pay a proper price for that privilege.
- The charges are so low that they do not reflect the scarcity situation.
- There are no clear mandatory provision for review of royalty and charges, for periodically adjusting to the level of inflation.
- The policy of log export ban and other forms of protection results in reduced price for domestic log supply and makes it difficult to have a realistic estimation of potential rent.
- The system of low rent has a strong element of concealed subsidy, distorting priorities away from efficiency and competitiveness.
- It prevents expected paradigm shifts from timber orientation to sustainable ecosystem management and from profit maximisation to social welfare mission.
- The system components are not properly linked so that it is easy to evade payment of some charges; and such evasions have been happening.

Based on analysis of the situation, the Mission proposes the following measures:

- increase rent capture;
- streamline the concession system;
- streamline and simplify timber revenue collection;
- establish a natural resource accounting system;
- introduce a compensatory mechanism against inflation;
- reduce the number of collection points;

- conduct trials with other system to assess comparative merits with reference to the current concession system;

Major constraints in implementing sustainable forest management is not a lack of technology, but the short term perceptions and time preferences of the private investors. The right balance of incentives and controls, though a difficult recipe, appears to be the most important factor. Experience has shown that underestimating the value of the resource is a disincentive for better utilization and promotes wasteful use. It has been estimated that logging residues amounting to about 40 to 50 percent of the standing volume are left in the forest. Residue utilization, as a measure of efficiency in resource use and resource conservation, needs to be specially emphasized. This is extremely significant, considering that the rent capture from the logs removed is only about 30 percent of the potential. The present rates and charges can, therefore, be considerably increased.

Rates and charges on forest resource, through their appropriate adjustments, can be powerful tools to ensure proper management.

A consolidated single point revenue collection (or collecting revenue by grouping all land-area-based and timber-volume-based charges into two separate groups) with defined allocation criteria can meet the main considerations of cost of collection, distributional criteria and policy objectives. The purpose ultimately is to reduce windfall profits, as it adversely affects efficiency and the urge for value-addition.

Decentralising Forestry Activities

Decentralisation generally refers to the transfer of political, fiscal and administrative powers from national to subnational units of government. It shifts responsibility and accountability from the central government to the regions, and is linked usually to some kind of an election process.

In terms of legislation, the spirit of decentralisation in Indonesia is captured in Law No. 22/1999 (UU 22/1999 on Regional Governance) and Law No. 25/1999 (UU 25/1999 on Fiscal Balance Between the Centre and Regions). Government Regulation No. 25/2000 (PP 25/2000 on government authority and provincial authority as an autonomous region) provides elaboration/clarification on allocation of functions to central and provincial governments. These laws dramatically changed the nature of governance and public administration in Indonesia.

UU 22/1999 defines regional autonomy on the basis of five fundamentals: democracy, people's participation and empowerment, equity and justice, recognition of the potential and diversity of regions, and the need to strengthen the regional legislatures. The law stipulates that the district level (*Kabupaten/Kota*) be the main functional level of the decentralised local government, which is to have wide ranging autonomy.

Following the promulgation of UU 22/1999 and UU 25/1999, authority and responsibility for forest management have been decentralized to local level of government, mainly to *Kabupaten* level. Lands, including state forestlands, are to be under local government administration. All

forestry activities with certain exceptions fall under local government management. The extent of forestlands in each *Kabupaten* varies widely. The local governments have to equip themselves to manage the forests scientifically if they are to derive the potential benefits of this valuable resource. Presently, most *Kabupatens* are not adequately prepared to carry out the decentralised responsibilities.

There is an urgent need for the government (MOF) to develop regulations for implementing the decentralization laws in the forestry sector to avoid misinterpretations and resulting confusion among provincial and district governments. There is also need for developing uniform criteria and indicators of SFM on a priority basis to prevent the district governments from developing and adopting their own. Some district governments have already done so, exacerbating the present problems.

Decentralisation in forestry covers three major aspects: forest production in public as well as private forest lands; service to the people in forestry business/processing activities linked to production; and protection of forests dedicated to conservation and ecosystem protection.

While UU 22/1999 and UU 25/1999 provide the prime legislative means of implementing decentralisation, the scenario is made ambiguous by a series of conflicting, confusing and contradictory regulations, without clear indication as to which supercedes what. UU 41/1999 on Basic Forestry Law has not helped the situation either. The confusing situation has encouraged an unholy alliance of brokers, capital owners (timber buyers) and village elites (who obtains licence from district authorities) operating locally issued timber exploitation licences with an organised chain leading up to export of logs or supply of logs for processing.

The extent of area over which, and the circumstances under which, concession rights and cutting permits can be issued by various authorities (district, provincial and central) is still unclear. Accordingly, there have been cases where (overlapping) cutting permits have been issued covering the same area by different authorities to different parties. This creates conflicts, environmental damage, and economic injustice. In addition, the Mission was informed of some 4,000 land claims by local communities.

Decentralization has direct implications on resource ownership and control, resource management, institutions and instruments, and finance. Each of these have transitional and longer term aspects/implications, in terms of mechanisms and institutional structures influencing the stability of forestlands, forest management practices, forest policy development, forests and industry linkages, public management system of forestry activities, and human resource management.

During the meetings and interviews on issues of decentralisation with persons of various backgrounds, the Mission received several opinions and suggestions:

- It is not possible to reverse the process of decentralisation
- Decentralisation of forestry to some 400 district entities will be unmanageable; carry out decentralisation only up to the provincial level (numbering 33), with the centre providing crucial policy support and guidance and co-ordination.

- It is necessary to re-evaluate the condition of forest resources: to prepare for forestry decentralization; to provide background material for preparing National Forest Programme; and to develop indicators of forest sustainability for evaluation of the local government's performance.

There is need for: restructuring of the MOF at the centre and to strengthen forestry institutions at the provincial and regional levels; defining roles, responsibilities and powers of all institutional components; sharing and transferring of all related resources (material, financial and human) and records. Decentralisation in forestry assumes new dimensions, considering that the forest resource has trans-generational importance.

As part of the decentralisation process it is necessary to remove the legal anomalies and settle disputes regarding land rights and other injustices, which have occurred as a result of centralized governance. The presence and power of the security sector (the Military and the Police) over the public forest administration should be weaned away.

Some of the constraints to be considered in this regard are: non-homogenous nature of decentralised units; lack of technical capability; inadequate revenue source; institutional inadequacy; fragmented forests; gaps in rules and regulations; imbalances in spatial planning.

However, implementation of decentralization in Indonesia has been facing various issues – legal, institutional, financial and others. The agonies and cascading impacts of decentralisation, often, originate from misperceptions (about decentralisation) on the part of the different stakeholders and other related issues, such as lack of financial discipline, anomalies in revenue sharing, lack of resource security, inadequate policy support, and gaps in technological and planning capability.

Decentralisation in the forestry sector is a means of achieving sustainable forest management. For a smooth implementation of decentralized forest management, some important factors, among others, have to be taken into account: laws and policies have to be clearly defined, organizational structures and mechanisms have to be established and, human resource, infrastructure and budget have to be provided. An urgent need is to critically review the roles, functions, organizations and capabilities of Government agencies (and Government-owned enterprises) in the continued development of the forestry sector, and to redefine and restructure these roles, functions and organizations to provide the capability to meet the growing and changing demands of the sector, and more importantly to ensure the long-term sustainability of the forest resources and the forestry sector in the country.

It is the proposal of the Mission that decentralisation in forestry be undertaken within the framework of a sequenced strategy reflecting the on-ground situation (covering national forest policy, rules and regulations, human resources development and deployment, institutional restructuring at various levels, bureaucratic re-orientation, financial discipline and control, people's participation, a national level body for guiding and overseeing forestry development, etc). There is need for extreme care to avoid the pitfalls of 'trial and error' approaches and to evaluate the merits of alternative models through well designed pilot trials. This and other important issues may be

discussed and co-ordinated by a high-powered consultative and deliberative body comprising members from the central and provincial/district governments.

Conclusions

The regions in the Outer Islands will continue to be important for Indonesia's forestry development. However, its forestry and forest industry will undergo structural changes brought about by a decrease in forest area and an increase in demand for forest goods and services.

Plantation wood and small dimensioned materials will gain in importance as raw materials. Wood from non-traditional/non-forest sources will also be used, in larger quantities for industrial purposes. Solid wood will be increasingly replaced by re-constituted wood in end-uses, a sizeable proportion of it being 'alternate panel products'.

Environmental conservation and rehabilitation will be an important preoccupation due to its long-range implications on quality of life and welfare of the people. Man-made forests (as a means to rapidly increase timber supplies and to relieve pressure on dwindling natural forests), non-wood forest products (for community welfare and to reduce damage to the environment), manpower development (for ensuring implementation of sound forestry programmes) and research (to progressively improve the technology component of forestry development) will need to receive considerable attention.

Clearance of forests for agricultural development and other non-forestry purposes is inevitable. But this process must be strictly controlled. There is need to establish the extent of permanent forest estate as a percentage of the total land area.

Special and urgent attention will be needed for the conservation of genetic resources and bio-diversity. A system of protected areas, and controlled management of vulnerable forests for non-damaging or less damaging uses such as sustainable collection of non-wood forest products and eco-tourism are very relevant in this connection.

In view of the dynamic changes, technology and markets will adjust to the emerging situation, if guided by appropriate policy. Thus, while several of the forestry problems can be remedied by technological adjustments and improvements, lasting solutions can be brought about only through appropriate policies and strategies and institutional strengthening.

Sustained yield management is an ideal to be aimed at; its major constraint is not lack of technology, but the short term perceptions and time preferences of the investors, and inadequate concern on the part of policy makers and forest managers.

Sustainable forest management involves a package of inter-related components: appropriate forest land allocation including sufficient extent of protected areas; management of natural forests under sound silvicultural principles, and multiple use concepts; control of deforestation; increased afforestation/reforestation to reduce pressure on natural forests; efficient and waste-free utilisation of forest resources and promotion of lesser-used species; promotion of employment in forest based activities; rationalization of shifting cultivation; increase in added value

and retained value through policies related to industrial processing and trade; peoples participation, proper administrative arrangements and institutional instruments; and a realistic plan of investment. In view of the close linkages between these components, it is difficult to set strict priority among them. A balanced development of these components is needed.

The private sector plays an important role in managing the forests of Indonesia. To ensure good performance by the private sector in the State forests, the resources should be properly priced, continuity of tenure should be ensured, and agreed conditions and regulations should be strictly enforced. To this end, a system of performance bond should be introduced.

Producing forest goods for an expanding market from a decreasing resource is a difficult task. Research support is essential for developing intensive and environmentally-sound practices of forest management. Another vital factor is adequately skilled manpower to plan, implement, monitor and evaluate the programmes and projects.

Recommendations

The Mission Report deals with major issues affecting the forestry sector and provides detailed recommendations. In summary the recommendations are:

- Address illegal logging and other related illegal activities in forestry by appropriately invoking the provisions of laws and regulations supported and complimented by policy interventions and balanced incentives. Special measures should be introduced to protect conservation areas. A temporary ban on log exports (as a measure to curtail illegal export, if found necessary, and up to a maximum of three years), timber certification, and log audit are other measures which merit consideration. Recognition of community rights to forest resources is another important factor.

- Rationalise and reform the structure and functioning of forest industries (including closures where necessary): covering size, products, location, efficiency, and ownership; limiting to sustainable availability of raw material from stable sources, whether public or private; and removing perverse subsidies which encourages malpractices and financial improprieties.

- Develop/expand high yielding and efficiently managed forest plantations as the major source of industrial raw material, emphasizing on: suitable species and sites; economics of production and return on investment; appropriate incentives; community benefits and involvement; increased environmental values; control of potential malpractices in the use of land and loans such that the plantation programme supports sustainable forestry development; measures to rescue the troubled joint-venture HTIs, as appropriate; and establishment of a Forest Trust to support plantation development.

- Simplify and streamline valuation/pricing of natural forest timber (and other natural forest products) with a view to improve the capture of economic rent, to remove concealed subsidies, to limit windfall profits and to induce efficiency in forest resource use. Rent rate for natural pulpwood (IPK) should be increased significantly.

- Decentralise the forestry sector, within the broad provisions of the decentralisation laws, appropriate to the sectoral needs and special characteristics, and based on a well thought-out decentralisation plan – involving stakeholder participation and consultations; division and transfer of powers and responsibilities; formulation of clear and adequate rules and regulations and guidelines and norms for SFM; designing and installing of institutions with required skills and capability; an agreed system of allocation of revenues and revenue sources; co-ordination mechanisms and a system of monitoring and control. The Mission considers that, at this stage, decentralization should be to the provincial rather than to the district level. This can be done by invoking the provisions in the decentralization laws, which provides the mandate for macro-planning to the central government.

- Undertake appropriate measures/actions to address the issues linked to the contextual aspects in forestry, namely:

  - formulate and enforce a reformed National Forest Policy;
  - install appropriate and properly structured institutions to enforce the policies;
  - establish a mechanism for resolving land conflicts affecting SFM through legal means.
  - build skills and capability in forestry at local level and establish suitable human resource development programme(s);
  - improve forestry research facilities to support technology development, particularly the management of logged over forests.
  - formulate and implement a National Forest Programme with regional components (regional forest programmes) and detailed programme plans (e.g. forest plantations, forest industries, etc.);
  - undertake measures to mobilize funds for sustainable forestry development;
  - review the opportunities for incremental income and employment gains through capturing the non-market public values in the permanent forest estate.
  - develop special measures for dealing with: promotion of NWFPs, rationalizing of shifting cultivation, and forest fire management;
  - establish forest resource accounting system and rectify the existing accounting distortions;
  - institute co-ordination and monitoring mechanisms.

- Establish a high level National Forestry Council to function as a policy guiding, consultative and supervisory body.

Project Ideas

The Mission recommends several project ideas for international assistance in support of SFM in Indonesia. These have been explained to in the respective sections.

1. Policy studies and strengthening of policy analysis and planning capability in the forestry sector institutions in Indonesia.
2. Support for establishing a functioning process and framework for a national forest programming system (including regional forest programmes) in Indonesia.
3. Development and implementation of guidelines to control illegal logging in Riau and West Kalimantan.
4. Application of forest cover density monitoring – satellite imagery to verify illegal logging.
5. Preparation of a restructuring plan for forest industries in Indonesia.
6. Preparation of a plantation master plan for Indonesia.
7. A framework system for forest resource accounting in Indonesia.
8. Demonstration of decentralised and multi-stakeholder forest management models in selected regions of Indonesia.

A Word of Caution:

None of the recommendations would produce the desired result unless they are nourished by political will and leadership commitment and responsible action by all concerned, driven by a clear vision and proper mission.

1. INTRODUCTION

1.1 ITTO TECHNICAL MISSION

At its 29th session, held in Yokohama, Japan from 30 October to 04 November 2000, the International Tropical Timber Council (ITTC) adopted Decision 12 (XXIX), at the request made by the Minister of Agriculture and Forestry of the Republic of Indonesia, to organize a Technical Mission to assist the Indonesian Government for identifying ITTO support, especially in formulating a Forestry Action Plan to achieve sustainable forest management. Terms of Reference of the Mission is given in Appendix I.

Following formal consultations between ITTO and the Government of Indonesia and adequate advance preparation, the ITTO Technical Mission visited Indonesia, from 12 March to 6 April and from 10 to 21 September, 2001. The Mission, led by Dr. B.C.Y. Freezailah consisted of international and Indonesian experts with requisite experience. Details of mission members are given in Appendix II.

The Mission's activities were backstopped and supported by Dr. Efransjah of ITTO. At the country level the mission was assisted by, and had regular interaction with, a multisectoral counterpart team with 19 members headed by Dr. Boen M. Purnama. Details of the counterpart team is available in Appendix III.

The Mission benefited from the documentation of background information and analysis carried out in advance by the national experts. The program of the Mission in Indonesia consisted of: interviews and detailed discussions with professional and political leaders, government officials, IDCF, NGOs, donors, academics and eminent personalities, representatives of wood industry and community leaders; visiting forestry and forest industry activities in the province of Riau, and studying existing reports / literature relating to forestry in Indonesia. The Mission's programme in Indonesia is given in Appendix IV. A list of persons with whom the ITTO Mission held discussions can be found in Appendix V.

Based on information gathered and insights gained on the forestry situation in Indonesia, the Mission prepared a report of its findings and recommendations. Summary of the report was circulated widely among stakeholders and interested parties for comments. It was further discussed at workshops and meetings with NGOs, donors, industry associations, IDCF and the national counterpart team. Based on the comments received, the report was revised and adopted by the Mission, as presented here.

1.2 COSTS AND BENEFITS OF FORESTRY'S CONTRIBUTION TO DEVELOPMENT

For more than 30 years, the Government of Indonesia pursued an aggressive and seemingly successful development policy. But the economic crisis wracking the country today is one signal that much of that success has been achieved through a relentless over-exploitation of the country's rich environmental assets far beyond their capacity that promise to rapidly deplete them (Runyan, 1998).

Some eighty percent of the virgin forests have been logged. There is a great deal of uncertainty concerning the productivity of the second growth forests, which in turn has serious implications for future economic supplies of timber.

Forest and forest industry sectors have supported and contributed to socio-economic development in Indonesia. In terms of direct employment, the sector accounted in 1990 for about 1.35 percent of the labour force; if indirect employment attributable to forestry and employment in the informal sector of forestry are added, the percentage will increase to 5.4 percent. During 1990 – 1995, some 2.5 million Indonesian citizens were employed in activities related to timber industry alone. Directly and indirectly, it provided livelihood for some 4 million families. The recorded contribution of forest royalties to the national budget was US$ 65 million in 1997/1998, while the gross total of royalties and other government revenues from forest operations exceeded US$ 1.1 billion per annum (FAO,1998b; Nasendi, 1997).

The recorded contribution of forestry and forest industry sector to national income in 1987 was 2.7 percent. Just prior to the economic crisis in 1997, total output from forest-related activities was about US$ 20 billion or about 10 percent of GDP; contribution of wood **alone** to GDP was about US$ 8 billion, 4 percent of the total. In the pre-crisis period, exports related to natural forest resource served as an engine of economic growth. Forest-based exports (of plywood, furniture, pulp/paper etc.) rose from around US$ 200 million in early 1980's to about US$ 8 billion per annum in the mid–1990s (Runyan, 1998).

In order to realise the above benefits, the cost incurred appears to be disproportionally high, **in effect** nullifying or reducing their positive impacts. The state of the nation's forests is now very poor, marked by increasing rate of deforestation, erosion of biodiversity, land disputes, poor spatial planning, and low productivity.

Reports show that deforestation has been happening at an average rate of 1.7 million hectares per year between 1985 and 1998; the current rate of deforestation may even be higher, in the order of 2 million hectares (Walton, 2000). FAO (2001), however, estimates an annual forest cover reduction of 1.3 million ha during 1990-2000. Mounting evidence also suggests that the forest area has been reduced not only in extent, but also in quality, more than ever before – caused due to a variety of reasons: illegal and excess fellings, fires, shifting agriculture, and land clearance for non-forestry purposes. The problem is not deforestation ***per se***, but the lack of control of land-use, and inadequate regard for appropriate land-use, based on land capability and concepts of environmentally as well as socially and economically **sound** development.

Since the early 1980s forest fires have become a major concern and wild fires have devastated large chunks of Indonesian forests with surprising regularity. During the two spells of wild fires between September 1997 and May 1998 an estimated 9.7 million ha of land was burnt (BAPPENAS / JICA / ITTO, 1999).

The root cause of the malady facing the forestry sector has primarily been institutional inadequacies – lack or weaknesses of policies, plans and implementation strategies including incentive mechanisms, monitoring and evaluation and enforcement of legal provisions and regulations.

1.3 CRUCIAL CONCERNS

Indonesia still has a sizeable forest resource of variously disturbed natural forests, and land suitable for forest plantations. It is necessary to urgently seize the opportunity to put back the forest resources of the country under a proper system of management and governance. The Government of Indonesia has realised that the errors of the past must not continue in the future (GOI, 2000d).

The 1997/1998 economic crisis served to provide an impetus for such a change, and an opportunity to reassess the direction of Indonesia's natural resource policies.

In view of the deteriorating situation in the forestry sector, the World Bank included forestry in the agenda of CGI for the first time, at its annual meeting in Paris in July 1999. In response, Indonesia announced its commitment to take immediate action on an eight-point plan to improve forest management, at the 9th CGI meeting held in Jakarta, in February 2000. This was later codified in a Presidential Decree (Kepres 8/2000), creating an Inter-departmental Coordination Forum (IDCF) to co-ordinate the multi-sectoral actions that need to be taken to achieve sustainable forest management. IDCF met in July 2000 for the first time. A series of 5 workshops designed to allow stakeholder discussions on the issues were held in the following months. The number of Government commitments were increased to 12 items[1] and a task force was also setup to prepare a National Forest Programme.

A specific objective of the Government of Indonesia in the forestry sector is to develop a new forest management *paradigm change, from timber management into ecosystem management,* based on principles of decentralisation and a participatory multi-stakeholder process.

At the 10th Session of the CGI, held in Tokyo during October 2000, Indonesia submitted the proposed plan and made commitment towards implementation of SFM after establishing operational details and guidelines. As may be noted (Appendix I), the five interrelated items/issues included in the TOR of the ITTO Technical Mission, namely: **illegal logging; restructuring of forest industries; forest plantations; recalculation of timber value; and decentralisation are the core** of the 12 items of commitment of the Government of Indonesia.

1.4 THE CONTEXTUAL ASPECTS

The issues and measures to address them are to be appraised and acted upon in the context of the need for a strong and comprehensive National Forest Policy and an appropriately designed National Forest Programme.

[1] The 12 items, involving 112 actions are: reduce / prevent illegal logging, especially in national parks; speed up and complete national forest inventory; establish moratorium on natural forest conversion (till NFP is agreed upon); restructure forest industries; close down financially sick forest industrial units; link reforestation with wood industry capacity; recalculate timber values; implement decentralisation and devolution of powers to Bupati level; control forest fires; prepare and implement a national forest programme; improve tenurial systems; and establish proper-forest management systems.

1.4.1 Reformed Forest Policy

A forest policy specifies the imperatives, principles, objectives, and measures and strategies for achieving the stated objectives. The imperatives are not options; they are absolute requirements, which reflect the objectives and the pre-requisites of "sustainability". In as much as they recognize that the public interest takes precedence over private rights, they are part of the Constitution, which is the Supreme Law of Indonesia. The indicated imperatives of Indonesian forestry are **protection, production and participation**.

The Forest Principles adopted at the UNCED in Rio de Janeiro, 3-14 June 1992 has stressed that forestry issues and opportunities should be examined in a holistic and balanced manner within the overall context of environment and development, taking into consideration the multiple functions and issues of forestry as well as the potential for development that SFM can offer. Some of the common principles are:

- Integrated approach to land use
- Maintaining ecological processes and balance
- Conservation, management and sustainable utilisation of biological resources
- Enhancing multiple functions and uses of forests
- Recognizing the option and existence values of forests
- Satisfying the needs of people for forest goods and services
- Recognizing the rights of local communities
- Supporting national food and environmental security
- Contributing to increased social welfare and socio-economic equity.

The long-term goal of forestry (e.g. sustainable forestry development) is more explicitly defined by specific categories of objectives and related policy measures. Specific objectives may, among others, include: protection of existing forests; expansion of forest area; improvement of forest productivity; protection of wild flora and fauna; efficient and waste-free harvesting; community welfare and provision of increased socio-economic benefits to people; institutional strengthening and so on. Achievement of policy objectives will depend on how effectively policy measures are adopted and implemented. The measures among others could cover classification of forest resources; inventory of wood and non-wood resources; prescribing annual allowable cut; implementation of improved forest management systems; reduced impact logging; people's participation; forest plantation establishment; protected area system; training facilities; monitoring and evaluation.

Forest management through logging concessions to private entrepreneurs following TPI and TPTI was a policy measure of over-riding significance relating to production forestry in Indonesia, which unfortunately did not prove to be adequate or appropriate to achieve SFD. Policy packages to ensure management and exploitation of the natural forest by the private sector in a desirable fashion are, often difficult to implement. Forest concession policies, such as the size of concessions, duration, evaluation criteria, review and approval systems, renewal of concessions, royalty and other payments, systems of revenue collection, infrastructure

development, management and logging plans, demarcation of boundaries and standard management sub-divisions, overlapping rights and penalties for non-compliance would need to be constantly reviewed and reformed to ensure that practices conform to the Government's development goals. This has not been done with any seriousness. The vision of logging concessionaires on sustainable forestry did not go beyond 15 to 20 years and did not include any deliberate action to prepare and nurture second growth or new forests to produce commercial timber harvests in the future.

Indonesia's forest policy is to be viewed from its two sides – conceptual pronouncements and practical performance, in order to assess the inordinate gaps between the goals and the achievements. Indonesia's Basic Forestry Law of 1967 (UU 5/1967) was also the policy, which was periodically supplemented by statements contained in the national five-year development plan documents (*Repelitas* and also in *Renstra* 2001-2005), and pronouncements of the Head of State and Ministers made on special occasions. UU 5/1967 has now been replaced by UU 41/1999. In 1990, Indonesia enacted UU 5/1990 on Conservation of Living Resources and their Eco-systems. Indonesia, over the years have committed to the environmental objectives of international organizations such as UNEP, ITTO, FAO, and UNESCO; to the declarations of the World Forestry Congresses; to the World Conservation Strategy; to the UNCED Forest Principles and Agenda 21; and to the statements of IPF/IFF. It is a signatory to significant world conventions such as CITES, CBD, and UNFCCC. Indonesia formulated a Forestry Action Plan in 1991 (which was not fully implemented); it has established LEI; and setup a co-ordination body – Consultative Group on Indonesian Forestry (CGIF). Following the UNCED, Indonesia brought out a large number of decrees and guidelines on SFM and C&I.

In spite of the noble intentions expressed repeatedly and variously, actual achievements have been disappointing, evidenced by the current situation in the forestry sector: illegal logging and encroachments; continuing and increasing deforestation and land degradation; loss of bio-diversity; increasing occurrence of forest fires; denuded watersheds; truncated parks and protected areas; failed forest plantations; unprofitable investments; indifference of concessionaires to SFM.

Policy analysis and evaluations carried out by several international agencies have revealed that institutional failures, inertia and pervading corruption are the prime causes for the undesirable condition of the forestry sector.

1.4.1.1 Suggestions Galore

The Mission received a large number of suggestions from a wide range of stakeholders, institutional representatives, donors and concerned citizens regarding the reforms needed in the policy front. The Mission also consulted a number of papers and publications related to Indonesian forest policy (Walton, 2000, Haeruman, 2001, MOF/GO1, 2000a). In listing some of those suggestions, which are somewhat overlapping, the intention is to **boldly underline the urgent need to review and reform the forest policy** of the country:

- Review the current forest landuse classification and re-establish new and realistic targets for total forest estate, production forests, plantations, protected area system (parks and nature reserves), community woodlots etc.

- Review the current system of forest production management under logging concessions; diversify production management by introducing new/improved systems.
- Introduce moratorium on logging in natural forests and facilitate import of logs to meet the supply gap.
- All types of forests to be brought under a system of management plan; establish model/demonstration FMUs; adopt the holistic concept of ecosystem management; promote NWFPs and forest (environmental/recreation) services and integrate them in the overall system of forest management.
- Support and promote social forestry, trees outside forest and non-forest sources of wood (such as rubber and coconut plantations).
- Promote reduced impact and waste free harvesting and utilization of harvest residues.
- Support forest-based rural industrialization and downstream processing for improved value addition; develop efficiency measures for wood processing industries; promote entrepreneurial involvement of private sector in the forestry sector.
- Reform, strengthen and streamline forestry institutions at all levels.
- Provide greater support to forestry research and technology development.
- Improve incentives for sustainable use of timber by: (a) moving log prices to international levels, (b) raising the share of forestry revenues received by the government with the intention of optimising rent capture, and (c) reviewing the need for continued subsidies of forest plantations; appropriately link trade policy instruments with incentive policies in forestry.
- Treat indigenous people as social assets and integral elements of Indonesia's forestry development; analyse and evaluate forest related rights and privileges and tenurial system to assess the nature and extent of reforms required and to implement such reforms.
- Establish intensive multi-stakeholder consultations as a necessary prerequisite for forestry planning and implementation; ensure advance consultation with forest-dwelling communities affected by forest development projects, and put in place mechanisms to ensure equitable participation in the benefits, including possible joint management of regenerating areas based on traditional resource management systems.
- Institute a regular and mandatory system of forest valuation, rent calculation and forest resource accounting within the overall purview of SNA.
- Develop more effective long-term mechanisms for interagency coordination in forestland conservation and development.
- Wherever a specific aspect of forestry need elaborate policy attention, formulate "sub-policies" linked organically to the "parent policy" – examples: policy on forest

tenures; policy on forest plantations; policy on non-wood forest products; policy on fire management.

1.4.2 Planning and Programming

Planning is concerned with the ways and means of achieving policy aims. It is influenced by the resources/means available. Planning involves choice of one option in preference to another. Planning prepares a set of decisions for organised and structured action in the future, within a defined time frame, directed at achieving goals by optimal means. The process of planning thus involves among others, fact finding, consultation, information gathering, detailed analysis of situation, problem identification, assumptions about future, preparing projections and outlook analysis, goal setting, evaluation of alternatives and identification of options, establishing horizon and cycle of planning, sequencing of activities and scenario setting, investment analysis and decision regarding preferred scenario.

The process of planning is a continuous one and involves regular monitoring and evaluation for assessment of progress and for necessary "course direction". The monitoring function is allied to planning, but may be carried out independently (often as a third party evaluation/audit) depending on the specific situation. Changes in policy objectives are to be reflected in the plans. Planning is more effective when it is undertaken as a participatory process, accommodating the relevant socio-political views to the extent feasible.

Indonesia has an experience of about 30 years in economic development planning. Between 1969 and 1999 Indonesia's planning followed the system established by President Suharto's "New Order" administration.

Indonesia's development strategies and policies were incorporated in three types of plans: the long-term plan (covering a period of 25 years), the medium or five-year development plan (the Repelita) and the annual plan. The long-term plan provides broad development goals and guidelines, while most policy packages are associated with the five-year development plan. The National Development Guidelines (GBHN) indicate in broad terms the national development plans, including the management of forest resources. In the first five-year development plan (Repelita I, 1969/1970-1973/1974) forestry was a sub-sector of agriculture and the goal was to support agriculture. For the first three Repelitas, the main objective of forestry policy was the development of forest-based and agricultural industries. In Repelita IV (1984/1985-1988/1989), the development of downstream forest industries, rehabilitation and improvement of the potential of forest resources through reforestation and enrichment of natural forest stands, and critical land rehabilitation were emphasized. In Repelita V (1989/1990-1993/1994), food self-sufficiency, increased agricultural production, improvement and conservation of forest, and critical land rehabilitation were major goals. The second long-term development plan began in 1994/1995 and was to go on until 2019/2020. Under the second long-term development plan only one five-year development plan (Repelita VI 1994/1995-1999/2000) was implemented. In Repelita VI emphasis was given in the forestry sector to sustainability, conservation and peoples' participation.

1.4.2.1 Indonesian Forestry Action Plan

Indonesia contributed to the global initiative of Tropical Forestry Action Programme (TFAP), established in 1986. The Forestry Studies project (1989-1991) in Indonesia led to the

formulation of Indonesian (Tropical) Forestry Action Plan (IFAP), which was approved by the Government in November 1991. Following the procedure specified in the TFAP process, an international round table (Type III) was organised in February 1992. The meeting was a great success and resulted in strong donor commitment to support the IFAP. However, in terms of action, there was little progress.

Considering the new directions for development contained in the second 25 year long-term development plan, and the developments which had taken place since the drafting of the IFAP, including the Earth Summit (1992) and the related global initiatives, the Government of Indonesia decided to review and revise the IFAP document, in the middle of 1994. The revised IFAP document consisting of two parts, Country Brief and Project Profiles, were approved in November 1995 and it included 8 programmes: Forest Resource Inventory and Land Use Planning; Management of Natural Production Forests; Management of Forest Plantations; Forest Based Industries and Marketing of Forest Products; Social Forestry and People's Participation; Biodiversity Conservation and Ecotourism; Management of Watersheds, Protection Forests, Wetlands, Coastal Areas; and Institutional Strengthening.

Again, the exercise did not lead to any tangible development action. During 1997-1998 Indonesia adopted a National Case Study Framework for implementing the IPF proposals for action and it turned out to be a theoretical exercise. Over the last several years the forestry sector in Indonesia moved from one crisis to another and the sectoral situation continued to deteriorate.

1.4.2.2 Propenas and Renstra

Following the fall of the Suharto regime, after the completion of VIth Repelita, the 5-year Repelita system was replaced by a 3 year Propenas (Program Pembangunan Nasional - National Development Programme). The system of perspective planning was also discontinued. Propenas is essentially a national rolling budget plan. Sectoral planning is now being taken up as s separate exercise. The current forestry sector strategic plan is Renstra 2001-2005, covering a period of five years. It indicates 4 goals (improved quality and productivity of the forest resource; reduced rate of forest resource degradation; implementation of efficient, fair and sustainable forest management system; and increased contribution of forest resources to the nation's economy and community's prosperity) and 6 programmes (forest and land rehabilitation; forest protection and nature conservation; optimisation of forest function and utilization; consolidation of pre-conditions for forest resource management; institutional development and promotion of community services).

As far as the Mission could gather, for the last few years, most programmes in forestry sector have not been implemented fully or properly. And, this has led to the assertion that a **paradigm shift** is called for, through a new NFP. How the new paradigm and the new NFP will serve forestry depends on institutionalized commitment to see through its implementation.

1.4.2.3 National Forest Programme

It has been officially stated that the government will use the National Forest Programme process to develop a new forest management paradigm. This, however, is yet to happen.

The concept of national forest programme was developed as part of the follow-up of the UNCED decisions by the international forest policy dialogue within the *UN-ad-hoc* Intergovernmental Panel on Forests (IPF). National forest programmes are a comprehensive policy framework towards management, conservation and sustainable development of all types of forests, based on a set of specific principles and elements. They comprise a broad inter-sectoral approach to forest development at all stages, including the formulation of policies, strategies and plans of action, as well as their implementation, monitoring and evaluation. They should be implemented in the context of each country's socio-economic, cultural, political and environmental situation. They should be integrated into the country's sustainable development strategies and into the wider programmes for sustainable land use, in accordance with the results of UNCED, especially Chapters 10 to 15 of Agenda 21, and the Forest Principles.

The NFP in Indonesia is envisaged to become a vehicle for a national discussion of what should be done about Indonesia's forest. The NFP should be prepared through a participative (multi-stakeholder), interactive, gradual and bottom-up process. It should go through consultation with the local community, and use a language understandable to the local community. It is necessary to differentiate between the central government, local government's and community's domains. As has been pointed out by the World Bank, since NFP is meant to be implemented with immediate effect, it is also necessary to appreciate the ground realities. For example, the powerful industry sector especially the one which has (whatever its faults may have been) delivered large amounts of foreign exchange into the Indonesian economy, cannot be simply eliminated and replaced overnight. The complexities of entitling communities to forests, no matter how justified and urgent, cannot be rushed: even in countries where community title to large forests is an undisputed fact and has been in existence for years, or even centuries, the complexities, disputes and failures to benefit some people within the community groupings have been serious and potentially destructive of the whole idea.

A key task, at this early stage of reform, is to seek agreement from as many interest groups as possible, in as much detail and precision as possible, on what the new paradigm for forests is to be, and what the vision and mission of the sectoral participants should be. It is further to be highlighted here that NFP is based on the "sector" concept of forests.

In broad terms forestry sector planning should: (a) facilitate the articulation of attitudes, values and expectations regarding forestry in the broadest sense; (b) raise questions about the information required to protect and manage trees and forest; (c) define strategies to resolve conflicts or potential conflicts in forest use; and (d) specify the inputs and resources needed by programmes to move in the directions indicated by planning. The approach to forestry planning and the results produced should be transparent to the public (UN-CSD, 1996). Forestry-sector planning covers all the linkages between a country's forests (or total tree cover) and the aggregate of its human institutions.

The elements of NFP, among others, include: a national forest statement; sector review; objectives and strategies; policy and legislation; institutional reforms; investment programs; capacity building; action plans; financing strategies; monitoring and evaluation and coordination and participatory mechanism. In the decentralised situation, it is necessary to prepare Regional Forestry Programmes (RFPs) for each of the component autonomous territorial units. Adequacy and transparency of data/information are important in this regard.

The responsibility for formulation of detailed NFP has been assigned to IDCF established by Kepres-80/2000. IDCF, however, is not supported by a permanent secretariat or full time specialist staff. The members serving IDCF have full time jobs elsewhere and time available to be devoted to NFP preparation is very limited. This applies to task forces dealing with specific issues. Task force approach becomes appropriate only if it is serviced by a full time expert group or secretariat.

The skeleton NFP of Indonesia, with tabulated vague actions, under 12 issues does not meet with the criteria established by IPF/IFF and it is not in a form or substance capable of attracting investment. Concerns were voiced at the recent CGI meeting in Yogyakarta in April 2001 that the IDCF has functioned inappropriately, responded very slowly to on-going issues, and showed no capability to properly handle the commitment made by GOI to CGI in Jakarta in February 2000. (Media Indonesia-Ekonomi, 24-04-2001).

Several immediate actions are necessary, such as: establishment of a secretariat for NFP; create a multi-stakeholder forum for discussing the NFP processes; establish partnerships on different levels in order to create synergies; develop standards and criteria for sub-national forest programmes. **The NFP system needs to be institutionalized (preferably within a sectoral institution with full access to information), and it will be advisable, initially at least, to undertake the task as a full-fledged project.**

Since many of the programmes included in the NFP/RFP are of substantial size and nature, it is often necessary and advisable to prepare separate plans for such programme areas (e.g. Forest Plantations, Forest Industry Development, Research and Technology Development, Non-wood Forest Products, Forest Fire Management, Bio-diversity Conservation, Eco-Tourism).

Also, to enhance planning capability in forestry, an important requirement is the establishment of a strategic planning unit attached to the highest possible level of decision-making, to guide and support SFM. Such a unit should have the capacity to do rigorous policy analysis, critical to the establishment of the future direction of the sector. It should lay the foundation for setting guidelines and norms for forest management and industrial development in the new decentralized environment. Such a unit would also be the major decision support relating to the forestry sector. One of it's major responsibilities will be to support development and implementation of *National Forest Programme*. The Mission feels that the trained human resources required for such a unit is already available.

1.5 PROJECT IDEAS

Two suggestions are made here, to help provide the appropriate environment for addressing the core issues. One is on "policy studies and strengthening of analysis and planning capability in the forestry sector institutions in Indonesia." The other is to provide "support for establishing a functioning process and framework for a National Forest Programme system (including Regional Forest Programmes) in Indonesia."

1.5.1 Policy Studies

So much has happened in the forestry sector of Indonesia during the last fifty years. Many of the developments have set precedents, badly affecting the sustainability of Indonesia's forests. In the wake of the new trend towards decentralization and empowerment of the community, it will be greatly advantageous to conduct a detailed policy analysis and to develop a revised/reformed set of policy prescriptions for forestry.

It is to be borne in mind that in the wake of decentralization there is need for specific transitional measures to prevent confusion, abuse and further disruptions in the forestry sector. The project will involve: analysis of policy environment; research on major policy issues such as illegal logging, forest rent capture and tenurial rights; evaluation of past policies and their implementation; policy instruments and their impacts on the sustainability of forests; development of imperatives, principles and objectives of the new forest policy; proposals on policy measures and strategies; discussion and articulation of the proposals and submission of a recommended policy to the Government; capacity building for undertaking policy-related activities.

1.5.2 Framework for a NFP System

Apart from establishing a NFP process and framework, the project will have the following components: sectoral analysis in the background of democratic decentralisation; identification of problems and defining of objectives; outlook analysis and scenario building; programme definition; framework for component regional plans; plan preparation; establishing and strengthening information system; capacity building.

Box 1

ACTION PROPOSALS ON POLICY AND PROGRAMMES

- Establish a new and reformed forest policy and a comprehensive set of rules and regulations to support decentralized forest management.
- An adequate system of planning (sectoral, programme and project) should be established in all the forestry sector institutions in the country.
- Make a continuous system of resource development planning, including periodic evaluations, a statutory requirement at the National and Regional levels.
- Prepare and distribute C&I guidelines for SFM of different categories of forests.
- Formulate and implement a comprehensive National Forest Programme.

2. CURBING ILLEGAL LOGGING

2.1 REVIEW OF THE SITUATION

Among the illegal practices in forestry, the most serious and conspicuous, probably, is illegal logging. Illegal logging involves harvesting of logs in contravention of the laws and regulations specifying: where, how and how much to cut; scaling, log classification, transportation and utilization; payments of charges (of royalties, levies, taxes, fees etc); and measures to ensure sustainable forest management and sustainable forest utilization. The laws (and related regulations) are designed to prevent over-exploitation (beyond the specified AAC), leading to loss and degradation of the nation's forest capital.

The existence of laws by itself is no guarantee that illegal activities will be prevented. There should be mechanisms which are effectively, and perceived to be, efficient and judicious. The tendency to disobey the laws develops, and is sustained, if it provides undue advantage to the law-breaker, and if the system (inefficient and/or corrupt) allows such elements to get away with it. It generates a sense of immunity in them.

2.1.1 Nature and Magnitude of the Problem

Reports about the rampant illegal logging in Indonesia is highly revealing and disturbing – indicating practices of cutting outside the prescribed intensity and size classes, cutting protected species, cutting in protected areas, cutting outside concession boundaries, unlicensed logging by small scale operators, under-declaration of harvest volumes (in term of species classes and size classes), transfer pricing and other means of royalty avoidance. Illegal logging ignores all functional categorization of forest and it takes place not only in production forests, but have spread to conservation forests, protected areas including sensitive watersheds, and national parks (Purnomo, 2001). Furhter, decentralization has blurred the boundary between legal and illegal logs.

There are two broad types of illegal logging in all categories of forests. The first and most devastating type result in conversion of the forest mainly into oil palm plantations, causing total annihilation of biodiversity. Although illegal, being abuses of land conversion licences, there is often an implied and misplaced acceptance of legality to such conversions. Consequently, these activities are conducted openly. The second type of illegal logging is direct timber theft for commercial purposes, which is often conducted under secretive operations, frequently with the backing of rogue elements of the enforcement apparatus (army, navy, police and forestry officials). This category also includes uncontrolled over-logging inside logging concessions, re-logging in expired concessions, and logging outside concession areas. Some of these thefts are supported by falsified official documents or fake documents, and others by improper manipulation of government policies (FLB,1999; MOF/JICA/EU, 2000).

Illegal logging is now recognized as one of the most critical problems of forestry and forest industry in Indonesia. Reports indicate that illegal logging in Indonesia has far exceeded the legal production. Estimates of quantity of illegal logs involved vary considerably and range

from 25 to 57 million cu.m annually, from 52 percent to 70 percent of total log production. The EU/MOF Forest Liaison Bureau Newsletter 3/2000 estimates that 50 million cu.m. of wood consumed in 1999 came from illegal sources. Some claim that cross border smuggling alone may account for about 10 million cu. m. In 1998 illegal log production, in a total production of 77 to 79 million cu.m, amounted to an estimated 57 million cu.m., while the AAC for Indonesia was of the order of 20 to 22 million cu.m. (Callister, 1992; Telapak, 1999; Scotland et al, 1999; Dudley, 2000).

The World Bank had estimated that, based on 1980 tax rates, if all timber taxes had been collected, the government could have received an extra US$ 1.2 billion over the period 1980 to 1985 (Walton, 2000). The amount seems to have grown to about US$ 2.0 billion per annum in 1998/1999, without considering the losses in terms of ecological costs. Some estimates place the total annual loss to the country from illegal logging at about US$ 3.5 billion (EIA, 2001; World Bank, 2001). As an indication of disrespect to the law, cases have been reported where companies refused to pay fines for violations in timber operations, amounting to millions of dollars (Runyan, 1998).

Apart from the outright loss of forest cover, illegal logging, which ignores scientific management needs, and carried out against all principles of silviculture, leads to increasing degradation of the forest resource in terms of quantity and quality of stocking, species composition, regeneration, and site quality/productivity, affecting sustainable supply of quality logs in the future. Some reports (WFC, 1997) indicate that of the remaining natural forests in Indonesia, 38 percent of national parks and conservation areas, 46 percent of protection forests and 30 percent of production forests have already been degraded. The ecological fallout of the illegal logging and the resulting forest degradation is reflected in the erosion of biodiversity, depletion of wildlife resource, climate change etc. Forest plunder in Indonesia seems to have particularly affected the integrity of national parks and the protected area system.

2.1.2 Influencing Factors and Agents of Illegal Logging

The factors influencing the initiation and spread of illegal logging can be grouped into two: direct or active, and indirect or passive.

2.1.2.1 Direct Causes

The direct causes include the following:

- Un-met demand for logs. The production capacity of wood industries exceeds the capacity of the forest for producing wood raw material in a sustainable manner, both from HPH and HTI, thus stimulating illegal logging. There is also a feeling that the AAC is an over-estimation considering the current degraded condition of the forest. The unrestricted expansion of export-oriented wood processing industry has over-stretched the sustainable supply of timber. Also, since the formal arrangements for wood supply cater only to the needs of export-oriented units, domestic needs have to be met largely by illegal logging. The thousands of illegal sawmills that have sprung up all over the forest areas have exacerbated the situation. Thus, the improperly planned development and the defective structuring

of the wood-processing industry coupled with lack of controls have been responsible for the serious supply/demand imbalance.

- High profitability of illegal logging operations. Since illegal logging avoids payment of due charges, and does not spend on planning and infrastructure, the delivered cost of illegal logs is much cheaper than that of legal logs. Since this margin is shared by the sellers and buyers of illicit logs, the operation tends to be highly profitable to both the parties, providing an incentive to perpetuate the system.
- The Greed Revolution. It is the hyper greediness of investors that often prompts them to embark on the highly lucrative illegal activities and in that process to mobilize the unscrupulous elements in the relevant government agencies, business and local citizenry.
- Weak law enforcement. This is partly due to the remoteness of the areas where illegal logging takes place, but mostly due to the willingness on the part of the law enforcing agencies to cooperate or collude with illegal operators, or their lack of courage to take deterrent action.
- Availability of ready market for illegal logs abroad. EIA (2001) has provided a detailed discussion of foreign markets and trade routes for the illegal logs from Indonesia.
- Unrealistic assumptions of conversion rates used by the companies to funnel-in illegal logs.

2.1.2.2 Indirect Causes

There are a large member of indirect causes; some of the important ones among them are the following:

- Low risk of illegal operations. Lack of adequate policing and supervision of logging activities, poor record of prosecution and conviction of cases, inadequacy of records (e.g. boundary maps, agreement conditions, details of location of crime) etc., have emboldened the illegal loggers to carry on and expand their activities (MOF/JICA/EU, 2000). The situation is made worse by ambiguities in the laws and regulations, loopholes in HPH agreement, insufficient development of staff for crime detection, dereliction of duty and/or conflict of interest on the part of protection staff, lack of interest on the part of local citizenry to prevent illegal practices, inadequate cooperation among law enforcement agencies, delays in judicial action and the influence of bribery and corruption.
- Rural poverty and unemployment. About 60 million Indonesians are dependant on forests, in varying degrees. Most of them live in poverty. Unscrupulous investors play on their poverty and provoke the people to do illegal logging (Runyan, 1998).
- Conflicting land use policies (e.g. estate crops versus forestry).
- Lack of coordination among related sectors (e.g. agriculture, industry and forestry) in their policy decisions and actions.
- Tenurial anomalies at the local level.

- Lack of public interest initiatives on the part of civil society.

2.1.2.3 Actors and Accomplices

The direct and indirect causes of illegal logging somewhat corresponds to the roles of the main actors and accomplices respectively.

The main actors involved are the following:

- Illegal log buyers. This group includes illegal sawmills, legally established wood-processing units, domestic and foreign buyers and some concession holders.
- Concession holders. In 1995 there were 584 logging concessions in the country. But that number is misleading. About 50 corporate groups control these concessions and dominate the sector. And these conglomerates are said to be in the hands of just 35 players (MOF/JICA/EU, 2000).
- Investors looking for quick profit, for whom legality is not an issue. *Illegal logging and operation of illegal saw mills in national parks represent the worst and starkest situation.* Reports show that Kerinci National Park alone had 111 illegal sawmills.
- Businessmen, domestic and foreign, who collude in cross border trade and export of illegal logs.
- Unscrupulous elements in enforcement agencies who support and protect those involved in illegal logging.

The accomplices are minor players and include: poor and unemployed people looking for some income, disadvantaged and disenfranchised tribal community, jobless and disillusioned youth, local community leaders, transport agents, and distributors of illegal logs.

For the actors, illegal logging provides an avenue for satisfying their urge for quick and maximum profit; for accomplices it provides a (often the only) source of livelihood. Once the illegal logging becomes unprofitable, the main actors will withdraw from that activity. And, once there are other less risky and noble ways to earn a livelihood, the accomplices will also not be interested in illegal logging. This gives a clue to the nature of action required to address illegal logging.

2.2 ISSUES

Illegal logging is a serious aberration and it distorts all efforts at attaining SFM. The thriving illegal logging in Indonesia raises several issues:

2.2.1 Ineffective Law Enforcement

Ineffectiveness of law enforcement primarily results from the lack of will to do it, which in turn can result from or be supported by a number of factors such as lack or inadequacy of institutions, unrealistic laws and regulations, inadequacy of the system to follow through the due process, lack of respect for law caused due to its misuse by authorities and/or breakdown of law and order, exacerbated by KKN (korupsi, kolusi dan nepotisme).

2.2.2 Deficiencies of logging concession (HPH) system

The serious flaws of the HPH system appear to be the source and strength of illegal logging in Indonesia. Unless these flaws are fully removed and alternatives devised and put into practice, it will not be possible to mitigate the scourge afflicting Indonesian forestry.

The pervading deficiencies of the logging concession system cover several aspects of silvicultural management, concession period and prescribed felling cycle, size of concessions, royalty and charges on wood, supervision and monitoring. These in turn facilitate or contribute to illegal logging practices (Barr, 2001).

2.2.2.1 Institutional Problems

Under the concession system, management and extraction of forest resources are entrusted to the private sector on the basis of mutually agreed terms and conditions for achieving the forest policy and management objectives. In countries where forests are publicly owned, concession system has been practiced as an alternative institutional arrangement for managing forests. Normally, concession arrangements are resorted to when the resources at the command of the government to manage forests are inadequate or the government opts to keep the size of public institutions (i.e. PFA) small and to entrust scientific management of forests under prescribed norms to competent private entrepreneurs. The concession system can be used for managing natural forests under different silvicultural systems, for raising and managing forest plantations, and even for managing conservation areas.

Other alternative arrangements adopted in the Asia-Pacific region include direct management of FMUs or Forest Divisions by public sector institutions (e.g. Government Forest Departments); contractual arrangements for carrying out specific forestry operations (e.g. logging and transport of marked trees to timber yards); management of forests by co-operatives and communities, and variations of these. Often, one can see a mix of these arrangements, to suit the specific needs and situations.

Indonesia granted the first forest (logging) concession in late 1960s as per the provisions in UU 5/1967, when the Government Forest Department was part of the Ministry of Agriculture, lacking the human resources needed to manage the vast forest estate of the country, and the country needed to mobilize capital to initiate development programs. The number of concessions steadily increased from 45 in 1970, covering an area of about 5 million ha, to 584 covering a total area of about 68 million ha, by early 1990s. Recorded production of industrial wood increased from 5.6 million cu.m in 1965 to about 47.3 million cu.m in 1990 leading to development of forest industries based on supply-push. *Currently, HPH is the sole system of forest management in Indonesia, outside Java.*

Assessment of concession performance by MOF in the past (GOI/FAO, 1991b) had indicated that only less than 20 percent of the concessions maintained an acceptable standard. Over the years, some 128 concessions are reported to have been cancelled. But this does not seem to deter the operators, as the groups which control several concessions have their own ingenious ways of circumventing the official orders and regain control of the area.

The irregularities happening in the concession forests can be categorized as inadequate management, mis-management, and illegal logging. Some examples of inadequate

management are lack of (and non-maintenance of) concession and FMU boundaries, lack of fire protection measures, lack of maps and inventory information. Mis-management can be seen in the removal of trees against silvicultural principles, causing damages to the standing crops and degradation of site. Another aspect of mismanagement involves advance cutting from areas outside the prescribed felling area, which is facilitated by the anomaly of awarding an area, to be managed on a cutting cycle of 35 years, for a concession period of only 20 years.

Local groups and NGOs claim that illegal logging happens with the connivance of the concession holders and that some 60 to 70 percent of all illegal logging happens inside HPH. Concessionaires, however, claim that they are the victims of circumstances and they have no control over illegal loggers.

2.2.2.2 Social Problems

The social problems generated by the logging concessions include the neglect/rejection of the traditional rights and privileges of the local community, and the social tensions emanating therefrom. This tension in turn has prompted the local communities to join hands with, or atleast work for, the illegal loggers; and, also to cause damages to the forest as a matter of revenge. Some of the concessionaries, however, have realised the benefits of social harmony and have embarked upon measures to win the trust of the local community.

2.2.2.3 Economic Problems

The inadequate quality of logging in the concession areas, and the increasing incidence of illegal logging have lead to negative economic impacts. Economic losses are also caused due to wasteful and careless logging practices and the resultant fall in quality of the remaining forest. Hardly any efforts are being made to control and reverse the trend.

2.2.3 Unregulated Development of Wood-Processing Industries

Generating disproportionately high processing capacity based on unrealistic assumptions of external and domestic demand for products, and consequently demand for forest raw material far in excess of the sustainable supply potential, has been one of the reasons for the present forestry crisis in Indonesia. The problem is made complex by the large number of illegal/unlicenced mills which have sprung up close to the forest areas, using wood sourced from illegal logging based on wasteful technology.(More on this is discussed in the next section).

2.2.4 Negative Impacts on the Rights and Welfare of Local Communities

Some of the issues linked to the spread of illegal logging are socio-economic in nature, particularly the disenfranchisement of the local community, and damage to the social fabric. In 1991, Indonesia introduced the village development scheme (HPH Bina Desa) which was designed to increase the contribution of concessionaries to the economy of the populations residing within and adjacent to the forests. This scheme does not seem to have had any significant impact. Indifference and, often, the antagonistic attitude of the local people towards logging concessions have become a critical factor. The related issues are the following:

- Neglect of the traditional rights and privileges of the local people and community covering forest land, forest products, nature and extent of tenurial rights etc., which in turn has resulted in the virtual loss of their traditional activities. As a consequence, serious conflicts have arisen and the Mission understands that there are some 4,000 active cases of rights-related conflicts spread out all over the country.

- Negative impact on the welfare of the forest-dependent communities due to lack of income and employment. Lack of appropriate skills has been a barrier for their participation in the activities taking place around them; and there has hardly been any efforts to raise their skill level.

- The need for empowering the local community as the prime stakeholder, and to involve them as partners in developing forestry has been much talked about but not effectively put into practice.

- The social strife, which results when the local community is excluded from participating in the prosperity generated by using local resources, can lead to untoward impacts such as erosion of civic sense and responsibility, and often to participation in illegal activities.

2.2.5 Need to Regulate and Reduce Wood Consumption

Demand and supply of wood products and hence the consumption of wood can be regulated and manipulated through government policies relating to timber offerings, mill licencing, trade and tariffs, prices and charges, as well as through direct interventions such as imposing restrictions or through creating alternative sources of supply. An important issue in this connection is incentive (and disincentive) policies – incentives for not using illegal logs and disincentives for using illegal logs.

2.2.6 Need for Economic Bases to Support Development

Building economic bases on which the country, the decentralised parts or localities have comparative and competitive advantage, is a necessity. Availability of high quality tropical timber and cheap labour and the location of Indonesia on the international shipping route provide the country with a considerable comparative advantage in forest-based production and trade. Competitive advantage has to be developed through increased relative efficiency, factor productivity and product quality.

Development of economic bases require capital investment. A capitalist will view the investment as an opportunity to maximise profit and rent capture, and the people will view it as an opportunity to improve their quality of life and livelihood. Involvement of people and investment of capital have both complementary and conflicting components. Strategic measures should, therefore, aim to increase and enhance the complementarity and to reduce conflicts, creating social awareness and harmony. This is a non-material incentive and can provide lasting impact if supported by appropriate policies.

2.3 MEASURES TO ADDRESS THE ISSUES

Some of the important measures required are discussed below.

2.3.1 Law Enforcement

There is no dearth of suggestions on how to address this issue of ineffective law enforcement (Contreras-Hermosilla, 2001). The urgent need is to decide on a set of measures appropriate to the situation and to unhesitatingly act on it for effectively controlling forest offences. The suggestions offered orally to the Mission and those found in publications/reports include, *inter alia*, the following:

- surveillance; effective policing; aerial and ground inspections; log tracking system; closing down of illegal saw mills; inspection by accredited third party; organized raids of suspected sites;
- increasing the level of deterrence/punishment (including fines, imprisonment, confiscation of properties, cancellation of concession/industry licenses) irrespective of the "connections" of the culprits; increasing the perceived risk of illegal logging;
- Ombudsman approach (which can be punitive or non-punitive); co-operation/co-ordination among related agencies; oversight by independent bodies such as IDCF;
- policy measures (e.g. relating to forest concessions, management systems, forest-based industrial licensing, taxation, trade and macro-economic variables) and regulations (e.g. controlling log movements, collection of taxes and charges based on output of products rather than on legal removal of raw logs can in some situations discourage illegal logging);
- Imposing a moratorium on conversion of natural forests into other forms of land use, which often serves as a cover for illegal logging, apart from its negative ecological impacts.
- changes in institutional arrangements for law enforcement; system to receive and act on public complaints; social fencing and involvement/empowerment of local community; system of mobile inspection units; rotating of staff to prevent development of vested interests; campaigns against illegal logging; voluntary network of civil society organizations and NGO's;
- clear and transparent timber accounting system; moratorium on natural forest conversion or felling in natural forests; decentralized crime handling; special training in crime handling; introducing a system of informants and incentives (e.g. cash rewards proportional to the value of the property/materials confiscated or risk involved); publicizing the names of offenders and details of offence as a form of disincentive against illegal activities;
- timber certification and ecolabelling as a voluntary market mechanism, agreements on handling crimes of illegal log (or derived product) trade with neighbouring

countries (or countries receiving the contraband materials) and international agencies; invoking the provisions of international conventions (e.g. CITES);[2]

- auditing of conservation areas in view of their vulnerability for timber poaching.

The above listed measures, singly or in combination, have given positive results in several situations in different countries, indicating the need for situation-specific approach – for example, certification and awards have only limited incentive value for those marketing forest products in Asia. It is also a matter for consideration whether zero tolerance to illegal logging is realistic/desirable while designing anti-illegal logging measures.

A strong view expressed to the Mission by several persons who were interviewed is this: to effectively address illegal logging it requires, first of all, solving the overall problem of corruption within the enforcement agencies, which in turn requires political will and a proper witness protection scheme, since both forestry personnel and local NGO's pursuing justice frequently receive threats to their life. Other suggestions presented include log export bans (temporary, in view of the commitment of the country to the principles of WTO), creating an island of integrity within the law enforcing agency(ies) and establishment of a task force on anti-illegal logging, reporting directly to the President or the Vice President of Indonesia.

On the issue of law enforcement in forestry and prevention of illegal logging, the Mission is of the strong view that there are no short cuts to efficient institutional arrangements, with adequate staff and funds, which uses "sticks" and "carrots" appropriately. The first requirement in that regard is to gear up the public forest administration in all its bureaucratic functions; establish an exclusive force to handle illegal logging and forest offences and to instill and maintain respect (healthy fear) for law; organize periodic raids (by organized flying squads) to detect offences, to gather all related information and evidences, to seize or otherwise appropriately deal with the tools, equipment, installations, and products involved and to pursue the prosecution of the case to a successful judicial verdict of deterrent punishment.

There are over 14,000 *Jaga Wana* (Forest Guards) under the government sector in Indonesia. They can be formed into an effective force to protect the sensitive areas by equipping them with weapons, training and logistical support. This force can be strengthened in each locality with the support of a local team of voluntary *watch and ward* who need to be provided with adequate incentives.

In the present abnormal situation, however, the growing scourge of illegal logging has to be attacked on a "war footing", to bring it down to a manageable level and to serve as a "shock therapy", by organizing a "strike force" of law enforcing agencies on a temporary basis. Such a system should be supported and complemented by regular analysis of illegal logging pattern for designing logistical measures; strengthening and rationalizing of laws and regulations; clear boundary demarcation, gazettment and maintenance of boundaries; making maps and boundary details available to the local staff; a system of incentives and disincentives; organizing a sufficient number of mobile "vigilance and inspection" teams to monitor the enforcement of laws and regulations based on clearly defined criteria; and a system of

[2] It has been argued that if timber species are placed on Appendix III of CITES, which can be done by simple notification to the CITES by the country of origin, then, all exports and imports of the species will have to be accompanied by a certificate of origin and a CITES export permit from the producer country.

certification and ecolabelling.[3] Detailed manuals and guidelines are to be developed and disseminated to ensure proper implementation of the system. Third party certification is now accepted as an important tool to achieve SFM.

2.3.1.1 Role of Certification Bodies

LEI (Lembaga Ekolabel Indonesia) established in 1998 is the only independent national accredition body for ecolabelling in Indonesia. To date, LEI has accredited four certification bodies. It has recently developed a log audit system (LAS) as a means to minimise illegal logging and related irregularities. This system (derived primarily from LEI's Chain of Custody (COC) Certification system, which in turn complements the ongoing certification for sustainable natural production forest management) is to be implemented through accredited certification bodies. The LAS system is yet to be applied in practice as no COC certifiers have so far been accredited. It is expected that IBRA will adopt the LAS of LEI as part of the technical covenant that IBRA is developing with forest industries under its Asset Management Credit Division. Thus, LAS serves as a tool not only to minimise illegal logging, but also as a technical pre-condition for restructuring of forest industries.

The main difference between COC and LAS is that under COC the wood materials need to come from a certified forest management unit, being not only legal, but more importantly, also are economically, ecologically and socially sustainable. In LAS, the focus is on whether the wood is derived from legal sources, even though the sources might not be managed in a sustainable way. Thus, wood sourced from forest conversion areas can pass the log audit.

2.3.2 Rectifying Deficiencies of Logging Concession System

Several alternative measures to streamline forest (concession) management in Indonesia have been proposed by experts over the years and recently there have been a spurt of them. The Mission also received oral suggestions from eminent personalities, NGOs, and stakeholders who were interviewed. Based on these inputs, the following is a summary of potential alternatives.

- Discontinue the HPH system as is practised now, which is destructive and unsustainable. Those who proposed this measure claim that most concessions have over-exploited the forest resources and there is not much mature wood left to be cut on a sustainable basis. A problem with a temporary or long term moratorium on concession holding is that it will lead to a number of wood processing units to be out of operation, causing misery to the employees.

- Drastically modify and restructure the HPH system. Size of the concession area, method of awarding concessions, nature of activities, silvicultural system(s) to be followed, duration of the concession, system of yield regulation, value of wood on stump, social obligations, provision for extension and revision of concession terms and other aspects need to be modified to ensure better management practices and fairplay. It is necessary to improve the HPH system such that:

[3] LEI (Lembaga Ekolabel Indonesia or Indonesian Ecolabel Institute) established in 1998 as an independent body is involved in preparing the concept and implementation criteria and indicators of SFM, at the forest management unit level. The first certificate for having met the LEI standard by a logging concession was awarded on 03rd April 2001.

- the forest concession and other production units are managed under comprehensive and scientifically prepared management plans;
- logging systems and practices are made more efficient to reduce logging damages and wastages;
- the concessionaires are required to prepare and implement a residue utilisation plan;
- the tenure of concession is made continuous (or at least equivalent to two cutting cycles), conditional to satisfactory performance of management obligations, following a roll-on system with a review at every 5 years;
- the size of the individual concessions is controlled as far as possible within a limit of 150 to 200 thousand ha;
- AAC is regulated under a system of area control, rather than volume control;
- the rates and charges on wood are increased appropriately such that the present level of total charges is linked to the market value, and that they are reviewed and revised periodically for further adjustments;
- an improved system of estimation, collection and checks is introduced for forest revenues (e.g. scaling of logs at site, merging of volume-based and area-based charges, check stations to verify log removals etc.), to reduce cost of collection and to prevent evasion of payments;
- an area based annual concession fee/premium is introduced to capture the value of quality differentials between areas and of assured long term supply; the size of it can be decided initially by public bidding and adjusted periodically, applying an agreed factor;
- a system of rebate or defraying of costs against the expenditure involved in preparation of management plans, silvicultural operations etc. (i.e. **performance bond**) is to be introduced, if these activities are required to be carried out by the concessionaires; in cases of non-performance or inadequate performance, these activities can be directly carried out by the Government or through hired professional service;
- some production forests are kept directly under the management of the public sector (State), as a control measure, to serve the relatively small processing companies, co-operatives or individuals with opportunities to participate in the development of the sector, and to provide a basis on which the performance of concessionaires can be assessed;

- Establish well-defined FMUs for scientific forest management and for long-term sustainability. Based on regulation No. 200/KPts-11/1991, KPHP (Kesatuan Pengusahaan Hutan Produksi) is the smallest unit of production forest that can be managed in a sustainable manner, and at the same time economically feasible and environmentally adequate for a company to conduct and maintain its forest utilisation activities. FMUs facilitate development of model forests with detailed maps, structuring by forest categories/types, continuous maintenance and fire protection, continuous inventory, growth and yield studies, harvest regulations, rehabilitation and improvement of productivity, as necessary. In spite of the existence of the regulation nothing has so far been done to introduce the system of FMUs.

- Study the systems being practised in other tropical countries and their relevance and feasibility for application in Indonesia. These include, among others: management of FMUs based on long term management plans by public sector institutions and/or state-owned enterprises; logging of marked trees and transport of logs to timber yards to be disposed off in regular auction sales; sale of marked standing trees or whole growth over demarcated coupes to industries; joint forest management in collaboration with local communities. The system being followed by Perum Perhutani in Java is also interesting in this connection. Some of these, suitably modified, may be tried on a pilot scale, for adoption later, if proved attractive.

- Privatise ownership of production forests (or part of it), on condition that land-use changes will not be permitted. The rationale is that private owners (as against concessionaires) tend to manage and protect their property in an efficient manner.

- It is, often, advantageous to practice a mix of management systems for their comparative advantages considering the variations in the climate, flora and fauna, economic and social situation and other factors. It is too simplistic and inappropriate to adopt a single system over the entire country. Adoption of a mix of systems will facilitate detection of inadequacies. Under a single system situation it is comparatively easy to cover-up wrongdoings.

- Irrespective of the system or arrangement used to manage the forests, it is absolutely necessary that basics of scientific forest management is strictly followed – such as inventory of resources and mapping, boundary demarcation, management planning, data systems, protection measures, reduced impact logging, rehabilitation and above all control of illegal activities.

The Mission is of the view that for any country with the variety of situations as found in Indonesia, it will be advantageous to adopt diverse systems of forest management. A healthy diversification can be achieved by stages – following a soft-landing approach, involving: a thorough review of ongoing/expired/non-functional concessions; identifying those which needs attention immediately, those which needs further review and those which merits to be continued under the present or modified arrangements; planning of actions according to priority and urgency; undertaking actions/implementation.

2.3.3 Ensuring Rights and Welfare of Local Inhabitants

Inadequate attention to the socio-economic development of the local communities has partly been responsible for the spread of illegal logging, and priority measures to address them should be built around this aspect. The suggestions in that regard, among others, include the following.

- Address and solve the social issues (property rights, employment and income of local communities, participation in production, need for social empowerment and so on) which have arisen with the establishment of concession operations in the various parts of the country, with full stakeholder participation.

- Restore tenure rights of local communities over adequate extent of land. This can be undertaken as part of a survey and settlement of forest land, to be supervised by a judicial commission or tribunal.

- Provide local communities with a legitimate share of the benefits accrued to the government and the private entrepreneur(s), through investment in community development, provision of employment and social amenities.
- Improve the capacity of the local communities to participate in forestry development by providing them with appropriate training and technology.
- Empower the local communities by recognizing their rights on forest resources; by giving them the forest management right on communal land; by supporting them to develop community based economic institutions; by encouraging establishment of co-operatives and small and medium sized forestry enterprises; and by involving them in multi-stakeholder holder working groups.
- Involve local community and civic society in fighting illegal logging and corruption in forestry through vigilance and surveillance. Without the local community members realising their responsibility, it is impossible to stop the wide spread illegal logging activities. Unless the local community finds it more beneficial for them to prevent the illegal logging, the incentives would dictate that they enjoy part of the benefits offered by the illegal loggers (MOF/JICA/EU, 2000).

2.3.4 Regulating Wood Consumption

Some of the relevant measures in that regard are:

- Regulate capacity and production of wood-based industries. Since forest-based industrial units are linked or associated with concessions, it is necessary to control their expansion (in terms of number of units and installed capacity) as a means to regulate the demand for locally produced wood raw material (and to control illegal logging), to bring it within AAC. Also, the location of the processing units should be so designed as to be able to detect the use of illegal logs. In some countries no processing mills are allowed within 5 to 10 km of the forest boundary.
- Making illegal logging unprofitable, by heavy penalties, confiscation of property, closure of mills using illegal logs etc.
- Tax remissions for certified wood products and penal taxes for uncertified wood products.
- Promotion of alternative sources of wood through peoples participation – e.g. agroforestry, trees outside forests. (See also section 4).

2.3.5 Building Strong Economic Bases

The important measures required for building economic bases to counter the tendency towards illegal activities are: investment planning, resource mobilization and implementation under the umbrella of the National Forest Programme. (See also section 2).

Box 2

ACTION PROPOSALS TO CURB ILLEGAL LOGGING

Principles:

- Carry out law enforcement without fear or favour, increasing the level of deterrence wherever appropriate.
- Strengthen the forest sectoral institutions to be capable of handling forest offences and other illegal activities.

Short and medium term actions:

- Undertake necessary policy and institutional changes to facilitate law enforcement on the one hand and to provide incentives to those who behaves lawfully, on the other - e.g. temporary log export ban.
- Establish an anti-illegal-logging task force answerable directly to a high authority (preferably the President or the Vice-President of the Republic) and attack illegal logging on a war footing.
- Establish mobile squads with appropriate powers to apprehend illegal loggers.
- Restore tenure rights of local communities over adequate extent of land, through clear policy pronouncements.
- Regulate capacity of wood industries; introduce a system of vigilance and inspections; strictly enforce transparent timber accounting and log audit for all wood-based industrial units.

Long term actions:

- Modify and restructure the HPH System such that it will be in the interest of concession holders to co-operate in countering illegal activities.
- Use the leverage of LEI in promoting SFM and to curb illegal activities through timber certification measures.
- Involve civil society in the effort to curtail illegal activities; introduce a system of rewards to encourage such involvement.
- Conduct an indepth analysis of the root causes of illegal logging.
- Bestow attention to socio-economic welfare of the local community and involve them as partners in fighting illegal logging.
- Also, test other systems of forest management found successful in other countries and if found feasible to introduce them in Indonesia, to reduce illegal logging.
- Address the issue of corruption within enforcement agencies.

2.4 PROJECT IDEAS

A number of measures indicated/proposed for curtailing illicit logging are amenable to be tried on a pilot scale before being adopted on a wider scale. This can be done as add-ons to ongoing projects, as part of a comprehensive project(s) in selected provinces/Kabupatens or as specific pilot project(s) to address illegal logging.

An activity to train trainers for application of C&I for SFM in Indonesia is now on-going as a component of an ITTO supported project. Another proposal by the Govt. of Indonesia for ITTO assistance is in the anvil for "development and implementation of guidelines to control illegal logging in Riau and West Kalimantan"; yet another being developed is for JOFCA support: on "application of forest cover density monitoring – satellite imagery to verify illegal logging"

Some of the measures discussed in this section, to address the issues relating to illegal logging, would call for field-testing and/or demonstration on a limited scale. These need to be pursued while formulating and implementing NFP to achieve sustainable forest management in Indonesia.

3. RESTRUCTURING FOREST INDUSTRIES

3.1 REVIEW OF THE SITUATION

Prior to, and for a decade and a half after independence, Indonesian forestry essentially catered to domestic needs for construction timber and fuelwood. Scientific forestry was almost entirely confined to management of teak forests in Java, being the population centre. By 1967, the reported production of industrial roundwood was about 3.2 million cu.m. By 1979, with the establishment of processing units by logging concessions and other related developments, there were 1,011 saw mills producing 1.71 million cu.m of sawnwood, 11 plywood mills producing 42,000 cu.m, one fibreboard mill producing 1000 t and wood working units producing 180,000 cu.m. By the 1980s, the wood industry had grown to a significant level and had become central to an export-oriented development. By 1987 the plywood industry provided about 56 percent of the sectoral value added; sawmilling, about 21 percent and pulp and paper, about 10 percent. Foreign exchange earnings from export of forest products in 1989 amounted to about US $ 4 million.

In 1988, Indonesia produced 9.8 million cu.m of sawn-timber and 8.2 million cu.m of wood-based panels, of which 6.3 million cu.m (64 percent) and 1.3 million cu.m (16 percent) respectively were consumed domestically. Indonesia's production of paper in 1988 was 936,000 t (utilizing mostly imported pulp and 192,000 t of locally produced pulp) against a consumption of 832,700 t. In that year forest-based industries consisted of some 2,700 saw mills of different sizes with an annual capacity of about 17 million cu.m; some 110 plywood mills with an annual capacity of over 7 million cu.m; 54 blackboard mills with an annual capacity of about 0.7 million cu.m; 7 particle board mills with an annual capacity of about 0.3 million

cu.m; 38 pulp and paper mills with an annual capacity of 1.4 million t of paper and a large number (about 8,000) of secondary processing units. Industrial log production in 1988 was about 32 million cu.m (up from 2 million cu.m in 1962). Some 96 percent of the industrial logs came from natural forests. In the densely populated region of the country, wood needs are partly met from non-forest sources, such as plantations of rubber, coconut and home gardens.

In 1999/2000 the structure of wood-based industry consisted of some 4,400 sawmills of various sizes and categories (annual capacity of about 19.0 million cu.m), 120 plywood mills (annual capacity of 11.1 million cu.m), 39 particle board mills, 102 block board mills, 13 chip mills, 2 MDF units, 81 pulp and paper mills (annual capacity of 5.23 million tonnes of pulp and 9.12 million tonnes of paper), and a large number of secondary processing units (producing moulding, furniture, chop stick, match, pencil etc.). Sawmilling and pulp and paper capacities are concentrated in Sumatra and panel products units are concentrated in Kalimantan.

Reported current size of capital assets in wood-based industry in Indonesia is about US$ 27.8 billion, giving employment to some 4 million persons, thus supporting the livelihood of an estimated 16 million people.

The evolution of the structure and growth of the sector has three more or less distinct phases. The first phase was focused on timber extraction and the attendant export of logs in the period 1967-79. These exports generally accounted for about 75 percent of the harvest and at that time were second only to oil in terms of foreign exchange earnings. The second phase began with the progressive log export ban in 1979 (which was completed by 1984) and was based on the objective of securing further processing of the timber resource. However, an opportunity to establish a balanced and competitive solid wood products industry was missed through an attempted monopolization of the plywood production and trade by APKINDO. This "diversion" of timber resources away from the sawmilling sector was further exacerbated by restrictions (mainly export taxes) on the export of sawnwood. The objective in this instance was to secure further processing in the furniture and other wood working industries. This has caused a log supply problem to the sawmilling industry, which persists to the present time. At the same time it has probably caused diseconomies of scale in the plywood industry. The third phase saw the extremely rapid development of the pulp and paper sector over the past decade. To a large measure this was driven by the very rapid growth in domestic demand.

The dynamics of structural change is further characterized by the development in the export performance of wood products:

- From 1980, export of logs steadily declined to (nearly) nil in 1985;
- Sawnwood was an important component of export from 1979 to 1990; some exports still takes place;
- Plywood exports have held its own since early 1980s, even though a decline in trend has been noticed in recent years.
- Exports of down-stream processed wood products started in 1987, and of furniture started in 1990, and continue to be strong.
- There was a trickle of exports of pulp and paper from 1982 to 1992, but it picked up as an important product starting in 1993, with continuing improvement.
- Value of exports of wood products crossed the level of US $ 8 billion, in 1992 and reached about US $ 8.5 billion in 1998.

As already indicated, there is a gap of over 50 million cum of wood per year between industry's demand and supply. The total raw material demand for timber industry is estimated to reach about 72 million cum/yr.[4], with the following details:

a) Sawmill
   - Without permit : ± 8 million cum/yr.
   - With permit : ± 22 million cum /yr.

b) Plywood : ± 18 million cum /yr.

c) Pulp and paper : ± 24 million cum /yr.

A large number of mills have no assured wood supply. The reforestation effort in the form of HTI development, reforestation, greening and new people's forest have made only a contribution of raw material of about 500,000 cum to 1.5 million cum/year, and as such, the planted forest cannot yet be relied on to bridge the supply gap. Also, the reforestation effort has only brought benefit to the pulp and paper industry; plywood, sawmill and moulding industries still wholly depend on natural forests (Walton, 2000).

There is considerable variation in technology, efficiency of operation, product quality, capital/debt ratio, etc. in respect of industries and industrial units. Some of the common factors affecting the wood-based industry include: technical backwardness/imbalance, low capacity utilization ratios and conversion factors, weaknesses in management, inadequacy of raw material supply, use of illegal logs and indebtedness.

3.1.1 Common Features of Wood-Based Industries

The development goals of the forest industry sector have generally been desirable – i.e. employment and income generation and value-added on a sustainable basis. But the policy instruments chosen were not effective in achieving the goals, and yielded a number of unintended negative effects. The policy(ies) resulted in shaping the sector, characterized by high levels of rent seeking behavior. Forest industries have become totally dependent on highly subsidized log prices; they waste wood while economizing on other factors, thus contributing to the decline of forests, which are treated as a low value resource. The situation is exacerbated by the fact that the licencing and structuring of the industry fall under the responsibility of the Ministry/Department of Industries, which do not co-ordinate or cooperate well with the Ministry/Department of Forestry.

In **the absence of an integrated master plan for sustainable utilization of forest resources**, and because of laxity in implementing the existing guidelines and prescriptions, many wood-based industrial processing units have come up on an *ad hoc* basis and in an unplanned manner. Thus, they share several common features:

- *Over capacity.* Wood-processing industries that for years enjoyed special advantages have expanded their capacity so that their timber requirements exceed the sustainable yield of the natural forests by at least 100 percent, probably more. Even though the installed capacity is widely viewed as being "inflated", there is sufficient evidence that there is excess capacity in all sub-sectors of the forest

[4] In addition, some estimates indicate that about 10 million cu.m of logs are smuggled to other countries.

industry, and part of their total wood demand is being met through illegal logging of one form or another.

- *Wood supply deficit.* Current sustainable supply capacity is far less than the actual consumption. As recently as the late 1980s, the long-term development plan called for an annual wood supply of approximately 150 million cum – 60 million cum from the natural forests and 90 million cum from plantations, by around 2030. This may not be an impossible target, but the necessary mechanism and machinery to achieve that target are not yet in place.

- *Over (and unsustainable) exploitation.* One way to meet the supply deficit, temporarily, is by over-exploitation of production forests, against all silvicultural principles. No attempt is made to expand the resource base by using the wood resources available outside forest areas – e.g. wood from estate tree crops of rubber, oil palm etc. and agro-forestry plots.

- *Low Level of capacity utilization.* This results partly due to non-availability of raw material; it can also be due to other reasons such as lack of market. In 1999, capacity utilization rate for forest-based industries varied between 48 percent and 75 percent.

- *Low efficiency and low competitiveness.* Conversion efficiency of forest industries in Indonesia, reflected in recovery ratios, is low compared to world standards. Also low competitiveness in world market has resulted in low price of products. Many of the plants are inefficient and cannot compete in the world market place, when no longer protected from market forces. This situation has created strong demand for illegal timber and, unless corrected, ultimately would lead to both destruction of the forests and collapse of the industries.

- *High rates of wastage,* both in harvesting and processing, and absence of waste reduction and/or waste utilization plans.

- *Increasing use of illegal logs.* (see Section 2).

- *Excessive reliance on wood from IPK sources* because of the low cost involved.

- *Tendency to go after quick profit,* rather than sustainable development of the enterprise.

- *Debt burden.* Preferential financing of the private sector, directly and indirectly, by the government had allowed capital formation that would not have been otherwise achieved in a competitive economy. This prompted large wood-processing industrial units linked to concessions to borrow heavily, and often use the funds improperly. Many have accumulated heavy debt burden; several of the heavily indebted industrial units are under monitoring by BPPN (IBRA).

- *Lack of reliable and consistent information.* Lack of reliable and consistent information in respect of almost all aspects of the forestry and forest-industry has been a significant hurdle for proper planning and development of the sector.

3.2 ISSUES

Problems and constraints of forest-based industries in Indonesia are complicated and multi-dimensional in nature, and involve various interests – giving rise to serious issues. The reasons that led the companies to make large investments in forest-based processing facilities without first securing a legal and sustainable raw material supply are an example of such issues. The crux of the situation is represented by excessive production capacity and/or inadequate availability of forest raw material.

There are several explanations as to why and how the excessive production capacity materialized. These include: excessive licensing by the government without confirming the raw material availability from time to time; lack of co-ordination between the licensing office (Industries Department) and recommending authority (Forestry Department); weak monitoring and law enforcement; existence of unlicensed/illegal processing units; and strong domestic demand which has not been provided for. Similarly several causes have been attributed for the inadequate supply of raw material – deforestation and forest degradation; unsuccessful (poor quality) forest plantations; wasteful logging; application of rigid C&I in natural forest management; increasing demand for log export; limited log imports; limited use of wood from non-forest sources; low recovery ratio in processing etc. (Sidabutar, 2001).

Issues linked to restructuring of forest-based industries are of two types – policy-related issues and practical or practice-related issues.

3.2.1 Policy-Related Issues

These are issues resulting from inappropriateness and vagueness of policies, or due to conflicts among related policies. Policy-related issues include: conditions and criteria for issuing licence to establish forest-based industries; implications of incentives including concealed and direct subsidies; forms of access to raw material resource; impacts of tariff and non-tariff protection; controls and monitoring; supply from land clearance; changes in socio-economic roles of industries; and fiscal and financial inefficiencies and/or irregularities. Often, these policy-related issues get reflected practically as impacts of implementation flaws.

3.2.1.1 Inappropriate Licensing Conditions and Criteria

Since the licencing criteria do not include sustainability and security of raw material resource, serious declines in outputs and export growth in the solid-wood forest products sector is expected to occur during the early part of the new century. Further, these declines are not likely to be offset by growth in plantation-based pulp and paper sector. Plantations of long rotation hardwoods cannot also have an impact, to offset declines, in the short or medium term (World Bank, 1995b).

3.2.1.2 Distortionary Impacts of Incentives

Material incentives in the form of direct or concealed subsidies are generally distortionary in nature, breeding inefficiency and malpractices, particularly if the subsidy component is not linked to provision of valuable externalities. Need for restructuring wood-based industries in Indonesia is an economic necessity because their current structure and

over-capacity are not a natural condition – but caused as a result of subsidies and inadequate policy, including:

a) Low Cost Access to Wood Resources. Aside from the free availability of illegal logs, low administered log prices offered by the government have seriously contributed to the present crisis in the forestry and forest industry sector. The World Bank (1995b) suggests that typical processing operations in Indonesia could afford to pay substantially higher log charges.

b) Distortions in Raw Material Allocation. There are several distortions in raw material allocation, of sawlogs and plylogs. The very high log export taxes effectively prevented external consumption leaving the entire supply to be consumed at home, paying only low administered fees, that together are only 25 to 30 percent of the international parity value, and causing highly inefficient use of resources.

c) Continuing Reliance of Pulp and Paper Units on Natural Forest Raw Material. Large capital investments in pulp and paper processing facilities have proceeded far more rapidly than efforts to establish sustainably managed pulpwood plantations. Indonesian pulp mills have been obtaining the major portion of their fiber raw material from natural forest.

3.2.1.3 Unimaginative Controls

Till recently, mandatory controls of plywood exports by an export marketing board (through APKINDO), had reduced flexibility and diversification of this sub-sector, thus strangling its growth.

3.2.1.4 Other Distortionary Impacts

The current structure of wood-based industries is causing an important market distortion. The price of the increasingly scarce wood raw material is not rising as it should. At the same time investments continue to grow (legally or illegally), due to a complete lack of coordination between those who manage the forest and those who issue approvals for industrial development. Efficiency is sacrificed by not investing in improved technology in the guise of supporting employment.

3.2.1.5 Lack of Financial Discipline

The debt burden situation has largely resulted due to the lack of financial discipline in the sector. Financial risks associated with the pulp industry's largest producers and the role of both Indonesian and international financial institutions in handling the heavy debt burden carried by these groups since the onset of the financial crisis in 1997 continues as a sore issue.

3.2.2 Practice–Related Issues

The practical issues linked to the skewed structure of forest industries of Indonesia, which often result from policy failures, include among others: excess production capacity; lack of capacity utilization; low level of processing efficiency; lack of sustainable raw material supply; lack of respect for the concept and criteria of AAC; serious lapses in forest

management; low profitability of forest plantations; inadequate planting and poor performance of plantations; lack of integrated management for wood and non-wood products; lack of transparency in the management of forest industries; unreliability of statistical information; lack of people's participation and social conflicts; improprieties of financial management; weaknesses of financial intermediation and indebtedness of industrial enterprises/companies.

3.2.2.1 Excess Production Capacity

This aspect and its implication have been discussed earlier. In fact, precise quantitative information on gross production capacity of forest industries as well as the actual production, domestic demand, total raw material requirement etc. is unknown and the figures quoted vary considerably. Lack of capacity utilization and low level of processing efficiency are related aspects.

An efficient industry is necessary in order to maximize the sector's contributions to economic growth. Efficiency gains can permit increasing outputs without increasing raw material consumption. Diversification of forest-based processing activities would also help to promote efficiency, as it could facilitate improved resource sharing and utilization. It has been noted by studies that there is considerable scope to improve conversion efficiency of forest industries in Indonesia.

3.2.2.2 Unsustainable and Uncertain Supply of Raw Material

Erosion of the resource base is already causing raw material supply problems for a number of processing units. Future supply of pulpwood is uncertain with faltering HTI programme and the likely moratorium on clear felling in the remaining natural conversion forests.

Some of the related aspects in this regard are: neglect of the criteria of AAC; lapses in forest management; inadequate quality and extent of plantations; low profitability of forest plantations and lack of integrated management of wood and non-wood resources.

Each of Indonesian's pulp mills is linked to a pulpwood HTI. Most HTIs are planting fast-growing *Acacia* species, which can be harvested in 6 to 8 Years. Industry sources argue that plantations will generate an exponentially expanding volume of pulpwood over the next several years, as new plantations come online and technical improvements lead to higher yields. One source projects that by 2003, total production from this will reach 17 million cum, or approximately 70 percent of the industry's anticipated demand for that year. At least four compelling reasons suggest that such projections will prove to be overly optimistic: (a) area and yields are over-stated; (b) monocultures are vulnerable to a range of technical problems; (c) fast growing plantations are highly susceptible to fire; and (d) conflicts with local communities disrupt plantation operations (Barr, 2000). It has been the objective assessment of experts that growing of plantation timber has been progressing very slowly (Sidabutar, 2001).

From the point of view of return on investment, forest plantations, particularly specific monocultures serving as a raw material source, do not normally fare well if treated as a separate enterprise. Due to this reason, processing enterprises preferred to obtain the required raw material cheaply from government sources, exerting all possible pressures and influences for the purpose. It has been estimated that during the period 1988-1999, plantations supplied

only 8 percent of the raw material required by the Indonesian pulp industry. During this period demand for pulpwood resulted in approximately 835,000 ha of deforestation (Barr, 2000, DfID, 2000).

Much of the mixed tropical hardwood (MTH) consumed by the industry has been harvested under IPK (clear cutting permits in blocks of 100 ha). A substantial portion – perhaps more than 50 percent has also come from undocumented, and presumably illegal, sources. Under Indonesia's current forest royalty regime, MTH is an extremely low-cost source of fibre, requiring the payment of a reforestation fee of US$ 2 per cum and a royalty of Rs. 2,000 (approximately 25 cents US) per tonne. Indonesia's largest pulp producers obtain MTH from affiliated concession companies, roughly at cost.

3.2.2.3 Lack of Transparency

Many details about the forest industries of Indonesia such as factor inputs by volume or cost, average investment per unit of capacity, incremental capital output ratio, system of accounting for capital depreciation and so on are not available to the public. The Mission also noticed that there are considerable inconsistencies and differences in the statistical information produced by different agencies/sources. In the absence of a mandatory requirement on the part of processing units to file returns to an *annual survey of industries*, it is very difficult to make a meaningful analysis.

3.2.2.4 Conflicts with Community Interests

The wood-industry development linked to the concession system has impinged upon several of the community rights and privileges, seriously affecting their traditions and quality of life. The situation is exacerbated by lack of efforts to appropriately involve the people in development activities.

3.2.2.5 Weaknesses of Financial Management

The financial sector performs the basic economic function of intermediation essentially through four transformation mechanisms:

(i) liability-asset transformation (that is, accepting deposits as a liability and converting them into assets such as loans);

(ii) size transformation (that is, providing large loans on the basis of numerous small deposits);

(iii) maturity transformation (that is, offering savers alternative forms of deposits according to their liquidity preferences while providing borrowers with loans of desired maturities); and

(iv) risk transformation (that is, distributing risks through diversification which substantially reduces risks for savers that would prevail while lending directly in the absence of financial intermediation).

The process of financial intermediation supports increasing capital accumulation through the institutionalization of savings and investment. The gains to the real sector of the economy, therefore, depend on how efficiently the financial sector performs this basic function

of financial intermediation. *The weaknesses in the basic function of financial intermediation were partly responsible for the recent financial crisis in Indonesia.*

The public and private debt situation in Indonesia is very serious calling for strong and rigid measures. While vast revenues go uncaptured, public sector indebtedness has risen enormously. As of the end of March 2000 government debt had risen to nearly 91 percent of GDP, up from only 23 percent of GDP at the end of March 1997. The cost of servicing these debts will result in less money being available to finance essential government services, such as health and education. In 1999/2000 total government debt service payments absorbed 40 percent of tax revenues, compared to only 25 percent in 1996/97 (DfID, 2000). Of the total private debt an amount of US$ 51.5 billion is owed to the Indonesia Bank Restructuring Agency (IBRA). The private debt situation is strongly reflected in the forestry sector.

Ownership of forest concessions and wood processing plants are dominated by large business conglomerates with strong political connections. Taken together, the 10 largest groups operating in the sector control over 47 percent of the allocated concession area, and 43 percent of the licensed processing industry. These groups have used the vast profits earned from concession operations to finance expansion into banking and other sectors of the economy. The ease with which forestry profits were earned, encouraged reinvestment in a large number of unviable investment projects. The proliferation of such projects, along with malfeasance and breaching of banking regulations, were significant contributory factors to the Indonesian debt crisis (DfID, *loc cit*).

In spite of the substantial risks involved in the forest industry such as the lack of sustainable supply of wood raw material (particularly pulpwood), large loans have been granted to it without due diligence, often on political instructions given to State banks or by lending from banks within the same conglomerate. As a result, many of Indonesia's largest forest companies are also among the country's biggest debtors. Debts held by groups having interest in the forest sector (performing and non-performing) total $4.1 billion, while non-performing loans directly linked to forest enterprises are worth an estimated US $2.8 billion, or 5.4 percent of IBRA's total non-performing loans. IBRA holds an additional US $2.4 billion in non-performing loans to the non-forestry businesses of conglomerates that operate in the forestry sector. The offshore debt of those conglomerates amounts to another US $15 billion (Barr *et al*, 2001, Walton, 2000).

IBRA is authorized to call in non-performing loans and to seize corporate assets, but so far has not taken any significant action in the forestry (and forest industry) sector. In the meantime, financially weak companies continue to take additional risk, and the existing owners run their operations with no supervision (Barr *et al*, 2001; Purnomo, 2001). It has been estimated that as much as 70 percent of total bad corporate debt may eventually be written-off in Indonesia. In the forestry sector, this would amount to US $1.9 billion related to forest-based investments, or US$3.6 billion in total debt of the conglomerates. Such write-offs would amount to subsidies for the firms in the industry, many of which have taken unwise investment risks, pursued unsustainable logging practices, created markets for illegal timber, delayed establishing plantations to meet their future needs, and enjoyed large profits from low rent capture by Government, low-interest loans, and tax advantages. The write-off would also support existing over-capacity in the processing industry and encourage further expansion, leading to still more pressure on the natural forests (Barr *et al*, 2001; Walton, 2000).

3.3 MEASURES TO ADDRESS THE ISSUES

A World Bank (1995b) paper has asserted that Indonesia will be better off in direct, economic terms if it introduces policy changes which will produce efficient and effective sustainable use of its natural resources, rather than allow continuation of present non-sustainable pattern. World Bank's findings are highly relevant when considering the need for value added forest-based processing in Indonesia under the sustainability scenario. Along with an appropriate management regime, efficient waste-free and total utilization of forest resource is vital for forest sustainability. Efficient utilization influences, and is influenced by, the structure of the processing industry, technology, raw material specifications, marketing and institutional support. For improving efficiency in forest resource utilization, it is essential that the structure of forest-based industries, in terms of type of product, size of processing units, nature of integration, and regional spread, is reviewed and modified, to reflect changes in raw material and market situations. Such restructuring needs to be undertaken on the basis of a national level Master Plan taking into consideration the goals of forestry sector development and its contribution to national well-being.

Corresponding to the policy and practical issues discussed above, relating to the situation of forest industry in Indonesia, there is need to undertake policy and practical measures.

3.3.1 Policy Measures

Two aspects, which have precipitated the need for restructuring the forest industries, are the financial crisis and the raw material crunch. They have affected the processing units, which are under IBRA's responsibility as well as those outside it. Policy measures to address the issues affecting the structure of forest industry include, *inter alia*: structuring criteria, supply/demand balancing, market mechanism, sustainability of forest resources, inter-agency/inter-sectoral co-ordination, checks and balances, incentive system and investment strategy.

3.3.1.1 Criteria for Restructuring

Theoretically, the structure of forest industries is decided by market-cleared balance of supply, demand and price. Demand for wood (raw material) is a derived demand, dependent on the demand for processed products; and the volume of wood raw material demanded is influenced by processing efficiency. To guide the direction of forest industries development, and thus the forest industry restructuring process, it is necessary to balance the estimated wood demand with the estimated sustainable future supply potential based on goals and objectives of forest resource management.

Restructuring of forest industries (which may require some processing units to be closed down, others to be revitalized etc.), cannot be done through external coercion. Rational investors will behave according to the dictates of the market. Policies which influence the behavior of the market, e.g., allocation of raw material, demand and price can prompt changes in the structure of forest industries. The actual nature of the policy reforms should be decided based on the current situation with regard to the attributes of the forest industries structure and the situation which is desired to be achieved as a result of policy reforms. These attributes include: capacity utilisation and production level; flexibility in the use of raw materials;

sustainability of the raw material source; quality of the product; technological standards; efficiency of production; situation of comparative and competitive advantages; waste reduction/utilisation; vertical integration of operations; multiplier effects of the enterprise; social contributions and environmental impacts.

A fundamental assumption in policy reforms is that the government should only employ those instruments that enhance economic performance (property rights, reduced barriers to entry, investment in human and natural capital, market-based incentives, etc.) and remove those which have contributed to the set of problems (non-competitive allocation of public resources, subsidies, weak enforcement of the law, etc.). Participation of all stakeholders can help a *consensus decision* regarding the structural changes, which can realistically be achieved. What is expected of the policy changes is that it will lead the industry to extract and process reduced supply of raw material (logs) more efficiently than in the past. The main incentives needed to achieve this are *higher log royalties and methods of pricing designed to apply scarcity value of the raw material.* This can be achieved by reducing log output to sustainable levels.

3.3.1.2 Balancing Supply and Demand

Policy instruments such as supply controls, administered prices, taxes and levies, and the free play of market mechanisms are often used to balance supply and demand. In a market characterized by free competition and full information, supply (from all sources, forest and non-forest) and demand (for all end-uses) are in equilibrium. This healthy competition will enhance efficiency. Market interference by public administration often upsets the natural balance of supply and demand and lead to distortionary impacts.

3.3.1.3 Preventing Market Failure

In the absence of perfect knowledge and competition, market often exhibits weaknesses. In such situations, it becomes necessary to use policy instruments for preventing market failure and to ensure efficiency in utilization. Efficiency in utilization can be influenced and encouraged through appropriate pricing (i.e. royalty and other charges on forest resources). Price in turn can be influenced by rational control of timber offerings, to manipulate timber supply. Other related factors are supportive trade policies, good distribution system, (e.g. adequate shipping and feeder transport services), proper specifications for end-products, and availability of skills and research support.

3.3.1.4 Ensure Sustainability of Resource

Sustainable forest management and sustainable forest utilization are prime forest policy objectives. It is emphasized here that sustainability should be sought through the promotion of efficiency rather than through an attempt to simply administer a reduced flow of raw material to the sector, while leaving cost and price conditions and incentives unchanged.

3.3.1.5 Intersectoral Coordination

Integrity of the structure of forest industries is influenced by policies and practices of two different sectors – i.e. forestry and industry, having different biases, power base and

bureaucratic culture. A system of co-ordination of the roles of the two sectors, within a defined framework, is to be established as a strategic measure and a policy instrument.

3.3.1.6 Effective Use of Checks and Balances

Several of the problems affecting the structure of the forest industries are due to lopsided policies of protection (e.g. export taxes and low royalty of logs; export taxes on sawnwood) and inappropriate duration of concession rights. They are to be balanced appropriately by: reviewing their performance and impacts (including the impacts of linkages of concession rights to ownership of processing facilities) and by establishing appropriate checks and balances.

3.3.1.7 Removing Distortionary Incentives

Subsidies and material incentives such as concessionary rates of royalty, interest free loans, and protection from competition are distortionary and tend to breed inefficiency. While the award of forest concessions and other privileges helped forest industries to be established in Indonesia, the continuation of privileges and subsidies have prevented them from becoming healthy and efficient. There is urgent need to rationalize incentives and to remove the distortionary ones.

3.3.1.8 A Sound Approach Towards Investment in Forest Industries

There should be rigid criteria for investment in forest industries so that the scarce funds are put to the best possible use, considering their contribution to economic, social and environmental health and security of the country. Forest-based developments may not often be as attractive as others from a purely financial point of view; but they are known to provide high economic rate of return when non-market benefits (externalities) are taken into consideration. Investments, which are neither financially attractive nor capable of ensuring social and environmental benefits, should be avoided. Particularly, policies governing plantation forestry need serious reviewing and reorientation in order to create an environment suitable for successful tree growing business. Criteria for investment should be made succinct and transparent. In respect of industries such as pulp and paper, private ownership of plantations through long-term leases should be encouraged – thus, promoting efficiency. In all cases, it is necessary to solve land-related conflicts and disputes.

3.3.2 Practical Measures

It has been highlighted by all concerned that the prime basis for the present crisis in Indonesian forestry is the gap between supply and demand for wood. The situation is likely to prevail (and assume larger proportion) in the future, unless realistic action is taken urgently. Inaction will have implications on employment, income, government revenue, trade, operational efficiency, community welfare and environmental conservation.

In the present situation of timber requirements exceeding supply in the forest industries sector, harmonized demand and supply of raw material can be achieved through demand cut and supply increase. Demand cut will mean to reduce or downsize the effective capacity of individual mills. But this is a difficult undertaking. Government authorities cannot simply close down the mills employing old machinery and facilities or of suspected inefficiency. Forest

industry restructuring has to be prompted by market force. Certain practical measures can facilitate, and suitably guide, the play of market forces. In tandem with these, it is essential that laws and regulations be strictly enforced. Some of these measures are discussed below.

3.3.2.1 Detailed Review and Evaluation of the Situation.

An important necessary step is to conduct a detailed review and evaluation of the situation in the forest industries sector, gathering information on: number of licensed and unlicensed mills; ownership of mills – public, private, cooperative, etc.; production capacity of mills and capacity utilization rate; age of the mills/equipment; technology level; availability or otherwise of assured raw material source; factor efficiency and total efficiency of production; conversion ratio; and system of internalizing capital depreciation. Without such an evaluation, it will not be possible to get a clear idea of what has been going wrong and how to address the deteriorating situation.

3.3.2.2 Categorizing the Processing Units.

Based on the review and evaluation (of efficiency/competitiveness, technological level, raw material security and fitness to continue production) the processing mills may be variously categorized to help restructuring decisions. To illustrate:

Illegal mills	- to be dismantled/removed (depending on illegal logs).
Illegal mills	- to be legalized (working based on legal and sustainable source of raw material, say from trees outside forests).
Licensed mills	- by age class or date of establishment – e.g. over 20 years old; 10-20 years old; less than 10 years old.
Licensed mills of over 20 years of age	- recommended for immediate closure (inefficient, outmoded technology; no regular source of raw material).
	- recommended for phased closure (raw material available, but will be inoperable within the next few years; time required for workers to be provided alternative employment opportunities).
	- recommended for retooling, re-engineering, upgrading, modernizing (all basic infrastructure and production lines available, with scope for improvement; sustainable raw material source readily available; captive plantations getting established with provision for using imported raw material in the interim).
	- recommended for relocation (basically efficient unit except for availability of raw material or land to raise plantations within economic distance).

- recommended to be downsized (either to adjust to availability of raw material or to get rid of the unprofitable/inefficient part of the operation).
- recommended for diversifying production and/or production technology through installing add-ons or balancing equipment (to take advantage of the existing useful equipment, management, location etc. of the mill)
- recommended for integration with downstream value- added processing for better profitability and benefits.

Such or similar categorization will help rational decision making. Restructuring can be linked to environmental objectives as well. And, an important thrust and objective of restructuring should be to keep the total value of output and job opportunities undiminished. Development of small and medium scale enterprises and secondary processing are important in this regard.

3.3.2.3 Master Plan for Forest Industries Restructuring.

A natural follow-up to the review and evaluation is to develop and implement a time-bound Master Plan for forest industries restructuring based on strategic, transparent, objective and well-defined criteria including critical resource programming wherever appropriate. The Master Plan will, *inter alia* , indicate the priority sub-sectors for future development; recommend actions to prevent erosion of social and environmental gains; suggest where (or whether) the processing units are to be linked or delinked with forest resource base; examine the sustainability and/or future possibilities of independent development of the forest resource sector. This plan should be consistent with the overall National Forest Programme.

In addition the entire process of evaluation and planning can help to guide the debt recovery/restructuring efforts of IBRA and to make rational decisions regarding handling of assets - as to which units are to be closed down, which ones to be sold, which ones to be provided further support and which of the loans deserve to be written off. It is the view of experts that only a moratorium on new plant investment in Indonesia is consistent with sustainable forest management. All of the other measures can cause continued decline of forests – if not followed through very carefully and in an absolutely unbiased manner, a situation too idealistic to be true at present.

Structuring of primary forest industries should be strengthened with value-added downstream processing and by promoting unique niche products. For example, commercial plywood is a low-value-adding industry, viewed by many as 'sunset industry'. Diversification of panel industry, by production of decorative plywood and downstream products (such as marine plywood, blockboard, flush doors, overlays) can improve profitability and employment possibilities. Any attempt at capacity expansion in respect of any particular product is to be linked to resource assessment and development of forest plantations or resources outside forests.

3.3.2.4 *Annual Survey of Industries*

Many countries have established the system of Annual Survey of Industries based on international guidelines, which serves as a tool for continuous improvement of the sector. It is necessary that Indonesia initiate the system as soon as possible.

3.3.2.5 *Streamline Supply Situation*

Action is needed on several fronts to (re)establish sound management of the remaining natural forests of Indonesia. There is strong need to re-estimate the sustainable supply potential based on the actual forest growth and yield, and silvicultural system(s) in use. Management of concession forests needs to be streamlined to enhance productivity and to regulate extraction. Considering the "negatives" of concession management, it will be appropriate to investigate alternative systems for improved sustainability and enhanced benefits. The moratorium on allocation of new forest concession licenses introduced in 1998 may be extended indefinitely while evaluating the potential of other systems. Particularly, it is necessary to avoid allocation of natural forests for supply of pulpwood and to eliminate all forms of pulpwood supply subsidies, in order to promote action to establish pulpwood plantations.

Other practical measures to improve wood supply situation include: creation of new forest resources in the form of forest plantations, promoting out-grower plantations, community-based forest plantations, agro-forestry, home gardens and trees outside forests; use of wood from non-forest sources such as estate crops of rubber, coconut and oil palm; and increased utilization of secondary species, small-dimensioned materials and logging and process residues. At present there are about 3.6 million ha of rubber plantations, 3.7 million ha of coconut and 3.3 million ha of oil palm plantations in Indonesia – totaling 10.7 million ha. Some 790,000 ha are to be replanted annually which could provide some 91 million cum of material. Additionally, the area of non-forest resources such as home gardens and private woodlots have been estimated to be about 1.26 million hectares (FAO 1998b; Nasendi 1997; Suparna, 2001).

3.3.2.6 *Market Rationalization*

Creation of a domestic log market (including liberal import of logs) will help to rationalize log supply. There is no need to continuously priorities one or other forest industries with respect to log supply; efforts should be made to promote competitive log market. Formation of "wood centres"[5] at strategic locations can facilitate development of log markets spread across the country. The important role of the government in this regard is to facilitate the working of an efficient domestic log market and effectively control illegal logging in natural forests through strong law enforcement.

3.3.2.7 *Diversion of Fuelwood for Industrial Use*

Industrial wood supply position, particularly of pulpwood, can be improved by reducing fuelwood consumption and making it available for industrial use.[6] (This does not normally

5 The concept of wood centres was very strong in Indonesia at one stage, following the establishment of Marunda Wood Centre in Jakarta.

6 Estimated use of fuelwood in Indonesia in 2000 was 134.4 million cum, up from 127.4 million cum in 1995.

happen mainly because fuelwood fetches better price than pulpwood). Another avenue open to improve wood supply is through *salvage logging* and/or chipping the logging residues (using portable chippers) for pulping. This can be promoted as a participatory activity by local communities.

3.3.2.8 Promoting Small-scale Forest-based Operations

Further, socio-economic considerations indicate that small-scale forest-based operations have an important role to play, especially to support rural development. Sawmills based on non-forest sources of wood and NWFP-based industries are generally small. Smallness, however, should not lead to inefficiency. Also, because of their localized nature, the small-scale operations can utilize alternative sources of raw material and thus reduce pressure on forests.

3.3.2.9 Reducing Demand for Wood

There are several ways by which demand for wood raw material can be reduced. They include: improved wood recovery through efficient technology; bulk production based on standard measurements and specifications (e.g. of building components, doors, windows, school furniture); increased durability/life of products through wood seasoning and preservative treatment; waste free utilisation and waste utilisation. From the point of view of forest utilization, if Indonesia is to pursue an export-oriented forestry development, the most convenient way of doing so would be to earmark most of the output of valuable tree species for export, while ensuring domestic wood supply from other sources such as forest plantations.

3.3.2.10 Continuous Monitoring of Wood Balance

As noted, although natural forest timber supply will decline, overall timber supply is likely to increase. But there will be major shift in the nature of supply – away from high quality natural forest timber towards fast growing plantation timber, lesser-known species from the natural forests, small dimensioned material which are at present left as residues, and estate crops timber.

As we have noted, the pulp industry consumes a considerable amount of pulpwood; and it is not sourced from high-yielding industrial pulpwood plantations, as expected. If expansion of pulping capacity takes place as per the present indications, annual pulpwood requirement may exceed 35 million cum by the year 2010. It is absolutely incumbent on the government to curtail the tendency for irresponsible expansion of pulp processing capacity, until pulpwood required is fully secured from captive pulpwood plantations.

3.3.2.11 Effective Institutional Measures

There is no doubt that efficiency improvements can be made in all aspects of the sector from "stump to sale" through both strengthening the public institutions and enhancing the competitive performance of the private sector. There are several measures needed in that regard, which are of an institutional nature – i.e. legal, regulatory and administrative. For example, there is compelling need:

- to introduce an enforceable "reward and punishment system"; those who are involved in illegal logging and under-reporting should be severely punished;
- to tightly control log exports;
- to introduce a credible monitoring programme;
- to revise Ministerial Decree No. 501/2000 on issuance of logging permits of 100 ha of forest by the Head of District (Bupati); the decree has resulted in increased level of illegal logging;
- to support and strengthen institutional coordination mechanisms as required for general and special circumstances (such as the IDCF);
- to disassociate forest concessions from funding arrangements for establishment of forest industry;
- to enforce due diligence practices on the part of financial institutions;
- to review pending IBRA cases as well as the proposals in hand (e.g. provided by Sandwell of Canada). Wherever the decision is to sell-off the assets it should be ensured that sustainable forestry is clearly defined, and detailed guidelines and performance standards for forestry operations are included, in the agreements of sale for each of the plant assets held by BPPN.

3.3.2 Other Strategic Elements

The supply/demand analysis carried out earlier (GOI/FAO 1991b) had indicated generally that: (i) in the next century, starting around 2010, forest plantations will be the major source of wood supply, with decreases in production from natural forests; (ii) Sumatra and Kalimantan are likely to take the lead in plantation forestry; (iii) wood from non-forest lands and logging and process residues will find increasing use; (iv) in addition to its other roles, natural production forests will continue to serve, on a limited scale, as the source of sustained supply of high quality timber species, essentially for export-oriented production; (v) increasing domestic demand for wood products (and competition from other tropical wood-producing countries) is likely to reduce Indonesia's share in export markets; (vi) pulp and paper will emerge as a dominant wood-using industry and plywood and sawmilling will continue to play important roles; and (vii) the wood-using industries will tend to become more capital and technology intensive.

An important component of the development strategy for the forest industry sector should be to aim at utilizing timber supplies presently not used, and not to increase demand pressures on the resource. Thus, development targets should emphasize on the pulp and paper sector, alternate wood-based panels, small-scale industries to process plantation wood and lesser known species (as well as wastes and residues) for local and regional markets.

Box 3

ACTION PROPOSALS TO RESTRUCTURE FOREST INDUSTRIES

Actions to be undertaken immediately by Government

- Assess domestic and export market for wood, paper and board products; develop estimates of future wood demand, and estimates of future sustainable wood raw material supply potential from all sources i.e. forest and non forest sources; make a forecast of market-cleared wood supply-demand balance.
- Define long-term goals and objectives of forest industries development and fundamental attributes of desired future forest industries.
- Establish strategies for implementing the forest industries development programme.
- Close down all illegal mills, depending on illegal logs.
- Downsize processing units and/or restrict creation of new capacity to establish a supply / demand balance.
- Strengthen coordination among relevant agencies to ensure healthy growth of the sector.
- Establish a system of regular (annual) survey of industries.

Actions to be taken after consultations with all stakeholders.

- Evaluate the existing wood-based processing industrial units regarding their fitness to continue production.
- Enhance efficiency of those units which are fit for production through retooling, diversification, improved technology, human resource development and so on, as necessary.
- Promote small-scale forest-based enterprises.
- Adopt appropriate technology for utilizing raw material of differing quality and properties – such as second growth timber from natural forests, plantation grown timber, and timber from non-traditional/non-forest sources.
- Promote downstream value-added production of forest products for obtaining increased retained value.
- Promote pulp and paper industry based primarily on domestic raw materials, i.e. pulpwood plantations; recovery of secondary raw materials for pulp like bagasse and waste paper be improved.
- Promote alternate panel products, which can be produced from logging and process residues, and small-dimensioned materials for waste-free use of resources and to meet domestic demand.
- Undertake forest plantation development.

- Establish domestic market strategy for forest products and wood centers in selected locations.
- Promote efficiency in end-use of wood products through introduction of wood preservation, promotion of standard sizes of building components and utility furniture, recycling/reuse of salvaged materials and such other measures.
- Support and strengthen research, extension and training for improving the forest industries sector.
- Encourage and support integrated development of wood and non-wood forest products.

3.4 PROJECT IDEAS

A proposal has been made for assistance/pilot project in the area of forest industries, i.e.: "preparation of a restructuring plan for forest industries in Indonesia" covering a number of component activities including, among others:

- Developing criteria and indicators of firm/industry performance to assist the policy process.
- Identifying the long-term market potentials that better reflect Indonesia's real comparative advantage.
- Identifying market opportunities/mechanisms to improve utilization of wood waste to "extend" the forest resource base.
- Assessing non-forest wood-supply for pulpwood.

4. FOREST PLANTATIONS FOR RESOURCE CREATION

4.1 REVIEW OF THE SITUATION

Forest plantations, involving intensive silviculture, are artificially established forests through afforestation or reforestation with one or very few introduced or indigenous species, either by planting or direct seeding, characterised by even age classes and regular spacing. (SAF 1964, Hardcastle 1999, Brown 1999, Ball and Brown 2000)

Many countries have, since 1920s, progressively developed a significant plantation forest estate, and are managing them to maximise wood yield, largely in response to the recognition that without a concerted effort to establish supplementary wood supplies, the natural forests would be rapidly depleted. By the year 1995, total net area of forest plantations raised globally was about 181 million ha, representing 5.2 percent of the world's forest area.

Nearly three fourths of the world's forest plantations are raised through private efforts and institutions (including small farmers), supported in many cases by state-sponsored afforestation drives. There is also a wider and deeper recognition of the relevance and importance of intensively managed forest plantations in achieving sustainable forestry development.

Forest plantations have several favourable attributes; i.e. ideal for concentrated production of raw material for industrial processing; can use degraded lands; allow intensive management at acceptable cost; amenability of manipulating growth and quality through genetic improvement; can be grown as pure or mixed crop; high-input/high-output potential; positive economy of scale; can form a useful part of diverse and synergetic landscape; create employment particularly when associated with value-added processing; provide products for local consumption; help improve land-use through small holder and out grower planting.

Some of the potential negative aspects of plantations include: heavy investment and infrastructure needs; complexity of cost structure; tendency to rely on restricted species base; pressure of industrial demand may distort priorities; bio-diversity and land rights are likely to be compromised; and management lapses can lead to site deterioration. Unless adequate care is taken, these negative aspects can undermine the effectiveness of plantation programmes.

In tune with these attributes, the major roles being played by the forest plantations include: meeting the timber supply deficit from natural forests; rehabilitation of watersheds that have been extensively degraded; and provision of socio-economic and environmental benefits. The forest-based industries support forest plantations because the existing natural forests are either inadequate or unavailable for raw material production and forest plantations are best suited to ensure reliable supply of large quantities of relatively uniform quality of raw materials at reasonable cost. Productivity of forest plantations can be considerably enhanced through technological inputs. In some best-case scenarios, plantations are about 20 times or more productive than natural forests.

Forest plantations are raised partly by converting natural forests and partly by afforesting used and abandoned agricultural lands.

While forest plantations have recorded high wood yields and other benefits in most cases, there have also been several instances where performance has suffered due to various reasons, particularly inadequate management and institutional constraints. Exotics and/or genetically improved varieties have recorded high yields (e.g. *Eucalypts* in Aracruz, Brazil). Also, tropical plantations generally have greater potential for increased yield than temperate species. Obviously, hot, wet, fertile sites are much more productive than cold, dry sites with shallow and infertile soil. The indicated potential of tropical forest plantations is in excess of 30 cum/ha/year. Brazil claims 45 cum/ha/yr as the average productivity of *Eucalyptus* in the country; and yields of up to 100 cum/ha/yr have been recorded in pilot trails (Brown, 1999). However, it has been indicated that from the point of view of growth and yield, only about 10 percent of the world's existing plantations can be classified as fast growing, yielding much more than 15 cum/ha/yr (FAO, 1999).

Accordingly, forest plantations have attracted considerable positive attention and criticisms in the recent years. Proponents suggest that forest plantations offer the answer to much of the global environmental problems of land degradation and carbon sequestration. One

analysis had concluded that plantations are needed where: (1) natural forest area is inadequate, (2) natural forests grow too slowly to meet bulk forest-product demands on a sustained-yield basis, (3) natural forests are too scattered to permit economical harvesting, and (4) natural forest timber is too remotely located to be transported economically (Salleh 1997, Marsh, 1962). All of these problems are avoidable by establishing plantations of fast-growing species near communities and processing industries (Wadsworth, 1997).

The opponents are of the opinion that monoculture plantations lead to erosion of biodiversity and are unable to meet the diverse social needs. Other allegations leveled against forest plantations are that they: destroy environment; dry the land; cause soil erosion; deprive people's livelihood; reduce employment; affect food supply; and in serving industry they are anti-people (Shiva, 1996).

Proponents of forest plantations often see only the benefits; and opponents only the costs/disadvantages. Zobel et al (1987) is of the view that opposition to forest plantations is based on misunderstandings caused due to inadequate information/knowledge on, and analysis of, the plantation resources including the, nature and intensity of their potential positive and potential negative impacts. Plantation projects are designed to provide (and most of them do provide) positive net benefits. In some cases, deficiencies/flaws in implementation, resulting mostly from institutional inadequacies or judgemental errors, do result in negative impacts. That is not a sufficient reason to condemn an entire aspect of scientific forestry (the silviculture of forest plantations), which has evolved (and continuously being refined), based on centuries of experience and considerable experimentation, around the world.

As in other primary production enterprises, advanced technologies play an increasingly important role in plantation forestry. *Use of appropriate plantation technology will ensure that the right species are planted on the right site using the right technique and maintained under the right treatment.* The broad aspects involved in this regard will cover: soil capability studies, analysis of site factors; site species matching, site preparation and improvement; preparation of planting materials; control of pests and diseases; plantation silviculture and management systems. Some of the scientific steps to be gone through for ensuring "right species for the right site" would include: screening of potential species based on the range of known attributes and available results of plant introduction trials; provenance studies and evaluation; studies on seed source variation and genetic selection; evaluating bio-technology potential; appropriate measures for seed selection, handling and storage; improved nursery practices; evaluating benefits of root training/root pruning and so on.

4.1.1 Plantation Development in Indonesia

Indonesia has a tradition of forest plantation establishment going back to the turn of the last century, with substantial acreages of teak (*Tectona grandis*) in Java. The oldest recorded planting in Java dates back to 1883. Plantations of other species were also taken up in the later years, of which the most commonly planted species was *Pinus merkusii*. Population pressure had left Java without much of natural forests for meeting people's needs; and that role was taken up by plantations. Even though plantation forestry in Indonesia was initiated over 100 years ago, large-scale plantation programme is only a recent phenomenon. Even in the 1990s, over 95 percent of the total industrial wood consumed came from natural forests. With the maturing of the newly created forest plantations, and more planned to be established in the coming years, the situation is expected to change drastically.

In the first long-term *25-year development plan* for forestry, the Government of Indonesia had envisaged, and repeatedly affirmed in the 1970s and 1980s, *that by the year 2000 an area of about 26 million hectares (of otherwise unproductive land) will be brought under planted forest:*

Industrial Timber Estates	:	6 million hectares
Reforested (watershed) areas	:	7 million hectares
Regreened critical watersheds	:	13 million hectares

By the end of 1975, the total area under forest plantations in Indonesia (including the older plantations of Java) was 2,077, 500 ha (Teak 726,500 ha; conifers 362,000 ha and other broad leaved species 989,000 ha). Towards the later part of 1970s, the Government of Indonesia embarked on a programme of rehabilitation of critical lands through reforestation and regreening. Since this programme did not have a production objective (hence any economic/quantitative criteria of success), no efforts were made to monitor its performance.

The reported situation of rehabilitation planting as of 1994-95 was as follows:

Table 4.1. Situation of Rehabilitation Planting, 1994-1995

(Million Hectares)

	Area Planted	Remaining to be Planted	Total
Reforestation	2.50	5.59	8.09
Regreening	5.09	10.02	15.11
Total	7.59	15.61	23.20

Since 1994/95, the tempo of this activity has considerably fallen, indicating an annual average achievement of 31,600 ha. The reported planting in 1999/2000 was only 12,000 ha (Suparna, 2001).

Tree planting under the rehabilitation programme (reforestation and regreening) are normally excluded from the category of plantation forestry, because their primary function is not timber production; and there is hardly any information on what they contain. Survival rate of these plantations was estimated as between 34 percent and 43 percent (Suparna, 2001). Some other reports give the survival range as between 6 percent and 71 percent (GOI/FAO, 1991b).

4.1.1.1 Categories of Plantations in Indonesia

Based on the programme focus and purpose, the plantations can be categorised as follows:

Industrial Forest Plantations (HTI – Hutan Tanaman Industry)

- of pulpwood
- of mechanical wood (sawlogs/plylogs)
- perkebunan (agricultural estate crops)
  - state owned
  - private
  - community based

- plantations of Perum Perhutani in Java
  (Note: Outgrower plantations based on agreements between companies and farmers, and with credit support and guidance of companies, are industrial plantations, in its strict sense)

Non-industrial Forest Plantations.

- Reforestation/forest rehabilitation (undertaken in forest areas in various stages of degradation, for enhancing their potentialities and protective roles; also includes tree planting for watershed protection and soil conservation in forest areas).
- Greening - tree planting for restoring degraded land in non-forest areas. (Criteria for selecting an area for greening is its criticality in terms of soil degradation, leaving the land unfit for agriculture).

Social Forestry / Community Forestry

- Activities under this include agro-forestry, fuelwood lots, home gardens and participatory forestry. Agro-forestry activities are carried out mostly outside forest areas.

Enrichment Planting

- Enrichment planting is meant for enhancing the quality and composition of logged over areas under selection system – where desirable species are planted in gaps and patches.

Over the years, Indonesia has raised plantations of a large number of species – *Tectona grandis, Pinus merkusii, Swietenia macrophylla, Dalbergia latifolia, Agathis loranthifolia, Altingia excelsa, Gmelina arborea, Pterocarpus spp., Shorea spp., Dipterocarpus spp., Anthocephalus cadamba, Alstonia scholaris, Rhizophora spp., Peronema cancescens, Eucalyptus deglupta, E. urophylla, Paraserianthes falcataria, Melaleuca leucodendron, Leucaena leucocephala, Acacia mangium, A.crassicarpa* and several others. *Tectona grandis* which was the predominant plantation species till the advent of the new HTI programme has been planted over an area of about 880,000 ha. Pulpwood HTIs of fast growing species have already overtaken teak in terms of acreage.

In respect of the new generation of industrial plantations, except probably for few HTIs owned by large pulp manufacturing companies, information available (on actual area planted, survival rate, growth and yield, cost per unit of raw material produced etc) is scanty and often unreliable. Even the available information mostly does not stand the test of consistency, when cross-checked with other information.

4.1.1.2 Range of Rotations

The plantations are managed under different rotations, depending upon the growth rate of the species involved, and the desired size and quality of the wood harvested – indicating a wide range from about 6 years to about 80 years. Slower-growing high quality timber species are managed on a long rotation (e.g. Teak 60 to 80 years; Mahogany 40 to 50 years; *Pinus merkusii* 30 years). Rotation of pulpwood plantations range from about 6 years to about 15

years (*Acacia mangium* 6-7 years; *Albizzia spp* 8-12 years and *Eucalyptus spp.* 12 to 15 years).

4.1.1.3 Growth and Yield

Depending on their attributes and influencing factors, the different categories of plantations exhibit varying productivity levels (from an MAI of about 1.0 cum/ha/year to over 20 cum/ha/year). The assumed/estimated/projected figures of MAI have to be taken with caution. It has been reported that the actually achieved average MAI of teak in Java managed by Perum Perhutani is 1.25 cum/ha/year. This may be compared with sample plot data from a variety of locations in Java which showed a range of MAI from 6.7 cum/ha/year for Site Index V to 17.6 cum/ha/year for Site Index I under controlled conditions (GOI/FAO 1991b).

It has been claimed by the researchers of large pulp and paper companies in Indonesia (Riau Pulp/APRIL, IndahKiat/AAPP) that genetic gains have resulted in an MAI of 46 cum/ha/year for *Acacia mangium* in the research plots and on a practical level, an MAI of 32 cum/ha/year can be expected. In a comparable situation in Sabah, against early research indication of MAI of 40 cum/ha/year, the real achievement was only 14 cum/ha/year for Site Class 3 and 20 cum/ha/year for Site Class I.

4.1.1.4 Estimated Cost per Unit of Wood

Based on the assumed yield of pulp wood , Riaupulp and AAPP have estimated a cost of US$ 6 – 7 per tonne of pulpwood on the stump. The cost is likely to go up if the expected yield falls. Against this, the corresponding cost being charged by the Goverment for IPK and RKT pulpwood from natural forest is only about US$ 2.20. This anomaly can serve as a disincentive for raising successful plantations.

4.1.2 Reforestation Fund and HTI Concessions

In 1980, concerned with the non-observance of their sustainable forest management obligations, and related silvicultural prescriptions by forest concessionaires, even after more than 10 years of concession operations, the government established a *reforestation guarantee deposit fund* (Dana Jaminan Reboisasi or DJR), to encourage establishment of forest plantations. The concessionaires were to make deposits to the fund based on the volume of logs produced. Under this scheme, if the concessionaire did reforest, he was refunded the deposit, based on costs involved. However, the DJR did not generate interest among the concessionaires to increase their reforestation efforts. The area of plantations raised by concessionaires between 1984 and 1988 (mainly *Paraserianthes falcataria* and *Acacia mangium)* totalled to only 86,000 ha. This situation prompted the government to launch a timber estates development programme (Hutan Tanaman Industry – HTI). This programme aimed to establish 4.4 million ha of new industrial timber estates (HTI), making a total of about 6.0 million ha in the country by the year 2000. In 1988, the rate of DJR was increased and it was replaced by a non-refundable *reforestation fund* or a fee, Dana Reboisasi (DR), the designation clearly reflecting its purpose. DR could be used for reforestation activities outside the respective concession areas. During 1988/89 – 1989/1990, efforts were made to raise HTI through implementation contracts. This system also did not provide the desired result (Suparna, 2001).

In March 1990, the government introduced a new regulation, PP No. 7/1990, by which long term concession rights for industrial timber estates (HP-HTI) were to be offered to prospective investors for a period of 35 years renewable by one cutting cycle or up to 70 years. This completely removed the linkage of HTI with HPH in a legal sense, and provided for granting HPH-like property rights in place of the hitherto contractual arrangements. According to PP No. 7/1990, HTI can be raised by state owned enterprises, private sector companies and co-operatives. It was the intention that between 20 percent to 40 percent of the HTI should be under pulpwood and 60 percent to 80 percent under timber species. (Most of the industrial plantations raised prior to 1990 were of slow growing timber species). The Government policy was to encourage establishment of plantations only on the already deforested and degraded lands which total more than 20 million hectares .However, not all such lands are suitable for industrial plantations because of poor soils and infrastructure, and land tenure problems. To encourage reforestation of these lands, the Government provides incentives through fiscal policy measures (concessionary funding through utilising DR), land lease arrangements, and improved resource information.

4.1.2.1 Financing of HTI

There are two types of funding arrangements for establishing HTI: (i) self-financing and (ii) joint venture with BUMNs (state owned corporations). Self-financed HTIs are fully under the private sector and the successful HTIs are known to fall under this category. They account only for less than 20 percent of the total (Suparna, 2001).

The joint venture arrangement of multi-source funding is based on a sharing system. The details are as follows:

(i) 21 percent equity of private investor (self-equity)

(ii) 14 percent government equity through BUMNs provided from reforestation fund

(iii) 32.5 percent zero interest loan from reforestation fund

(iv) 32.5 percent loan from reforestation fund at commercial rate interest determined by the Minister of Forestry every 6 (six) months, on June 30 and December 31, based on the average interest rate of the one-year time deposit which is valid in the bank distributing the loan.

So far, under the joint venture arrangement, only the first three component items have been used. In effect the investors have been primarily interested in taking advantage of the "subsidy element". Once the interest free loan is kept back, there will hardly be any interest for private sector to get involved in the HTI programme. The self-financed HTIs are also showing a declining trend. While pulp and paper companies have invested heavily on plant, installations and infrastructure, their investment on establishing pulpwood resources has been negligible.

The government has so far allocated an area of 7.7 million ha for HTI, of which the area reported as already planted is only 1.8 million ha, without discounting for the possibility of over-reporting and quality differentials. This represents 23 percent of the area allocated and 40 percent of the achievement target set for the year 2000. Further, HTI establishment is showing a falling trend. The peak achievement reported was 332,700 ha in the year 1993. It has fallen to 70,300 ha in the year 1998 and 81,600 ha in 1999.

4.1.2.2 Current Situation of HTIs

As of December 2000, there were 176 approved HTI concessions, with a land allocation of 7.76 million ha (consisting of 29 HTI–pulpwood with an area allocation of 4.96 million ha, 80 HTI–mechanical wood with an area allocation of 2.0 million ha, and 67 HTI–transmigration with an area allocation of 0.8 million ha). Of the total of 176 HTI concessions, only 51 are normally operating and 32 are operating below normal capacity. Others have either stopped all operations or never took up any activities. Of the normally operating ones, 9 are HTI-pulpwood with an allocated area of 1.6 million ha., 14 are HTI-mechanical wood with an allocated area of 0.4 million ha, and 28 are HTI-transmigration with an allocated area of 0.3 million ha. Cumulative achievement of planting as reported at the end of 2000 was 1.85 million ha (HTI-pulpwood 1.18 million ha, HTI-mechanical wood 0.36 million ha and HTI-transmigration 0.31 million ha).

While the management of pulpwood-HTIs generally meets a better standard, the overall performance of HTI has not been satisfactory and the progress has been slow. Some of the reasons attributed are the following.

- Since alternative source of cheaper raw material is being made available, the companies benefit by not planting and private investors have no incentives to produce.
- Tenure issues and land conflicts.
- Lack of plantation performance audit.
- Lack of maintenance including fire protection.
- Inappropriate selection of species, provenances and sites.
- Lack of a long term plantation master plan.
- Inadequate access to credit due to high risks and low productivity.

For the functional HTIs, their performance standard varies due to several reasons. For example, the MAI of HTI-pulpwood ranges between 9 cum/ha/year to 46 cum/ha/year. With such a broad range, with most values being on the lower side, it is often difficult to workout a realistic average. Assuming an MAI of about 25 cum for HTI-pulpwood, 15 cum for HTI-mechanical wood and 18 cum for HTI-transmigration and applying appropriate correction factors, the potential productivity of the 1.85 million ha of existing HTIs has been estimated as 29.67 million cum per year (excluding contributions of Perum Perhutani[7] and other sources). Current actual contribution of HTI is only about 1.5 percent of the total legal/recorded wood consumed by the processing industry.

Forest plantations (which can make a substantial contribution to wood supply if properly managed) are highly inadequate in terms of area and marginal in quality, often with low stocking. The existing industrial timber plantations in Indonesia account only for about 2.7 percent of the total forest area. The main constraints in the expansion of industrial plantations included **lack of an adequate long range plan** incorporating carefully selected and identified

[7] Perum Perhutani conducts annual cutting, on an average, over an area of 65,000 ha and thinning over an area of 135,000 ha. Actual productivity of teak is rather low.

sites suitable for different categories of plantations, selection of species (and species combinations) for plantations, arrangements for supply of certified seeds and seedling production, tree improvement activities, prescriptions for after care, trials and studies etc.

4.2 ISSUES

While some issues originate from the conceptual positions taken in favour of or against plantation forestry, most issues are policy-related and institutional in nature – caused by human tendency to take advantage of situations, and the ineffectiveness of public institutions to curtail it. An example is the maneuvering on the part of HTI concession holders to obtain secondary forests with valuable timber growth tagged as logged over and degraded, in order to earn a 'profit before investment.' Some of the important issues (individually or bunched together) relating to development of plantation forestry in Indonesia are presented here.

4.2.1 Slow Progress in Achieving Targets

The progress in expanding the area under plantations has been extremely slow due to lack of motivation resulting from policy flaws, uncertainty of access to land, tenurial problems, social conflicts and above all lack of real and sustained incentives. Private investors have very little incentive to invest in plantations intended to substitute for and/or supplement natural forest supplies, because wood from natural forests costs only about a third of the cost of plantation wood. Being of higher density, pulp yield per cubic meter of natural forest wood (from conversion areas) is also likely to be higher than the yield from fast growing plantation wood.

4.2.2 Low Profitability

At the existing level of price and technology, investment in forest plantations is not very attractive to investors. Low profitability is an issue to be addressed while promoting forest plantation programmes. Analyses have shown that slow growing sawlog species provide very low IRR, whereas pulpwood plantations of fast growing species can provide an acceptable IRR. If price of plantation logs are increased, the profitability situation will show a positive change. The current low royalty rate charged to higher quality logs from conversion of natural forests is an anomaly which should be solved.

4.2.3 Low Productivity

In a plantation environment, inputs can be suitably adjusted to obtain high level of productivity and to beat the law of diminishing returns. Forest plantation development is a form of land use. Whether it is a good use or bad use depends on how the influencing factors are combined to produce optimum result. Productivity of forest plantations of all categories in Indonesia, including that of most HTIs, is considerably lower than the achievable optimum. This is essentially due to the deficiencies in management: inadequate attention to nursery practices; lack of care in site-species matching; inappropriate technological inputs; lack of maintenance; lack of protection from pests, diseases and fire; insufficiency of skilled human resource; and poor infrastructural facilities.

4.2.4 Imbalance in the Implementation of HTI Programme

As has been explained elsewhere in the report, there is an imbalance between targets and achievements in the production of different categories of industrial forest plantations – i.e. fast growing pulpwood plantations, slow-growing high quality timber plantations, and medium quality utility timber plantations. Since short rotation pulpwood plantations provide a (comparatively) better rate of return on investment, there is a normal tendancy to make investment decisions in favour of pulpwood plantations. This imbalance can be rectified partly by imaginative raw material pricing policies and partly by encouraging production of more than one product from the same plantation – e.g. pulpwood (from thinnings and residues) and commercial timber.

4.2.5 Lack of a Production Objective for Rehabilitation Plantations

Since no production objective/target has been assigned to rehabilitation plantations, no efforts have been made (so far) to assess or monitor their performance. No information is available on their level of survival, condition or impact. This is not a desirable situation.

4.2.6 Investment Risks

Financial return is a measure of attractiveness of an investment. The main risk in investment is the prospect of sustaining loss due to a 'high-cost/low-price' situation. Cost depends on site factors and investment horizon (due to influence of discount rate); price depends on product quality and location. Plantings to produce sawlogs/plylogs generally fail in financial profitability test, except under optimistic price assumptions. The long time horizon of investment in forest plantations lends considerable uncertainty; and this invites greater attention to the particular aspects of risk. Another risk is of not achieving the intended objectives.

The risks associated with plantation investments can be grouped into four categories: operational risks; market-related risks; political/systems risks and ecological/nature-related risks. Operational risks include institutional lapses in planning and implementation of plantation programmes. Market-related risks are linked to demand, supply, quality, quantity and product pricing. Political and policy related risks are caused by actions of (or changes in) institutional systems.[8] Ecological risks take the form of natural calamities.

4.2.7 Controversies about the Contributions of Forest Plantations

Forest plantations, often monospecific monocultures, have been blamed for lack of (or comparatively low level of) environmental and socio-economic contributions. It is often alleged that they lead to environmental costs – such as loss of biodiversity, lowering of water table and deterioration of site quality. None of these can be considered as intrinsic attribute of forest plantations. Wherever these environmental impacts are seen along with forest plantations, they are caused due to the defective manner in which the plantation activities are implemented. Further, plantations do contribute to sustainable forest management by diverting the pressure away from natural forests; they contribute to carbon sequestration, and help soil and water conservation. Being a labour intensive activity, forest plantations help provide off-farm income

[8] Illegal logging which considerably affect investments in forestry is a political / systems risk.

and employment to the local community. Enhanced net benefit is clearly a function of effective management. The controversies about the impacts of forest plantations often turnout to be emotional rather than rational.

4.2.8 Lack of a Policy and Plan for Forest Plantations

In Indonesia, there is a lack of long-term policy and plan relating to development of forest plantations, covering sustainable management of resources, peoples participation, phased programme development and implementation, institutional support, tenurial arrangements, dissemination of research findings and technology packages, extension system, credit facilities, marketing services and so on. Some of the existing policies such as those relating to the use of reforestation fund are distortionary because of the provision of a subsidy component (e.g Government equity and interest-free loan), which are not linked to performance.

The HTI scheme, which subsidizes plantation activities from DR, until recently contained loose provisions (such as those relating to the definition of degraded forest suitable for HTI), which encouraged HPH concessionaires to establish plantations on logged over sites suitable for natural regeneration. Although the provisions defining areas suitable for planting have been tightened, the temptation to degrade natural forests on good sites within HPHs so as to qualify for HTI benefits remains, and the linkage of HPH rights to planting obligations is probably counter productive in this respect.

As noted earlier, a large number of HTI's (majority, in fact) are non-functional. The situation raises two questions: (i) how to provide real motivation to the HTI concessionaires to plant trees and to manage them efficiently? and (ii) how to improve the management of reforestation fund and to enhance its impact?

4.3 MEASURES TO ADDRESS THE ISSUES

4.3.1 Conduct Inventory and Evaluation of Plantations

There is no clear idea or statistical information about the existing types of forest plantation resource in Indonesia covering: extent, age, species, location, site quality, scheme under which raised, condition of crop in terms of stocking intensity and volume of stock, present condition of protection (pests, diseases, fire), existence and nature of claims and conflicts, community interest and involvement, areas in need of (and having potential for) rehabilitation, areas to be written-off, areas to be put back into sustainable management, and areas where HTI-concessions are to be revoked. These details are basic for a hard-nosed analysis to initiate management planning and action (and related institutional arrangements) in the short, medium and long run. Similar investigations are also to be carried out for the plantations of Perum Perhutani in Java. Moreover, a survey of the areas under community/social forestry and agricultural tree crops (rubber, coconut, and oil palm) will help to have a better picture of wood balance in the country.

4.3.2 Enhance Productivity of Forest Plantations

Considering the constraint of limited availability of suitable land, and for reasons of efficient management and control, silviculturally and administratively, the emphasis should be on increasing productivity per unit area and not on increasing area *per se*. As part of the expansion of industrial forest plantations, it is also necessary to improve the productivity of the already established plantations and to rehabilitate those, which have failed.

Cost and benefit profiles of plantations vary considerably between locations, categories and uses. Cost of wood production through plantations and the related direct benefits are influenced by several factors – rotation, growth condition, quality, demand etc. These can be suitably combined to enhance productivity. Some specific ways of improving productivity (and production possibility) are the following:

- By enhanced factor inputs along with site improvement.
- By improving technology – seed technology, tree breeding and genetic improvement, nursery technology, use of biotechnology, improved varieties and provenances, site-species matching, tending, protection and maintenance.
- By raising mixtures of tree species for multiple products and product diversification. Industrial plantations with the right mix of species (e.g. fast growing general purpose species and valuable species such as Teak, Agathis, and Mahogany) can support the development of panel industry, providing both cheaper core and expensive face-veneer.
- By mixed cropping involving inter-cropping and under-cropping, for producing wood and non-wood (such as fiber, phytochemicals) products.
- By multipurpose management involving production of goods and provision of services (such as eco-tourism, environmental conservation, carbon sequestration).

4.3.3 Privatization to Improve Competitiveness and Efficiency

Forests and forest plantations are privately owned in several countries, both developed (e.g. Japan, USA, several European countries) and developing (e.g. Korea, Chile, Brazil, Fiji). Some countries (e.g. New Zealand) have recently gone through a process of privatization to improve efficiency and professionalism in the sector and for greater benefits to the country by delinking it from bureaucracy.

Private ownership does not necessarily mean that forests should be owned by large private corporate bodies. Smallholder tree farms and outgrower tree plantations (such as in Philippines and South Africa), community forests, village wood lots and home gardens are also 'private forests'. In a broad sense privatization has come to be associated with the application of business principles and efficiency criteria in managing a resource. One lesson, which emerges from recent experiences in forestry development is that if resources of local populations are mobilized effectively, a good deal of productive and effective forestry investment can take place at a rather low cost. It has been the general finding that private forestry initiatives, particularly forest plantations, produce encouraging results in terms of efficiency and yield.

While private sector is involved in forestry activities of Indonesia, it is not privatization in the real sense and is an anathema to sustainable forestry. Awarding of concessions for exploitation of publicly owned forest resource (or to establish HTI) by private companies and individuals without appropriate controls and accountability has already had its share of deleterious impacts. Privatization should not be a licensing system – It should be a system of ownership and tenure. Indonesia can benefit by cautiously (and by stages) trying to introduce privatization for plantation development, by involving larger number of individuals, communities and small enterprises.

4.3.4 Rescue Measures for the Troubled Joint–Venture HTIs

To rescue the troubled joint–venture HTIs, the following alternative measures may be taken depending on the actual situation:

- Sell the Government's share (14 / (21 + 14) x 100 = 40 percent) of the equity to prospective investors (wherever possible), linking it with rescheduling of DR payment, if necessary.
- Link the sale to the restructuring of raw material sources for pulp and paper industry. Reduce significantly the IPK wood license for pulp and paper industry and require the industry to acquire the troubled HTI and to continue maintenance of the plantation.
- If the above two alternatives are not possible, liquidate the HTI.

4.3.5 Promote Stakeholder Participation

Since there are different categories of plantations owned both publicly and privately (including agricultural tree crops and agro-forestry), there is an array of stakeholders involved in forest plantation development. Then, there are those who process and use the plantation resource and others who benefit from employment and income provided by plantation–related activities. Participation of the stakeholders in a democratic manner can help reduce conflicts and tensions and ensure success of plantation ventures. Stakeholder participation can further be reinforced through partnership arrangements, co-operatives and local membership organisations. The scope of participation can be widened by means of:

a. supporting measures to improve competitiveness of community efforts for establishing forest plantations, in the form of extension services, credit facilities, market access and tenure security;

b. encouraging adoption of patches of forest plantations by business enterprises, companies, schools, NGOs and others;

c. establishing small-scale industries to process the small diameter logs from the industrial forest plantations developed by local communities; and

d. promoting utilisation of wood from agricultural tree crops, agro-forestry plots and community wood lots, for industrial purposes.

4.3.6 Undertake Research and Technology Development

It is necessary to undertake research and technology development as an activity closely linked to forest plantations. Growing of forest plantations for meeting the industrial raw material needs (e.g. for pulpwood) has become a competitive business. Research and technology development (e.g. in areas of plant genetics, pest and disease control, mixed cropping, soil management and improvement, harvesting and fire management), have contributed to improving the growth and yield, and thus to reduce cost per unit of raw material. Since raising of forest plantations is a site-specific activity, there is need for field-based research inputs. It is also necessary to establish **technology centres** for extending and disseminating research results and for supplying specialised inputs (e.g. planting materials) to the small growers and to the community involved in forest plantation activities.

4.3.7 Formulate a Clear Policy on Forest Plantations

The Mission received strong messages from those who were interviewed that there is an urgent need to reassess the policies (and considerations) governing forest plantation programmes, including those on the use of DR. A new or reformed policy on forest plantations, to be formulated within the framework of a National Forest Policy, should specify *inter alia:* clearly defined objectives (e.g. supply/demand balancing consistent with the broad social, economic and environmental objectives of the forestry sector); basic targets (area, volume, type of products); implementation strategies (e.g. funding, criteria for obtaining credit, tenure, land selection and allotment, role of private sector/community/small holders, incentives); related institutional instruments (for regulating, controlling, monitoring) and other considerations (e.g. to exclude all naturally regenerating forest lands from the plantation programme, to specify a production objective for rehabilitation plantations).

An important objective of forest plantation policy in Indonesia is accelerated development of plantation forests, to approach a balance between demand and supply of wood, cleared by the market. This objective has necessarily to be reconciled with the policy objectives of investment and industry development. The related target of raw material production should take into consideration the supply from other sources (including possibility of imports and potential supply from non-forest sources) and measures to improve efficiency of raw material utilisation.

One of the main motivations for investors to apply for HTI concession has been the easy facility to obtain advance funding from DR in the form of interest free loan and Government's equity. Many operators of HTI have lost their interest once the payments have been received. In some other countries, such financial contributions are made available only *post factum*, after the work (or defined stages of the work) has been completed, so that there will be no "profit before investment".

Incentives are a double-edged sword. It can have just the opposite result if administered wrongly; and, that has been the experience in Indonesia's HTI programme. IPK cutting permits for pulpwood are such an example, and these need to be withdrawn on a rigid time-bound basis, if necessary by allowing pulp wood imports. Further, incentives should attempt to sustain motivation for developing and managing forest plantations. In that regard, policy oriented incentives have an advantage over others – e.g. policy of ensuring remunerative prices; open-ended lease period with provision for periodical review; fiscal concessions like tax

remissions or other privileges purely linked to "good performance"; simplified procedures for people's participation; training and research support; introduction of privatization on a pilot/trial basis, and annual awards for best performers.

The World Bank has recommended that no more HTI and estate crop concessions can be located within the forested estate, without a full consultative review process. The real purpose of this measure is to send a signal that the forested estate is going to be kept as forest permanently. The supporting measures that should be considered under this task are:

- removal of the option for any new HTI to get large areas of still forested land to use as pulp furnish;
- transfer of genuinely degraded forest land to the management (or shared management) of some local communities, who would supply the pulpwood to existing mills as part of a deal to utilize such land;
- sunset clauses to minimize the extension of the rights of existing mills to use natural forest material beyond certain levels or proportions after set dates, to ensure they really do establish their plantations (World Bank, 1999).

The Mission fully endorses these recommendations.

4.3.8 A proposal for use of Reforestation Fund

Regarding the use of DR for raising forest plantations in degraded forestlands, the ex-Minister of Forests Dr Ir Nur Mahmudi Isma'il shared some of his ideas with the Mission. His proposal was to use part of the DR to provide full funding support by annual loan installments, free of interest, to 350 selected concession holders to plant 500 ha each annually, to be managed on an 8 year rotation. At the end of 8 years each concession holder will have planted 4,000 ha, and together a total area of 1.4 million ha. Recovery of loan installment will start with the first harvest at the end of 8 years and completed by the 16th year. As the loans are recovered, the amount will be re-loaned to another batch of 350 selected concessionaires, and increasing the planted area to 2.8 million ha by the end of 16th years (and further to 4.2 million ha by the end of 24th year and so on until the required extent of plantations, based on availability of suitable land, is established). This is a conceptually acceptable proposal, provided logistical and management aspects are not compromised.

4.3.9 Prepare and Implement a Plantation Master Plan

The Plantation Master Plan will provide the details (of where, how, how much, in what sequence and at what cost) in respect of each of the component plantation activities. It specifies: the inputs required, outputs expected, roles and responsibilities of the players involved, spatial and temporal distribution of activities, funding requirements by periods, co-ordination with related institutions/programmes, periodical evaluation and monitoring. Robustness of planning (as against its superficial elegance) depends on the analytical strength provided by the reliability and consistency of data.

4.3.10 Strengthen Institutional Support for Forest Plantations

Being an important investment activity involving a wide range of investors and participants, it is necessary that the establishment/management of forest plantations is supported by appropriate and competent institution(s): to focus on its needs for funding, technology, human resource and marketing arrangements; to ensure its sustainability; and to monitor its productivity.

In some countries, monies provided for reforestation (whether from private or public sources) have been administered by a **Forest Trust**. Such a trust is most appropriately established by statute, with the specific objective of maintaining and operating a fund for investment in forest plantations. The trust may finance forest plantations through other agencies, communities, individuals, firms or NGOs, or it may undertake tree-planting operations itself. It should be publicly accountable and its fund management should be transparent.

In order to support the ambitious programme of forest plantation development in Indonesia, a Forest Trust may be established. The Trust should be provided with adequate Government funding initially from DR; it should be widely publicized, and it should be able to raise money, privately and publicly, for forest plantations. There appears to be no reason why such a trust should not attract multilateral funding for forestry and serve as an executing agency. The proposal requires further study with respect to details of policies and operations.

Box 4

ACTION PROPOSALS TO RAISE FOREST PLANTATIONS

- Rationalize and streamline HTIs, with special emphasis on joint-venture HTIs.
- Assessment of management performance and an inventory of all forest plantations be carried out for assessing their quality, extent, stocking, and productivity.
- A national Master Plan for forest plantations be prepared, as priority, indicating the location, extent, species, markets etc. for future plantation development and specifying areas of existing plantations requiring rehabilitation.
- The plantation Master Plan should also include proposals for rehabilitation and intensive management of existing plantations, integrated pest and fire management, inter-cropping/under-cropping and mixed cropping of forest plantations, etc.
- Private sector investment in plantation development be promoted, with community participation through provision of adequate incentives.
- Emphasis be placed on quality and productivity per unit area of plantation, rather than on increasing of area *per se*.

- The policy of pricing (including royalty rates and charges) of logs, pulp wood and other products be reviewed and revised for increasing price realizable for plantation logs, and to improve profitability of forest plantation ventures.
- Measures such as inter-planting and under-planting with valuable crops including medicinal and aromatic plants be tried in forest plantations, to provide intermediate yields, to improve the rate of return on investments.
- Wherever feasible, incorporate a secondary objective of wood production (and/or production of non-wood forest products) for rehabilitation (and regreening) plantations.
- Industrial timber estates should be sited in reasonably good lands and can include marginal areas, which will respond to mechanized soil working and site preparation.
- Establish seed centers with modern facilities to support plantation programme.
- Implement an intensive research programme covering all important aspects of forest plantations (of all types), including tree improvement, provenance trials, growth and yield studies, end-uses, etc.
- Establish demonstration plantations of adequate extent and in different locations which can be linked with research activities.
- Set up training facilities on all aspects relating to plantation development for the benefit of company staff, workers and local community.
- NWFP resources be expanded through plantation programmes and social forestry/participatory forestry activities.
- Non-forest sources of wood such as plantations of rubber and coconut and home gardens be promoted through research and institutional support; small-holder tree planting activities may be encouraged.

4.4. PROJECT IDEAS

There are several concepts and actions which are suitable to be tested as pilot projects. These are indicated in the project idea on preparation of Forest Plantation Master Plan for Indonesia, involving the following actions.

- Inventory/Investigation of existing forest plantations in Indonesia, falling under various categories
- Assess their comparative roles in the future
- Draft a policy for forest plantation development in Indonesia

- Based on potential outlook for forestry, forest industry and forest conservation in Indonesia, evaluate the role and functions of forest plantations to support sustainable forestry in the country.
- Prepare detailed proposals for maintaining/enhancing productivity of existing plantations; creation of new plantations; integrated land use incorporating trees; and institutional arrangements required to promote plantation forestry in Indonesia.

5. RECALCULATING TIMBER VALUE

5.1 REVIEW OF THE SITUATION

Timber value is normally referred to as stumpage. Stumpage is defined as the value of timber as it stands uncut as trees in the forest; and that's what the purchaser or concessionaire should pay the forest owner (the Government) for harvesting the trees. Since it is paid to the State it is also called royalty or seigniorage. In fact, stumpage is the rent due to the owner of the forest or forest land. It represents the maximum price that a buyer would be willing to pay for the standing timber, and excludes the projected logging costs and expected profit of the buyer. If the price paid is lower than the economic rent of the stand, then the difference will accrue as additional (windfall) profit to the buyer.

Under the logging concessions being followed in Indonesia, for practical reasons it is not possible to capture the rent as one stumpage charge, considering the steps and stages and aspects involved in concession management. Timber rent is often grouped into components of initial charges (for the privilege of getting a concession assigned), annual charges (for continued enjoyment of privileges), production charges (linked to volume of production) and trading charges (related to export). Under each of these groups there are more than one charge or levy. For example, two important ones under production charges are royalty (stumpage) and reforestation fee/fund.

Forest/timber rent is an important factor in Indonesian forestry and is the dominant component of the forest revenue system. The forest revenue system in Indonesia consists of a number of charges, which have evolved, and assumed varying levels of importance, over the past thirty years. At present, the system consists, among others, of the following charges:

- Forest concession licence fee (Iuran Hak Pengusahaan Hutan or IHPH);
- Land and building tax (Pajak Bumi dan Bangunan or PBB);
- Forest products royalty (Iuran Hasil Hutan or IHH – recently renamed as Provisi Sumberdaya Hutan or PSH);
- Reforestation fee (or fund) Dana Reboisasi or DR);
- Scaling and grading fee (recently abolished); and
- Export tax (for logs and sawn timber)

These charges may be placed into two broad groups, i.e. area-based and production (or volume) based charges. Area–based charges consists of the forest concession licence fee (IHPH) and the land and building tax (PBB). In various years, IHPH contributed only about 0.5 percent of the total forest revenue collected; PBB contributes about 2.5 to 3 percent of the total forest revenue.

Production-based charges consist of the forest products royalty (IHH), scaling and grading fee, reforestation fee or fund (DR) and timber export tax. The IHH and DR account for about 96 percent of the total forest revenue.

5.1.1 Studies on Rent Capture in Indonesian Forestry

Several studies have made estimates of economic rent produced per cum of timber, regionally and nationally, and how much of it was captured from time to time. All studies adopt the Marshallian theory of economic rent as a point of departure, and use the stumpage value (net price at stump) method widely referred to in forest economics literature with slight variations (Wibowo, 2001). The main variables influencing the estimation of rent are: log price, cost of log production, and normal profit due to the factors employed, i.e. capital, labour and management.

Problems, differences and disagreements, occur in determining the following: (a) domestic and international log prices, because of lack of an open domestic market for logs and distortions in international log trade including illegal log exports from Indonesia, (b) impact of variations in species, forest types, log quality, and geographical accessibility on costs and prices, (c) appropriate level of normal profit, (d) taxes, charges and levies constituting economic rent, and (e) cost items, legitimate and otherwise, that can be incorporated in the estimation of both fixed and variable costs.

These problems are real but are reconcilable and/or can be addressed by using modified approaches such as use of aggregate data and weighted averages, international log prices represented by FOB prices in a neighbouring country like Malaysia, and simulation models.

Estimation of potential rent is only meant to be used as guidance for decision-making. Even assuming that the calculation is reasonable and reliable, it is unlikely that it will be possible to increase the charges and levies to that level. The formula applied in fixing the revenue to be realized in Sabah (Malaysia) is:

$$R = 0.85 (FOB - IOC)$$

Where:

R	=	Revenue to be realised
0.85	=	Rent capture coefficient
FOB	=	FOB price of logs
IOC	=	Industrial operation cost

Rent capture coefficient is to be decided by the Government for the country and/or for regions within the country. Rent capture coefficient is also a coefficient of efficiency in managing logging concessions.

Some 25 reports are available on economic rent of timber in Indonesia (for specific regions and for the whole country), covering different periods starting with 1972-73 (Ruzicka, 1979). It has been the common findings of these studies that the efforts of the Government in rent capturing have been too feeble. The rent capture coefficient in the best instances has been about 33 percent and at worst about 8 percent.

5.1.1.1 Present Position

A study commissioned by ITTO (Wibowo, 2001) suggests that in 1997-1998 rent capture in logging concessions could have been between 24 and 36 percent (average 30 percent), leaving a windfall of 64 to 76 percent to the concessionaires. This study covered 18 provinces and 80 species/species groups, used an aggregate model of forest management, treated transfers, both legal and illegal, explicitly and compared aggregate economic rent with trend of government's timber revenues and charges nationally and per unit (cum) of timber. The volume of uncaptured rent in terms of timber value was estimated as between Rp. 5.2 and 8.9 trillion. To put these figures in perspective "for the 2001 fiscal year the government hopes to raise Rp. 6.5 trillion from privatization of state owned companies; more interestingly, the uncaptured rents also account for 30 percent to 53 percent of Indonesia's foreign debt repayment in year 2001 of Rp. 16.93 trillion, assuming that the repayment stays at the level planned in the 2001 state budget " (Wibowo, 2001).

For the whole of Indonesia, rent capture in the 1990s, on an average basis, was about 20 percent as against 13 percent in the 1980s (Wibowo, *op cit*).

5.1.2 Impact of Uncaptured Rent

On an average, the estimated total of charges per cum of timber is about US$ 36.[9] By comparing the actual collected rent with the estimated economic (potential) rent, one gets an idea of the current level of efficiency in rent capture.

Comparing the log price with the total operational cost, it is seen that the operators are making sizable windfall profit. This uncaptured rent, depending on the situation and species involved, varies between 200 to 1000 percent of the revenue realised by the Government. The actual amounts of windfall profits would vary depending on to what extent the operators are carrying out the work properly. This not only affects Government revenue, but also re-investment in forestry development. Considering the volume of illegal logging taking place in the country and its contribution to further adding to the windfalls, the overall volume of unrealized forest revenue will be enormous. Combating this situation in all seriousness will not only be environmentally wise but also financially beneficial (Wibowo, 2001).

5.1.3 Other Deficiencies in the Forest Revenue System

Apart from the lack of an effective fiscal mechanism to capture rent due from timber resources, and the losses occuring through illegal logging, there are other deficiencies in the forest revenue system of Indonesia. Two of the important deficits are: weaknesses in revenue collection and absence of a compensatory mechanism against inflation.

[9] The current rates are : reforestation fee: US$ 16/cum; royalty : US$ 7-9/cum; land tax : US$ 1per ha for whole concession area; licence fees US$ 5-10 per ha; HRD levy US$ 2/cum.

5.1.3.1 Weaknesses in Revenue Collection

It has been noted that the reported revenue does not always match with the different figures regarding log production. Three different log production figures for the Outer Islands are available: (i) total log production including logs produced outside HPH and which in an appropriate way can be linked to total production of sawn timber and plywood. (ii) Log production as per scaling for collection of reforestation fees and (iii) estimated log production for royalty collection based on processed output. These figures were more or less matching till 1980-1981. Since then discrepancies were noted between the different production figures, and the discrepancies have been growing. Part of this can be accounted for by delays in payment of charges and log collection from outside production forests. However, these are indicative of the possible loopholes, malpractices (under-measurement, misclassification of spices, smuggling, under-reporting of production), and inefficiencies (loss in transport, lower out-turn than the assumed rate) in the system. These need to be corrected.

5.1.3.2 Effect of Inflation on Forest Revenue

While showing increase in nominal terms, total timber charges have declined steadily, in real terms. A major weakness of the system of forest charges in Indonesia is the absence of a compensating mechanism against inflation. By leaving the DJR unchanged (at US$ 4 per cum) from 1980 to 1989, the value of the fee in 1989, in real terms, had declined by 35 percent. The value of the concession licence fee, over the period of 1979 to 1989, had declined by two-thirds. Reforestation fee (DR) was the only revenue source, which has risen, in real terms, but only since 1989. Serious consideration should be given to subjecting forest charges to regular, say annual or semi-annual, reviews and adjustments. The intention should be to ensure that the real values of the charges are at least maintained in relative terms, if not increased. The more common method of indexing charges to product prices will not adequately serve this purpose, since timber product prices have traditionally not kept pace with inflation.

5.2 ISSUES

There are differences of views about the importance of recalculation of timber values to increase rent. According to some, what is important is to help the forest industries to survive and in that regard to address related problems such as illegal logging, social conflicts, land disputes etc. While agreeing to the existance of several important problems, the Mission feels that the flaws in timber pricing is the prime cause of most other problems – inefficiency, 'windfall' seeking behaviour, raw material wastage, inadequate development of captive plantations, high grading, corrupt practices etc. Some of the issues discussed earlier under illegal logging, forest-based industries and plantations have their origin in the deficiencies found in timber pricing and related policies. These *inter alia* include the following:

- adverse impact of raw material pricing on: efficiency of industries, investment in plantation forestry and entry by potentially more efficient users of the resource;
- industry policy based on inefficient export taxes, and official approval of a cartel controlling exports of processed products;
- lack of effective measures to encourage community participation in forest management and protection.

These have already been discussed under sections 2.2, 3.2 and 4.2. Some of the issues specifically concerned with the nature and current level of royalty and other charges on timber are dealt with here.

5.2.1 Environmental Values and Sustainable Forestry in Indonesia

World Bank studies in Indonesia show that the option of managing the forest sustainably generates significantly higher benefits than allowing current high raw material use patterns to continue until the resource is exhausted. In 1995, the Bank issued a working paper on the forest sector of Indonesia, in which it was concluded that the present value of the sector output (including only very conservative estimates of values for improved soil and water benefits, and none for biodiversity or carbon impacts) under a sustainable forest management scenario would exceed that of continuing the present pattern of use, by an amount of US$ 6 billion, using a real discount rate for NPV calculation of 11 percent per annum. This NPV of output from the wood products sub-sector under the sustainable scenario is 20 percent higher than under the non-sustainable scenario (World Bank, 1995b). Another perspective can be gained by the calculus that had Indonesia adopted resource pricing measures, strongly linked to creation of performance incentives by forest industry, as had been recommended by many national and international observers of the sector in the decade preceding the financial crisis in the country, not only would the current condition and therefore the value of the resource have been much better than it currently is, but the total incremental revenues that would have been gathered by the Government over the period 1995-1999 can conservatively be estimated at around US$ 6 billion.

By now the forests are over exploited, and future (direct) income generated from the resource will be lower. This may lead to increased pressure for conversion of forest lands into other more attractive uses such as for raising oil palm. However, the potential benefits generated from forest values (tourism, carbon sink, water conservation) is important, calling for sustainable management of the resource.

5.2.2 Inadequacy of Royalty and Charges

As has been noted, total of the royalty and all charges on timber captures only about 30 percent of the potential rent and hence highly inadequate. The basis and rationale adopted in fixing the size of royalty and the various charges is not clear. Moreover, they have nominally and generally remained at the same level, except for the reforestation fee. **The situation amounts to the general public of Indonesia subsidizing the private concessionaires to make windfall profits.** The inadequacy is all the more patent since the value of timber is only a small part of the total forest value and timber removal impacts on all other values, adding to the social cost. This is a fundamental issue in the forest revenue system. The industry would, naturally, prefer low forest charges, while the Government should aim to collect charges that reflect the value of the resource. The Government may decide to forego some revenues in order to encourage development of the industry, either generally or selectively, but always temporarily. The imposition of low charges should be a deliberate and transparent decision based on a clear understanding and assessment of the revenues foregone.

5.2.2.1 *Inappropriateness of Royalty and Charges*

There are several inappropriate elements in the system of timber royalties and charges in Indonesia.

- There is no element of competition in awarding logging concessions.
- The low level of charges encourages concessionaires to hold large tracts of forests without having to pay a proper price for that privilege.
- The charges are so low that they do not reflect the scarcity situation, and suppress market signals.
- There are no clear mandatory provision for review of royalty and charges for periodically adjusting to the level of inflation.
- The policy of log export ban and other forms of protection results in reduced price for domestic log supply and makes it difficult to have a realistic estimation of potential rent.
- The system of low rent has a strong element of concealed subsidy, distorting priorities away from efficiency and competitiveness.
- No support for the expected paradigm shift from timber orientation to sustainable ecosystem management and from profit maximisation to social welfare mission.
- The charges (e.g. DR, IHH) does not adequately differentiate species, grades and types of timber.
- The system components are not properly linked so that it is easy to evade payment of some charges, and such evasions have been happening.

5.2.3 Complicated Collection Process

There are a large number of charges on timber, which are to be separately assessed and collected through multiple points. This, often, complicates the collection process leading to delays and revenue leakages.

5.2.4 Problems in Revenue Allocation and Utilization

While the royalty revenue is to be shared among the central and local governments, reforestation fee is a specific charge, even though both are assessed on timber produced. DR is the largest, probably the most important and objective–oriented charge on timber. There has been allegations that the DR is being misused. While the size and nature of the DR focus on the need for urgent action to counter deforestation and forest degradation through establishment of forest plantations, the approach in that regard has not been consistent or adequate to meet the need.

5.2.5 Lack of a Forest Resource Accounting System

The importance of an adequate system of forest resource accounting, in order to highlight its multiple functions and multisectoral roles, and to ensure that the sector gets due

recognition in terms of policy and planning support, funding and above all the political commitment, cannot be overemphasized. This aspect, particularly the under-valuation of forest resource has been discussed earlier. The lack of a forest resource accounting system has affected the overall accountability in the sector and encouraged unsustainable practices. There is need for properly accounting the enormous externalities provided by forests.

5.3 MEASURES TO ADDRESS THE ISSUES

Some measures relevant to timber valuation have been covered under other sections. World Bank (1995b) had already recommended several reforms such as: replacement of log export taxes with significantly higher log royalties; removal of the requirement that logging concession holders must have ownership of large scale processing facilities; elimination of the processed products' export cartel; no further approval of conversion of forest land, until an effective classification of the forests into clear categories is completed; significantly improved procedures to monitor forest operations (probably via independent inspection activities) and to enforce regulations governing forest operations, illegal removals and reporting procedures; and an increase in the share of revenues from forest operations allocated to provincial and local governments, but conditional upon acceptable performance in managing regenerating-forest-areas and protected forests. Further in January, 1998 as part of its relief package for the Indonesian economy, the IMF included some specific conditionalities related to the forest sector in its negotiations with GOI, such as: an increase in forest land tax; repatriation of proceeds from the Reforestation Fund to the official budget, rather than retaining under the unmonitored control of the Minister of Forestry; abolition of existing levies and replacement by a forest resource rental tax.

An earnest followup on these is yet to take place. It is time that positive action is taken to pursue the oft-repeated but ignored plea for a "fair" price for tropical timber. Indonesia, with its pre-eminent position as the owner of one of the three largest, and probably the most valuable, remaining tropical timber resources in the world, is in a position to take a firm stand to obtain a "reasonable" price for its depleting resources. This would be possible only at a cost in the short-term, as the markets are likely to resist the new structure and levels of prices. Nevertheless, such a move will be consistent with, and be a positive step towards, reducing the national and global concern over wasteful tropical deforestation. Some measures required to address the specific issues on timber valuation are briefly dealt with below.

5.3.1 An Improved Framework for Forest Revenue System

The Forest Revenue System (FRS) should be designed to: (i) achieve Government policy objectives with minimum number of charges; (ii) be simple to administer and enforce; and (iii) be balanced, i.e. not dependent on a single dominant revenue source, not contain charges that yield low revenue, and not weak in its incentive effects. Each charge or groups of charges should contribute at least 10 percent, but normally not more than 50 percent of the total revenue.

The basic structure of the forest revenue system for Indonesia may still have to consist of: (i) concession charges; (ii) log production charges; (iii) forest products export charges; and (iv)non-timber forest products charges – probably with some modifications/innovations. These

charges, explained in the following sub-sections, may appropriately be integrated into one or two groups in order to streamline and simplify the system.

5.3.1.1 Concession Charges

Concession charges can serve a number of objectives, namely: (i) to reflect the security value of timber supply provided by the concession and (ii) to encourage better management and utilization of forests. Low concession charges may encourage the holding of large concession areas, which may, in turn, be utilized inefficiently. Concession charges are generally of two kinds – initial and annual.

Initial Concession Fee

Initial concession fee is a current charge. This is usually paid when the concession licence is issued. It is intended to cover mainly the cost of processing the application and to deter frivolous applications. The concession fee is however not intended to capture the economic rent, which is more appropriately done through other charges.

Annual Concession Fee / Premium

This is a proposed new charge. Introduction of an annual concession fee is proposed to serve as a premium for the assurance of future timber supplies at predictable cost. This premium should be linked to the value-related features of the area concerned; this can be imposed on the total concession area or on the volume. It has been suggested that, an annual fee based on total concession area can discourage high grading and the tying up of excessive concession areas. The quantum of the premium is best determined on a public bidding basis, at the first instance since it is the concessionaire who has to decide the premium that he is prepared to pay. The premium rate could be adjusted every five years, based on the "prevailing" premium rate set or offered. This would provide a mechanism against inflation.

An alternative is to introduce a premium bid or tender at the onset of a concession, as a one time payment. This system can also help allocate concession efficiently to its most valuable use. One of the disadvantages of this alternative is that it cannot account for future appreciation of value. Also because of the amount involved, the bid may tend to be low, or financially powerful enterprises may acquire most of what is offered. To counter this eventuality, the concessions will have to be auctioned in smaller parcels, which may not always be in the interest of efficient management.

Land and Building Tax

This is a current charge, effectively a land or property tax, and is paid annually on the total concession area. This would be an effective instrument to control the total size of individual concessions and discourage the holding of excessively large concession areas by companies. It is proposed that the PBB rate be reviewed and revised appropriately with the view to generating more revenues for use by the provincial and local governments, as well as to discourage the holding of excessively large concession areas by individual companies.

5.3.1.2 Log Production Charges

Production-based charges normally represent opportunities to reflect the differing values of species, sizes, grades, and location, and to price the products accordingly. They can also serve to influence the harvesting and utilization of standing and felled trees and are, therefore, important tools and incentives in forest management and utilization. This is a major component of the total forest revenue collected. The effectiveness of production-based charges will depend on the reliability of the measurement of production. This has been found to be generally weak and in urgent need of improvement. In Indonesia, these currently include: (i) forest products (timber) royalty; (ii) reforestation fee; and (iii) scaling and grading fee.

Forest Products Royalty

This is a current charge. Timber royalty should be reviewed and revised periodically in order to encourage fuller utilization of the standing or felled trees. Due consideration should be given to the variation in logging and other costs with location and forest type, and appropriate royalty differentials should be applied.

Reforestation Fee

As in the case of forest products royalty, this is a current charge on timber produced. Reforestation fee accounts for about 45 percent of the timber charges and is the one which has been revised and increased periodically, even though not to the desirable extent. At its introduction in 1980 the fee was fixed as US$ 4 per cum. It was raised to US$ 7 per cum from July 1989, to US$ 10 per cum from July 1990 and to the present level of US$ 16 per cum from 1996

Scaling and Grading Fees

This charge has recently been abolished. However, as scaling and grading activities directly affect the level of forest charges collected, it is important to ensure that it is carried out in a systematic, and sound manner. The present system is based on the company scaling and grading, with a 10 percent check by the forest service. The system needs further improvement. In some countries scaling and grading is undertaken by accredited private scalers/graders, and cost involved is charged to timber production.

5.3.1.3 Forest Products Export Charges

Export bans and export charges are imposed as a measure of protection for local enterprises. Thus, the export charges are related to trade and development policies of the country and are not intended to capture rent on standing timber. An export tax has an important advantage for policy analysis and determination – it provides data on current world market prices from which can be determined the level of protection to be accorded to the industry and the cost of that protection.

5.3.1.4 Non-timber Forest Products Charges

Charges on NTFPs consist mainly of royalty and export taxes. Export bans are imposed on raw and semi-finished rattan and on sandalwood. Only the charges on

commercially produced NTFPs are significant. Charges on other NTFPs are minimal or insignificant. Royalties on nine types of NTFPs (i.e. wood chips, chipwood, poles, pulpwood, charcoal, fuelwood, sandalwood, teak stumps, and ebony waste) are included in the royalty tariffs established and published by the Ministry of Forestry every six months.

Wood chips, chipwood and pulpwood are consumed by pulp and paper industry, often collected from HPH and through IPK. While these are to be charged less than sawlogs and plylogs, they should be subject to similar or proportional revision of charges as for logs. They are to be considered an integral part of the rent/stumpage system.

5.3.2 Improved Assessment of Log Production

Of the several charges and fees discussed under the forest revenue system, two items, which are directly based on the volume of production, are the royalty and the reforestation fees. All other charges from concession fees to export duties have other functions or objectives such as providing options and insurance, protection from competition, or provision of a production related service otherwise available through commercial firms.

For ensuring efficiency in rent capturing it is necessary to assess the production of logs correctly. Since the introduction of logging concession system there has been several changes in the system of assessment based on scaling at the stump site. In 1985, the forest products royalty was shifted from log volume to processed wood-product volume in order to help the wood processing industry during a financially difficult period. By a Presidential Decree of July 1990, it has been stipulated that calculation of royalty of timber be based on logs measured at the mill's logpond or logyard. The efficacy of the system of assessment, irrespective of details, depends on appropriate supervision, checks and monitoring. It is necessary to review the system to remove flaws in its practical application.

The purpose of the DR is to mobilize investment funds to rehabilitate the natural forests, which have been logged or to replenish the stock removed by other means – such as creating forest plantations, including all related expenses of research and technology development, HRD, and environmental conservation. In fact the natural forests have, *hitherto*, been logged with very little consideration or inputs for their sustainable management. And, considering that administration, utilization and management of forests will hereafter be carried out under the decentralized system there is need for increased efforts and funding to get the decentralised units prepared for the task. Whether the DR has been, or is being, appropriately used is an issue, which is beyond the TOR of the Mission.

There is no need to separately assess the volume of logs produced for the above two purposes (i.e. for royalty assessment and DR assessment) and the assessment made for one will serve the other. A more efficient way will be to make one assessment of all the production-based charges and establish a formula for allocating the revenue to different accounts – i.e. royalty and reforestation fees.

A consolidated single point revenue collection (or collecting revenue by grouping all land area based and timber volume based charges into two separate groups) with defined allocation criteria can meet the main considerations indicated above. The purpose ultimately is to reduce windfall profits, as it adversely affect efficiency and the urge for value-addition through refined processing.

5.3.3 Alternative Systems to Realise Timber Revenue

It will be useful to try on a small scale, systems of production different from the concessions to assess their feasibility for adoption – for example timber may be sold standing, to be logged within a short period of 1-2 years. Another alternative is to work-down the timber to a central/sales depot through contractual arrangements (logging contract) and sell by lots in public auctions. In both cases revenue is realised, which it is expected will have least leakage.

5.3.4 Increase Rent Capture

It is necessary to progressively increase the rent capture, aiming to achieve a coefficient of 0.85 to 0.90. In that regard, an increase of the total of royalty, levies and charges to generate at least twice the present level of total forest revenue, is considered feasible. This increase can be achieved by several alternate ways:

- By proportionately increasing all the charges or the most feasible ones, at one point in time or by steps phased over a year or two.
- By significantly increasing the current rent rate for pulpwood from natural forests (IPK).
- By adopting a competitive bidding procedure for initial granting of concession (or reallocation once the first cycle is completed), to capture part of the premium involved.
- By selling timber as logs in central/sales depots or as marked trees in forest to be cut and removed, in regular auctions. In these auctions, use estimated potential rent (using the most appropriate method) as 'upset' or starting bid, duly considering the cost involved in sustainably managing the forest.
- By privatizing FMUs, where the private entrepreneur (the one who purchase an area of forest at competitive market price) will be left to manage it as a purely private venture.
- Instead of relyling on one system, it will be advantageous to use a combination of two or more of the above.

All the above arrangements are in vogue in one country or another, with varying degrees of efficiency and success. Normally, there could be a prime or favoured system in a country with others adopted to a lesser extent to promote healthy competition and to serve objective comparisons.

5.3.5 Simplify Timber Revenue Collection

Assuming that the logging concessions will continue either as the only system or as one of the important systems of timber (forest) management in Indonesia, there is scope and need for simplifying the system. This can be done by avoiding the "nuisance" taxes and the number of points of revenue collection (say, just to two – one for land-based and the other for production-based), and also by introducing an adequate element of competition in the system.

We noted earlier that the initial concession fee is a small amount and covers initial expenses of awarding concessions. Instead, it can be used to recover the premium on the concession property or part of the consumer's surplus that will accrue to the concessionaire, representing the windfall profit expected continuously over a period of time – if the concession right is sold in auction. If a substantial initial payment is effected, then the annual land and building tax serves as a fee to hold on to the land with all the options it provide, whether timber is extracted on a regular basis or not. In most cases of forest concessions elsewhere, a large initial payment and smaller annual tax/charge payments are normal.

Alternatively, instead of a lumpsum premium bid, it is possible for the prospective buyer to bid on a rate per cum of wood. In such cases the successful bidder pays an advance deposit (which is regularly replenished) and harvests/removals are controlled by adjusting the value from the deposit amount. The per cum rate, in this instance, internalizes all other relevant dues.

If the premium bid for forest land holding is the preferred alternative, then it is necessary to collect the charges due on timber harvested. At present there are 4 different charges/fees related to production, and they can be merged together advantageously for purposes of collection, even though they have different specific objectives.

The forest/timber revenue can thus be grouped into two – land-based charges and production-based (timber) charges. In terms of relative share, it may normally be aimed that land-based charges account for 10 to 30 percent of the total and the rest (70 to 90 percent) is accounted for by production-based charges.

As a further simplification, in respect of all fragmented taxes/levies/charges forming forest revenue, a consolidated amount may be fixed per unit area per year (as a comprehensive package) based on estimates of allowable removal or by estimated volume of standing trees, duly indexed to log/product prices. The system is simple and will give better incentive for improving logging. As a start, at least the royalty and the DR, both based on volume of logs, may be collected together at one point.

5.3.6 Streamline the Concession System

Over the years, the concession system has developed a pattern and style of functioning independent of the rules, regulations and agreement conditions, establishing unhealthy conventions relating to various aspects of concession management. If the concession system is to continue it will require an intensive streamlining effort. Major actions required are listed:

- Review/remove ambiguities, inconsistencies and weaknesses in concession rules, regulations and agreements.
- Review and standardize the size of concessions.
- Establish/re-establish timber accounting and tracking system.
- Introduce a system of independent inspection and monitoring service.

- Use the services of reputed and experienced private agencies for scaling, grading and collection of charges on commission basis. Re-introduce scaling at the stump to avoid mischief.
- Instead of the current flat rate of royalty and DR, introduce a differential scale to take the quality/species/location and other differences into consideration.
- Make periodic adjustments to forest charges indexed to inflation rate.
- Avoid undue protection and promote competitiveness; instead of export taxes on logs and rough sawn wood adopt price rationalization to have the domestic price of primary products comparable to their FOB price.
- Introduce stringent conditions relating to waste reduction and waste utilisation.
- Introduce a system of **rewards and performance bonds** to encourage sound and efficient forest management practices.
- Establish a right balance of incentives and controls in the administration of forest concessions and implement the regulatory measures rigidly.

5.3.7 Other General Measures

Other areas of action, to improve the situation, include:

- research to promote forest valuation methodologies;
- establishing a Forest Resource Accounting System complemented by a System of Environmental Economic Accounting. This is important not only to capture the real value of forest contributions, but also to instill a sense of accountability on the part of resource managers;
- periodic inventory of forest resources to support planning for sustainable management.

Box 5

ACTION PROPOSALS TO RECALCULATE TIMBER VALUE

- Link the charges to be collected on forest products to the economic rent of forest resource. Further adjustments to be made in due course, based on review of the effects of the initial increase of charges.
- As a compensatory mechanism against inflation, semi-annual or annual adjustments may be made in the amount to be charged.
- If major changes are unlikely in the short run, consider the following interim measures:

- Double the present rate of forest concession licence fee considering the cost involved in processing applications and to serve as a disincentive for holding unduly large areas under concession by private entrepreneurs.
- Review the land building tax with regard to its objectives and adequacy.
- In order to capture the value of quality differential between forest concession areas, concessions may be allocated on the basis of publicly bid or tendered premium in the form of an annual concession fee payable per hectare over the area to be logged in a period of five years. The premium rate may be revised every 5 years based on the prevailing premium rates at the time.
- Revert to the system of charging timber royalty on the logs collected, increase the current rates and review the effects for further adjustments.

- Reforestation fee to be differentiated by species group, grade and quality of logs to prevent the tendency to hunt for high quality logs.
- Utilization of reforestation fee to be extended to all activities related to sustained management of forests including related research.
- Establish a Forest Trust to assist financing forest plantation development, using part of the accumulated DR.
- Increase the rent rate for pulpwood from natural forests (IPK)
- To reduce cost on collection of forest charges, reduce the points of collection, initially to two i.e. all land-area-based charges grouped into one, and volume-based charges into another.
- On a trial basis, try the feasibility of (i) consolidating all charges into one, to be charged per unit area, consolidating component charges fixed by the Government based on expected quantities of removal, and with a premium component to be bid in auction (or tender) for quality differentials, (ii) consolidating all charges into one, to be charged per unit volume of processed product, collecting charges at the processing site with a premium charge on exports to be collected using LC mechanisms.
- In the immediate term, provide high priority for collection of unpaid charges and arrears, taking action against defaulters, and plugging the leakages in the system of collecting charges.
- In the short and medium term, improve the revenue assessment and collection system to control evasions; introduce independent inspection services and mechanisms; and formulate and implement an improved scaling, grading and wood administration system.

- In order to wean away the industry from dependence on protection and subsidies, replace the export ban on logs and rattan with an export tax, similar to the one on sawn timber or preferably by a high royalty. Export ban to be confined to rare (and threatened) species or products (e.g. sandalwood).
- In respect of NTFPs, charges are to be imposed only on commercial production; forest dwelling communities to be allowed to use NTFPs for bonafide uses based on free permits or nominal fees.
- Introduce a system of natural (forest) resource accounting and incorporate it into the system of national accounts to reflect the real contribution of forestry.

5.4 PROJECT IDEAS

A project proposal is made here on "A Framework System of Forest Resource Accounting in Indonesia" incorporating the following components:

- Evaluation of existing system of forest revenue system and its weaknesses.
- Linkages between material accounting and financial accounting.
- A system of valuation for forest benefits and costs.
- Estimation of 'rent' consistent with the situation of scarcity of forest resource and its total value (use and non-use).
- A practical systems framework for optimizing forest benefits.

6. DECENTRALISING THE FORESTRY SECTOR

6.1 REVIEW THE SITUATION

Decentralisation refers to the transfer of political, fiscal and administrative powers from national to sub-national units of government. It shifts accountability from the central government to the regions, and is usually linked to some kind of an election process. Decentralisation is often partial since the 'centre' controls several aspects of governance for practical or political reasons.

Decentralization is a political reaction that strives to ensure inter-regional equity in the distribution of development and sharing of resources. Providing regional autonomy helps to facilitate and ensure upgrading of the people's welfare, equality and justice, democratization and respect towards local cultures and attention to the potentials and varieties of the Regions.

In a decentralised democracy, people at the local level should be empowered and be capable of making decisions on matters affecting them. They should also have certain

wherewithalls to put their decisions into practice. The effective implementation of decentralisation would depend on several factors: availability of institutions supported by skills and technology; infrastructure; access to information; planning and administrative capability; resource/asset base; revenue source; social harmony; political vibrancy and economic strength. This is an evolutionary process.

6.1.1 The Decentralisation Laws[10]

In terms of legislation, the spirit of decentralisation in Indonesia is captured in Law No. 22/1999 (UU 22/1999 on Regional Governance) and Law No. 25/1999 (UU 25/1999 on Fiscal Balance Between the Centre and the Regions). Government Regulation No. 25/2000 (PP 25/2000 on government authority and provincial authority as an autonomous region) provides elaboration/clarification on allocation of functions to central and provincial governments. These laws have dramatically changed the nature of governance and public administration in Indonesia. They constitute the most determined attempt to break the centralistic grip and to distribute power and influence between and among the various levels of government in a more balanced manner.

6.1.1.1 Key Features

UU 22/1999 provides wide and clear authority and accountability to the regions. Basically all Government's authorities are delegated to the regional governments, except defense and security affairs, foreign affairs, fiscal and monetary affairs, justice, religion, and *other functions* that can effectively and efficiently be undertaken only at the national level. The other Government functions could include: macro-level planning, fiscal equalization, public administration, economic institutions, human resource development, natural resources utilisation, strategic technologies, conservation and national standardization. Delegation of Government's authorities to regional governments is expected to be accompanied by provision of financial, technological, infrastructural and other facilities.

UU 22/1999 defines regional autonomy on the basis of five fundamentals: democracy, people's participation and empowerment, equity and justice, recognition of the potential and diversity of regions, and the need to strengthen the regional legislatures. **The law has decided that the district (*Kabupaten*) level be the main functional level of the decentralised local government, which is to have wide ranging autonomy.** The local level governments have responsibility for providing services to the community in public works, health, education and culture, agriculture, transport, industry and trade, investment, environment, land matters, co-operatives and manpower as well as for planning, financing, implementation, monitoring and evaluation, and maintenance. Districts can be given additional tasks as *"tugas perbantuan"* or co-administration, involving control over finance, civil services and organizational set up. Districts can re-transfer their functions to the provinces if they are not capable of handling them.

Provinces continue to have a double status as autonomous regions and as administrative regions under the command of the President. The main functions of the province

[10] The term Government under decentralization laws refers to the central government. Administratively the country is divided into provinces (*propinsi*), districts (*kabupaten*), sub-districts (*kecamatan*) and villages (*desa*).

is cross-regional, e.g. cross-regional government functions, cross regional macro-planning, human resources development and research, management of regional ports, environmental protection, trade and tourism promotion, pest control/quarantine, and spatial planning. Central and provincial level authorities are restricted to those functions that are explicitly mentioned in the law and the implementing regulations such as Government Regulation No. 25/2000 (PP 25/2000) on allocation of functions to central and provincial governments.

The devolution of power to the regions, not only involves the regional government as the executive branch, but also the local parliament or DPRD as the legislative branch. Checks and balances of power, which previously operated on a center-regional basis, will now primarily hinge on the separation of executive-legislative powers in the region.

6.1.1.2 Financial Autonomy

UU 25/1999 on Fiscal Balance Between the Centre and the Regions aims at empowering and raising regional economic capabilities; and generating a financing system for the regions which is just, proportional, rational, transparent, participatory, accountable and stable (provide certainty). It also establishes a funding system that reflects the division of functions (between levels of governments) and reduces regional funding gaps. Key stipulations of UU 25/1999 are as follows:

- Locally- or self-generated revenue sources of regional governments (Pendapatan Asli Daerah) are local taxes, local charges and fees, revenue from local enterprises. Other sources of local revenue are equalization funds (*Dana Perimbangan*), borrowings and others.
- Regional finances should reflect resource/revenue generation and needs.
- Equalization funds consist of: the regional share of the property tax (PBB) and property transfer tax (BPHB), regional share of natural resource revenues, general grants and specific grants (derived from total domestic revenues and special funds such as Reforestation Fund).
- From central government domestic revenues, 25 percent will be allocated to regional governments, of which 10 percent will be the share of provincial governments.

Under the Regional Autonomy Advisory Council (Dewan Pertimbangan Otonomi Daerah – DPOD), a grant administration has been established to advice it on grant formula and fiscal equalization issues.

Sharing formula for property tax and natural resource revenue under UU 25/1999 is as follows:

- Property tax (PBB): 90 percent for the regions and 10 percent for central government to be redistributed again to local governments.
- Property transfer tax (BPHB): 80 percent for the regions and 20 percent for central government to be redistributed again to local governments.

- Natural resources revenue from forestry, mining and fishery: 80 percent for the regions and 20 percent for central government.
- Natural resources oil revenue (after deduction of taxes): 15 percent for producing regions and 85 percent for central government.
- Natural resources gas revenue (after deduction of taxes): 30 percent for producing regions and 70 percent for central government.

It is expected that after full implementation of both the laws (UU 22/1999 and UU 25/1999), the regional share of Central Government spending will more than double to over 40 percent, and that some 60 percent of the development budget will be managed by the sub-national levels.

6.1.2 Implementation of the Decentralisation Laws in Forestry

Following the promulgation of UU 22/1999 and UU 25/1999, authority and responsibility for forest management have been decentralized to local level of government, mainly to *Kabupaten* level. Lands, including state forestlands, are to be under local government administration. All forestry activities with certain exceptions fall under local government management. The local governments welcome this new authority in the high expectation of improving their revenue. The local governments, however, have to equip themselves to manage the forests scientifically if they are to derive the potential benefits of this valuable resource.

Decentralisation in forestry covers three major aspects: forest production in public as well as private forest lands; service to the people in forestry business/processing activities linked to production; and protection of forests dedicated to conservation and ecosystem protection. The extent of forestlands in *Kabupatens* varies widely.

Delineation of authority and responsibility in forestry between levels of governments is generally linked to forest **ownership** (*penguasaan hutan*), forest **administration** (*pengurusan hutan*) and forest **management** (*pengelolaan hutan*), and covers aspects relevant to logging and forest product distribution and trade, supervision and monitoring of forestry activities, and community forestry.

Irrespective of ownership, aspects to be addressed at the regional level will include standards and criteria of forest management, procedures for determining of forest status (state forest, private forest, and community forest), and functions of forestlands (production, protection, and conservation). Forest administration activities will consist of forestry planning, forest inventory, forestland allocation and use, and forestry planning. Forest management activities will consist of forest boundary delineation, monitoring and supervision of forest functions, utilisation of forest resources and their control, reforestation and soil conservation, forest protection and nature conservation, forestry research, forestry training, forest products distribution and revenue collection. Forestry supervision and monitoring is a multilevel activity covering all aspects of forest management.

6.1.2.1 Division of Functional Responsibility

In Indonesia today, there are about 113 million ha of forestland, of which 60 million ha are production forests, 30 million ha are protection forests and 18 million ha are conservation forests (national parks and nature reserves), and 5 million ha are conversion forests (MOFEC/GO1, 2000a). Only national parks and nature reserves are to be managed directly by central government through it's National Parks Management Offices (Unit Pelaksana Teknis Taman National) and Nature Reserves Management Offices (Balai Konservasi dan Pelestarian Alam). The central Government, however, has the prerogative to ask the provincial or regional governments to manage any specific parks or reserves on its behalf. Some National Parks, such as Kerinci Seblat and Gunung Leuser, are inter-provincial, so they have necessarily to be administered by the central government. Although Marine Parks are always around small terrestrial ground, they are associated with open seas, which are under the central government jurisdiction.

While forest concession management is a regional responsibility, some large forest concessions are spread over 2-3 districts; in such cases there are two options – district/ regional governments concerned may join together establishing a joint administrative procedure for the concessions, or the districts can request provincial government to administer the concession on their behalf. Both these options are allowable under UU 22/1999.

Since most of the development activities (e.g. controlling illegal logging, forest fire prevention and control, restructuring forest industries, enhancement of community forestry) are to be undertaken by the regions and development projects are distributed accordingly to decentralised units, the size of development fund in the national budget has become proportionately small. Moreover, the regions increasingly have to raise their own revenue for financing routine and development expenditures.

6.1.2.2 Level of Preparedness

The level of preparedness at the local level to accept and adopt decentralised governance is reflected, among others, in the capacity of the regions to manage resources, to raise revenue, to resolve conflicts, to undertake development programmes, and to effectively deliver welfare to the people. These in turn depend on the manner and speed with which the different strategic steps (such as division and transfer of power, assets, revenue, staff and responsibilities) are taken up. In transferring power and responsibility to local government, assets and human resources to carry out the authority and responsibility are to be transferred altogether as a package.

As per UU 22/1999, there will be no hierarchial relation between the Department of Forestry at the centre, the Provincial Forest Services and the District Forest Services. Personnel and assets of regional forestry office become full responsibility of regional governments.

Meanwhile, *Kabupaten* governments are the most unprepared regional government level to manage forestry. *Kabupaten* government does not have institutional set-up (local regulations, organization, skilled manpower) and experience in managing forestry sector. It will take some years to equip the district forest services (branch of the erstwhile provincial forest service) into an able organization. It requires full commitment and effort to adjust the

technical/regulatory systems of the central and provincial forestry institutions to local governments in Kabupaten and municipality, although transfer of funds from central to regional government is already being done automatically through fiscal decentralization procedures. Similarly, it calls for considerable adaptability on the part of staff to fit into the new set-up. Redeployment of staff of the defunct institutions will also present problems.

General rules have been established and in some cases partly implemented to facilitate a fast transfer of assets and authority. Assets of Kanwil Kehutanan and its related technical offices are transferred to provincial government, including assets to implement deconcentrated responsibility of provincial government. Meanwhile, assets of the branches of provincial forest services are transferred to district governments. Assets of national parks will remain with the central government. Some human resource and equipment, important to implement the newly delegated authority from central government, may be transferred to provincial forest services, and from provincial to district forest services.

Revenue is generated from the forestry sector in many different forms. It is obtained directly from concessions in the form of taxes and fees. Both central and local governments derive revenues from forestry activities. Taxes of forest product export are collected by central government. Stumpage fee, reforestation fee and forest concession fee are mainly to accrue to the regional governments. Some revenues from forestry activities such as transportation retribution or inter-district removal charges are already being collected by the local government.

Most of the forest revenue collected by the centre is to be distributed to producing regions. But information about the location of revenue sources by regions is difficult to trace. In respect of reforestation fee, for example, provinces are supposed to find a suitable formula to allocate share of reforestation fund to districts. There are also problems to be resolved in relation to tourist revenues in National Parks managed by central government. Some formula has been in use for sharing and allocating revenues to producing regions. Regions providing large contribution to forestry revenue will receive large share. This will create some problems, since productive forests have disappeared in many regions. Efforts to generate more revenue from forestry activities in the short term may be detrimental for forest sustainability. And, regions with degraded forests will not be able to manage and rebuild them without central government assistance.

6.1.2.3 Planning for Forestry Development

There are some contradictions in the legal provisions for spatial planning. Law No. 22/1999 emphasises the role of local government in delineating and managing state forestlands. UU 25/1992 on spatial planning had provided guidance on use of forestland, and local government has authority and responsibility for detailed spatial planning and implementation. But UU 41/1999 on Basic Forestry Law, besides providing detailed directions on forestry decentralization and community participation, still acknowledge the dominant role of the central government in managing state forestlands. There are also other current forestry regulations which conflict with the decentralisation laws.

With regard to formalization of decentralization process, enactment of most government regulations and presidential decrees subscribing to UU 22/1999 and UU 25/1999 have been released, but almost none in respect of forestry. During the meetings and interviews the Mission was given to understand that there are some indications of reluctance in the

Ministry of Forestry to formally release authority to the regions. Regional level reaction on the slow progress of forestry decentralization is quite strong. Some districts have already exercised their power by giving permits to private entrepreneurs to run small forest concessions and have established district forestry services by appointing personnel to manage forestry in the district. In general, however, many regions continue to follow the old system; or are doing nothing because of the prevailing confusion. Disputes between centre and regions so far have not been solved completely, due to incomplete regulatory mechanism.

6.1.2.4 Interpretations and Actions based on Expediency

Some *Bupatis* have issued their own respective decrees as an elaboration of the Decree of the Minister of Forestry and Estate Crops No. 310/1999. The Head of Kutai District in particular, has issued the Decree or "Surat Keputusan" No. 19/1999 concerning Procedures of Granting of Exploitation Licenses (HPHH), where each license holder will be granted 100 ha. The interested parties or individuals should get some recommendation from Village Heads or Customary/Adat Chiefs and the District Forestry Office and then send their proposals to the District Office for consideration. Although the Ministry of Forestry and Estate Crops had postponed the implementation of the Decree/SK Menhutbun No. 310/1999, a number of Licenses of Exploitation had already been issued. Until July 2000, the Head of Kutai District alone had issued 133 Licenses of Exploitation. This means that about 13,300 ha of forest had been allocated for exploitation, in the Kutai District alone. In some other Districts, an unholy alliance of brokers, capital owners (timber buyers) and village elites (who obtain licenses from district authorities) are operating with an organised chain leading up to export of logs or supply of logs for processing.

While the extent of area over which, and the circumstances under which, concession rights and cutting permits can be issued by various authorities (district, provincial and central) is still unclear, there has been cases where (overlapping) cutting permits have been issued covering the same area by different authorities to different parties. This creates conflicts, environmental damages and economic injustice.

To avoid the situation getting out of control during the early part of the decentralization process in the forestry sector, the Central Government (Department of Forestry), took several measures for improving the forestry decentralization programme.

(a) On November 6, 2000, the Department of Forestry issued ten Ministerial Decrees concerning guidelines, criteria and standards for issuing forest product utilization permits.

(b) As of December 31, 2000 the Minister of Forestry has stopped accepting applications for logging Concessions.

(c) Until now, the Department of Forestry has transferred 24,105 forestry personnel, budget, infrastructure and documentation from 26 Forestry Regional Offices, 1 Forestry Training Center in Manokwari, Irian Jaya, 1 Forestry Senior High School in Manokwari, Irian Jaya, and 30 Forest Mapping and Inventory Sub-Centers, to the local governments.

Some initiatives are being taken up by Inhutani I to establish joint venture forestry enterprises involving private industry, based on MOU with local government. An ongoing

logging concession can be made into a joint venture with the agreement of the present concession holder. The profit accruing to the government can be shared among the various levels of the government – central, provincial, and district and also with the local community. Also in some instances the Association of Bupatis and Association of Concessionaires are known to be discussing about hassle–free arrangements for extracting timber from the areas available within the districts.

6.1.2.5 Revenue Sharing Provisions

Based on UU 25/1999 on Fiscal Balance Between Centre and the Regions and followed by Government Regulation No. 104/2000 on Fiscal Balance Fund, revenue sharing between central, provincial and district levels in forestry activities will be as given in Table 6.1.

Table 6.1 Revenue Sharing between Central and Regional Levels related to Forestry activities

(Percentage)

Source of Revenue	Central Share (percent)	Provincial Share (percent)		District Share (percent)	
		Producing Provinces	Non-Producing Provinces	Producing Districts	Non-Producing Districts
Tax on property of land and buildings	19.0	16.2		64.8	
Tax on land and building transfer	20.0	16.0		64.0	
Contribution of forest concession (IHPH)	20.0	16.0		64.0	
Provision of forest resources (IHH)	20.0	16.0		32.0	32.0
Reforestation fund	60.0	40.0			
Total revenue of central government (Dana Alokasi Umum)	75.0	2.5		22.5	

Source: Herman Haeruman, 2001

All revenues collected by central government from forestry-related sources are being automatically transferred to regional levels, starting 1st January 2001. In the National Budget of 2001, Rp. 607.9 billion (equivalent to US$ 79 million) of Reforestation Fund is being transferred as Dana Alokasi Khusus (Special Fund) to the regions. As part of Natural Resources Revenue Sharing, forestry is transferring Rp. 579.3 billions to the districts, and Rp. 148.5 billions to the provinces. Total transfer of revenue from forestry to regions has accounted for Rp. 1,335 billion or almost 2 percent of the total fund transfer to the regions (Haeruman, 2001).

6.1.2.6 Differing Views

During the meetings and interviews with persons of various backgrounds, the Mission received several views on issues related to decentralization.

- It is not possible to reverse the process of decentralization.
- Decentralisation of forestry to some 400-district entities will be unmanageable; carry out decentralisation only up to the provincial level (numbering 33), with centre providing crucial policy support and guidance.
- It is necessary to re-evaluate the condition of forest resources: to prepare for forestry decentralization; to provide background material for preparing National Forest Programme; and to develop indicators of forest sustainability for evaluation of the local government's performance.
- It is necessary to accelerate the preparation of executive regulations for decentralization, to serve as traffic signals for field implementation. Decentralization should be carried out in stages, because the present condition is not conducive for instant implementation. The regions should be more proactive in preparing themselves for carrying out the decentralization process, and improve consultations with communities. For example, in the forestry sector the regions can prepare Regional Forestry Programs in accordance with the NFP Guidelines and the specific condition of the region.
- It is necessary to set up a multi-stakeholder forum in the forestry sector that involves the central government, local government, NGOs, business operators and the *adat* community. The function and authority of the forum should be determined carefully.
- Schemes and criteria should be established for human resource allocation and enhancement, and for quick channeling of funds – duly applying principles of non-discrimination.
- Link decentralization suitably to fiscal/financial regulations, institutional capabilities, regional balance of development and peoples participation.

6.2 ISSUES

Indonesia is a large country with diverse cultures, religions, languages, tribal and ethnic differences and marginal racial variations, with historical, geographical and political divergences. In such a situation, Indonesia's decentralization laws contain several quasi-federal features. The implementation of decentralization in Indonesia has been facing various issues – legal, institutional, financial and others. The agonies of decentralisation, often, originate from mis-perceptions on the part of the different stakeholders about the various aspects of decentralisation.

6.2.1 Misperceptions about Decentralization

Differences in perception and/or misperceptions on the part of stakeholders envelope all aspects of decentralization – political, administrative, institutional, legal and fiscal. Some of the mis-perceptions are concerned with unrealistic expectations, limits and limitations of autonomy and decentralization, nature and importance of hierarchies and relationship/coordination among them, checks and balances in the functioning of decentralised systems, handling of cross-cutting issues, and interregional relationships and obligations.

These misperceptions can, often, lead to fissiparous tendencies. These and similar misperceptions and/or perceptional differences are also found in respect of specific sectors such as forestry – e.g. regarding importance of forestry in landuse, goals and objectives of SFM, forestry and food security and environmental security, role of peoples participation, forest use determination, need for conservation of flora and fauna, spatial planning for forestry, forest levies and tariffs etc. The perceptional problem on to the role and importance of forestry is related to forest deterioration historically linked directly and indirectly with forestland delineation, forest management, industrial forestry, and control and supervision in forestry sector about which there has not been any clear line of responsibility or accountability.

The two pieces of legislation (UU 22/1999 and UU 25/1999) on regional autonomy that were vague about what was on offer: whether devolution of all authority for resource planning and management, including decisions on forest status, or only authority to manage resources according to criteria laid down by the central government planners. Responsibility for management of all forests other than conservation areas (national parks and reserves) devolved to the district level within provinces, although criteria and standards are yet to be set by the centre. Also, communication between and among centre, provinces and districts relating to the subject of forestry is at the lowest point due to political reasons and due to mistrust. (Sunderlin, 1998, Barr, 2000).

The differences in perception between central and local government has created a simmering dispute about future forest management system. The Central Government wishes to introduce a forest management system based on watershed approach to avoid forests being fragmented. The implementation of this in the field is proposed to be executed by a Forest Management Board or a similar body to be formed for large regions or islands. The revenue is to be shared proportionally: 30 percent for central government and 70 percent for local governments. This management system is expected to increase local government revenue and provide more jobs for local people. About this proposal there is an allegation that the Ministry of Forestry is trying to hold-on to its authority by proposing to establish government enterprises under ***"perumisasi"*** on all production forests. *Perumisasi,* literally means privatization of government forest, where central government can have direct influence on their management. Understandably, the regional governments are opposing the proposal adamantly. The current perception of the local governments on decentralized forest management is that they have an absolute authority to manage the state-owned forest resources located in their respective jurisdiction. They have the feeling that the head of district administration (Bupati) is the highest authority in forest matters, and so tend to refuse any intervention from Central Government (Haeruman, 2001).

Unfortunately most districts have no capacity for detailed spatial and development planning for sustainable forestry development nor mechanisms to coordinate with neighbouring districts regarding forest and watershed management.

The aforementioned situation indicates that if the implementation of decentralization in forestry sector is continued with unclear forest management policy, the forest resources will obviously be over-exploited; and this has to be prevented.

6.2.2 Lack of a Clear Decentralisation Plan

Since decentralisation involves complex processes covering several sectors and a multitude of aspects related to governance, it is necessary to have a clear **decentralisation plan** with sectoral components for ensuring a smooth transition. Such a plan does not exist generally and particularly for forestry.

6.2.3 Need for a Comprehensive and Clear National Forest Policy

In the centralized structure of forestry sector in Indonesia, the main official document dealing with National Forest Policy was the Basic Forestry Law 1967 (UU 5/1967). The Basic Forestry Law of 1967 was both a law and a policy. Policy objectives and guidelines were also contained in the five-year development plan documents (Repelitas). UU 5/1967 has been revised/replaced by UU 41/1999, being the Basic Forestry Law of 1999. While UU 41/1999 has dealt comprehensively with certain aspects based on experience of the past 30 years, it does not provide an appropriate framework for addressing the policy issues being faced by the large number of decentralized public forestry administrations in the country. It does not provide strategic guidelines for undertaking forest development programmes in all its facets with organized peoples participation; nor does it articulate an innovative institutional structure suited for decentralized forest management. Issues such as over-use of forest resource, tenurial rights, role of private sector and local organizations, co-ordination and control mechanisms, resource accounting and accountability of forest managers and users have not been adequately covered. It also has several obvious contradictions and incongruities with decentralization policy and laws.

Decentralization of Indonesia's forestry sector should be managed as a policy tool to achieve sustainable and equitable forest management. Further, decentralization and all other policy and management inputs towards sustainable forestry development in Indonesia need to be addressed with a sense of urgency to prevent rapid rate of deforestation and forest depletion. In that regard, the National Forest Policy can be adapted to suit local needs.

6.2.4 Deficiencies in the Process for Decentralization in Forestry

Another important implication of decentralisation is the need to reform the old, and establish new, institutional instruments capable of supporting an effectively functional system of decentralisation, including tribunals and legal bodies to settle disputes and conflicts. In respect of districts which are not ready for receiving and exercising the decentralised authority, it is necessary to have alternative arrangements to carry out the decentralized functions until such a time when the required capacity is available within the district.

As part of the decentralisation process it is necessary to remove the legal anomalies and to settle disputes regarding land rights and other injustices, which have occurred as a result of centralized governance. (In South Sumatra alone thousands of ha of land was given back to the people as part of settlement of rights). The presence and power of the security sector (the Military and the Police) over public forest administration should be weaned away.

The hasty implementation of decentralization, without adequate preparation for smooth transition has caused a legal vacuum in some respects and deficiencies and contradictions in others. A basic problem in forestry decentralization is the existence of two laws that need

clarification, i.e. UU 22/1999 and 25/1999 on decentralisation versus UU 41/1999 on Basic Forestry Law that came out a little later. The Department of Forestry considers that UU 41/1999 regulates the decentralization with some limitations, while the regions consider UU 22/1999 and UU 25/1999 provide them with full powers, especially in relation to production forests and granting of forest concessions.

Most regions have ideas on what they are to do, because it is not significantly different from what was being done before. The problem is on 'how to do', for want of rules, regulations, codes of practices and guidelines. The huge problem of preparing regulations is mind-boggling. In August, 2000, the DPR, concerned at the delay in completing regulations for autonomy, passed a decision that allows regions to make their own by-laws without waiting for the center to do it, as long as they adjust their by-laws when the centre finally does prepare its regulations. Because the central government still has to promulgate hundreds of regulations, the biggest overhaul of Indonesia's government in 56 years takes place in an almost complete legal vacuum. Few regions are likely to invest efforts to regulate without an indication from the center as to what the future policy may be, leaving uncertainly for all (Vriens, 2001). Lack of rules and regulations have resulted in uncertainties and ambiguous roles among parties at local level in connection with forest management.

There are, as yet, no formalised arrangements for decentralization in forestry (laws are arbitrarily implemented before operational stipulations have been made available); forest laws need revisions; detailed rules and regulations appropriate for decentralized management of forests have to be prepared; contradictions in the legislation relating to spatial planning has to be reconciled. Thus the long overdue implementation of decentralization in forestry and political turbulence accompanying it have created confusion in the forestry legal system, weaknesses of the forestry institutions, and passive personnel in the field. Negative impacts caused by the legal uncertainties are much larger than that of improper implementation of UU 22/1999. It has been reported that deforestation is at its peak in many areas, due to illegal logging and encroachments.

Many of the forestry activities in the future will be conducted by community as part of the process of total decentralization (power to the people – democracy in forestry). Indigenous community had in the past enjoyed rights over large tracts of forestlands in Sumatera, Kalimantan, Sulawesi and Irian Jaya. Recognition of the traditional community right and *adat* law will help to re-establish their right to the forestlands. While the complex process of implementing decentralization will pre-occupy the Government(s), a risk to be consciously avoided is of the development itself becoming a moving target.

6.2.5 Inadequate Capability

Inadequate capability at decentralized levels is manifest, among others, in the poor state of forest management, low status of human resource development, lack of planning capability, lack of statistical/management information. Transferring human resource and other non-forest assets will become a major issue related to capacity of the regions to manage forestry affairs. Inventory of those assets and human resource in term of their capacity and capability is a strategic endeavor to develop rational redistribution according to regional needs, to understand the unfulfilled needs and to develop programmes to fulfill it. While many of the districts do not have the capacity to manage their forest, it is to be underlined that it was the

impact of centralized forest management, that robbed the districts of the opportunity to establish their capacity in managing the forest.

There is no accurate information on the extent of forestland within district boundaries, hence possibility of transferring asset and authority on forestlands cannot be done accurately. It is important to agree on good faith what forestlands are going to be administered under the district, provincial or central authority, how sustainable forest management is to be conducted, and management performance measured. Change over to a decentralized system is an opportunity for innovation and improvement; this in turn depends on institutional (personnel) capability established through education, experience and expertise. Such capability is to be built into the institutions and reflected in the accomplishment of their missions.

Division of functions and authority among institutions in forestry, vertically as well as horizontally, has never been done properly. Duplications and gaps are widespread – e.g. institutional duplications in forestry concession management and gaps in protection forest management. This will cause confusion in the process of decentralization in forestry involving downsizing the central and provincial setups, and strengthening the district and lower levels.

The situation is further complicated by the considerable differences in the preparedness of the regions to take up the task of governance. In forestry, transferring of assets, manpower and funds is just beginning to happen, the first being transfer of funds. Meanwhile, transferring of assets and human resource needs "receiving institutions" to be developed in the regions.

Particularly with regard to human resources, it is still a puzzle as to how the staff of Kanwil Kehutanan and Dinas Kehutanan in the provinces can be regrouped/reassigned to strengthen the districts. The problem can be solved by merging the staff from both the institutions into District Forest Services under the control of district governments. UU 22/1999 will be subscribed if all regions accepted these institutions as part of regional government. Several local governments have developed their own system of organization. The local government can accept or reject surplus central and provincial staff based on political decision. Some have even changed the nomenclature of forestry institutions. This is considered an anomaly in implementation of UU 22/1999 since public administration is still regulated by central government, and such trends can cause forest management to become fragmented. Lack of working synergy among sectors, inadequate facilitation of forestry institutionalization and limitation of funds have affected capacity building in forestry, considerably.

6.2.6 Need for Strong and Enhanced NGO Involvement

For many years, international NGOs have pressed for forestry policy reform in Indonesia; and in recent years, the initiative has been taken up and greatly expanded by Indonesian NGOs, e.g. WALHI, SKEPHI, LATIN, TELAPAK and regionally-based NGOs, e.g., PLASMA, PANCUR KASIH. Networks operating across Indonesia link many NGOs, e.g. WALHI (Indonesian Forum of Environmental NGOs) and KP-SHK (Community Forest System Consortium) and JKPP (Participatory Mapping Network). Typically, NGOs accept regional autonomy of their branches and partners in the provinces. Some NGOs show strengths in focusing on direct support to communities while other NGOs have concentrated more on an advocacy role, either at a general policy reform level or advocating policy action through highlighting specific cases. In the past the MOF was reluctant to allow NGOs to be full

members at the policy dialogue table. Since 1998, however, NGOs have noticed a greater willingness on the part of the Ministry to listen to their ideas (DfID, 2000).

6.2.7 Forest as an Economic Base

Forest resources can be exploited/liquidated for immediate gain or it can be managed sustainably as an economic base for long-term benefit of the society by the regional government authorities that have been assigned the responsibility for forestry in their respective jurisdictions. If decentralized governance is not adequately planned, immediate and short-term interests may lead to myopic vision on the part of political masters and bureaucrats, resulting in fast depletion of forests. Out of the 33 Indonesian provinces, forest resource is currently self-sustaining only in a few provinces. Fees from reforestation fund and other timber-based revenue are supposed to be distributed to producing regions, especially to the *Kabupaten* level. But, how much and to what local government the fund will be distributed is still unclear due to lack of information. Under current practices, the forest production and revenue realisation are not registered by *Kabupatens*.

Some provinces and several districts have lost most of their forests, and they will have to create new resource base through intensive plantation programme, requiring large investment. In other cases, downstream impacts of denuded watersheds call for urgent attention on restoration activities as cooperative effort of concerned local governments. Thus, over all, the differences in forest resource endowments and potentials among the regions loom large as an important issue – also, raising questions about cross-compensation mechanisms with regard to ownership and utilisation of forest resources.

In the absence of proper and stable economic bases for meeting revenue needs, some regions are known to have setup domestic trade barriers as tax bases. Regional autonomy, and the decentralization of fiscal policies are threatening domestic trade due to the creation of new trade barriers by regional governments. This may prove to be an unhealthy trend.

6.2.8 Forest Resource Security

This issue is linked to the role of forests as an important economic base discussed above. It underlines the need to : avoid fragmentation of forest resources; enhance role of forests to support environmental security (e.g. downstream benefits of watersheds) and food security; sustain and stabilize the direct and indirect values and contributions of forests. The aforementioned aspects are closely linked to:

- the treatment of terminated, partly completed and operational logging concessions;
- quality and extent of forest plantations and the need to enhance their productivity; and
- rehabilitation of degraded forestlands.
- enforcement of laws and regulations.

6.2.9 Ownership vs Stewardship

Considering that Indonesia is constitutionally a unitary state, it is an issue to be clarified whether the forests entrusted to the custody of the regional governments are in the nature of ownership or stewardship. The issue is made more complex in view of the need to maintain the environmental values of forests for the benefit of the larger society and that the rights and privileges enjoyed traditionally by the local community should to be protected to the extent possible and appropriate.

The implications relating to forest resource management covers: the conflicts among objectives (e.g. as a source of increased government revenue, as a resource for local livelihood security, as the underpinning for environmental security); the need for multisectoral and multistage coordination; the need to honour the past commitments made during the erstwhile centralized system (e.g. agreements relating to logging concessions, appropriateness or otherwise of mega-concessions; loans from multilateral development banks and donor supported projects); and the need to ensure job security of the personnel under the erstwhile system and/or the need to provide those affected with fair compensation.

6.2.10 Inadequate Revenue Source

Apart from the need for effective institutions and institutional instruments, decentralisation implies that there should be an adequate source of revenue to run the governance system at the centre and decentralised levels. For the districts and provinces, while self-generated revenues are crucial, the share of central revenues will often be vitally important. Such sharing is normally based on established criteria and is overseen by a Finance Commission or similar independent bodies. If its own revenue source is weak, the decentralized units will become unduly dependent on the centrally distributed general funds and project funds. That will work against meaningful autonomy and democratic decentralization.

6.2.11 Anomalies in Forest Revenue Sharing

There is, as yet, no clear and rational formula for sharing forest revenue realised in the form of taxes, levies and charges on timber and other forest products and services among the decentralized/autonomous entities. These entities vary considerably in: forest resource endowments, forest-based processing facilities, forest production and trade, need for forest rehabilitation and establishment of forest plantations. The districts with poor forest resource base may often need large investments on forest rehabilitation and creation of new forest resource base. Probably, the nation had benefited in the past from the financial resources generated by timber extraction from forests in those regions, which are now in a degraded state, and their claim for funds to rehabilitate the forest resource may have genuine merits. A more rational formula, which allows for justice and discretion is warranted in such cases.

6.2.12 Need for Financial Discipline and Efficiency

While rational allocation/sharing of revenue realised from forest management, and distribution of funds from other sources, are an important issue brought out prominently in discussions, it is also necessary to flag an additional dimension to the issue - i.e. the need for financial discipline and efficiency in utilizing the funds. Particularly, in the early stages of

decentralization, it is likely that the priorities may get skewed in favour of glamorous projects rather than of those with long-term durable benefits. Forest history is replete with such cases. Financial "due diligence", transparency, social audit, engagement of donors/NGOs are some of the important policy measures to ensure financial discipline and efficiency.

Attracting private entrepreneurs has to be based on a combination of appropriate incentives and controls. More than ever, market integration and the advance of information technology are totally changing the relationship between capital and space. The freedom of capital from place – even in the acquisition of raw materials – has increased its bargaining position towards place (Kusumawijaya, 2001). And entrepreneurs are concerned with better places – places, which can offer higher returns on investment. The paradox is that in response to the investor's demands for better places, overindulgent incentives will be offered that may cause social and physical damage. Threats to the environment have been reported, for example, as the result of deals concluded between local governments and private investors.

Financing sustainable forest management has become a difficult issue since it involves long-term investment and high risk. The banking system is not able to provide the required funding for forestry development; interest rates and loan conditionalities have made forestry development unattractive to investors. Only revenue from sustainable harvesting of existing natural forest can provide steady funding for forestry development. General Allocation Fund derived from forestry revenue and Special Fund derived from Reforestation Fund are the main sources of funding for forestry development. Efficient and effective uses of the funds are important for future of forestry. Efforts to abolish direct allocation of forest revenue for forest management and reinvestment will have detrimental effect on forestry since political support and additional funding for forestry have not been very assuring.

6.2.13 Need to Ensure Environmental and Social Harmony

There is a genuine fear that the impact of decentralization on forestry sector will be wide spread deforestation and environmental degradation, which ultimately will affect social harmony and developmental efforts. Since these impacts impinge on the life of the people (by affecting soil, water, climate, employment etc.) in a gradual and steady manner, it is often not recognised as a threat to be removed forthwith. Countries have had to pay dearly for this indifference and Indonesia will be well advised to address this issue in all seriousness.

6.2.14 Other Constraining Factors

Some of the additional factors which constrains the process of decentralisation include:

- Non-homogenous nature of community, which creates cascading conflicts. These conflicts arise due to denial of land rights to indigenous communities, differences in economic prosperity, and ethnic and social differences. Along with the above differences which have prompted demands for splitting up of provinces and *Kabupatens*, new expectations generated by decentralization have created proliferation of new provinces and *Kabupatens*/municipalities (GOI/Ministry of Home Affairs, 2000a).

- Inadequate revenue source for local Governments and the resulting tendency to overexploit and deplete the available forest resource (and other natural resources). Decentralization could create an over-confidence in local governments to exercise

their authority excessively in exploiting forest resources. UU 25/1999 allows regions to use their forests for the raising of general revenue, but does not prevent overexploitation, nor insist on SFM. Thus, there is fear that decentralization will give regional authorities the right to overexploit their forests (even intruding upon protected areas, as is now happening in Sumatra and Kalimantan). Moreover, facilitated by public pressure and legislative approval, forestlands under concessions or otherwise, are being allocated for non-forestry activities.

- Fragmentation of forest lands, which may result due to division of forest areas by decentralised district units. On this basis, some argue that decentralisation with regard to forestry should be to the provincial level and not down to the district level.

- Lack of articulation, consultation and communication. As legislation takes important first steps toward initiating decentralization in Indonesia, it tends to be vague, filled with loop-holes, and in contradiction to previously passed legislation and regulations that must be reviewed and in many cases cancelled before full-scale implementation of decentralization is actually possible. The process for developing this new legislation could have benefited from broader public participation and consultation in order to generate greater broad-based support, as well as to answer important questions about the level of decentralization (e.g. to provincial or district level) and clarification of responsibilities for administration and financing as a result of decentralization. In the absence of such consultation the "democratic reform" has unleashed the pent-up wants of the past, especially on the part of local communities and their elected representatives.

- Forests are viewed as a land bank for conversion into other forms of land uses. Detrimental impacts of such conditions on forestlands are very serious. In many districts in Sumatera and Kalimantan where population pressure is relatively high, conversion of forest lands is strongly supported by the community, legislators, and some branch of executives.

- Inappropriate considerations in spatial planning: Wood industries provide an example. Wood industries were established in regions considered feasible for such investment, since raw material could come from any place in and outside the region where the industry is actually established. With the implementation of UU 22/1999, temptation is very high for local government to use their forest only to supply the industry within their jurisdiction. Those regions that have no industry or less industry will build more industry; industry outside the forested region will starve.

- Lack of adequate provision to protect conservation forests. As per UU 22/1999, the authority of managing conservation forests and implementing forest conservation policy is the central government, but it does not provide for any central or regional mechanism to prevent overexploitation or conversion of protected areas.

- Difficulty to re-assign central service personnel who become redundant with decentralization. Officially the regions have to employ them. However, many regions have already made it clear that they are somewhat less welcome to join the local bureaucracy.

6.3 MEASURES TO ADDRESS THE ISSUES

Decentralization of the forestry sector is rightly seen as a means of achieving SFM. For a smooth implementation of decentralized forest management, some important factors, among others, have to be taken into account: laws and policies have to be clearly defined, organizational structures and mechanisms have to be established and, human resource, infrastructure and budget have to be provided. An urgent need is to critically review the roles, functions, organizations and capabilities of government agencies (and government-owned enterprises) in the continued development of the forestry sector, and to redefine and restructure these roles, functions and organizations to provide the capability to meet the growing and changing demands of the sector. More importantly it is necessary to ensure the long-term sustainability of the forest resources and the forestry sector in the country.

Decentralization in the forestry sector will require agreement between the central and regional governments, communities and other stakeholders on the responsibility and accountability for the management of forest resource. For such agreement to occur, all the stakeholders must have a common understanding of the concept of decentralization. Along with that, measures should be taken to address the major issues on a priority basis.

6.3.1 Framework and Sequenced Strategy for Decentralization in Forestry

A clear framework and sequenced strategy for managing decentralisation in forestry is required, specifying interim, medium and long-term measures (including arrangements for handing over assets, settlement of disputes and arbitration). This should cover all aspects related to decentralization in forestry, ensuring that the national fabric is kept strong and intact through the process, involving: identification and demarcation of decentralized entities, their specific and joint functions and responsibilities; establishment of an effective system of policy and planning; zonation and classification of forest resources, and objectives and strategies for their management; division of authority and responsibility among different levels of governance; participation and appropriate empowerment of local stakeholders; multi-stakeholder forum to define and design development activities and to resolve conflicts and controversies at different levels; re-structuring of institutions for efficient management of forest resources; a revised/reformed system of rules and regulations; task-based system and coordinating mechanisms for harmonious functioning of forestry activities; a high level National Forestry Council, to function as a policy-guiding , consultative and supervisory body with appropriate powers and composition.

The Mission considers that, at this stage, decentralization should be to the provincial, rather than to the district level. This can be done by invoking the provisions in the decentralization laws, which provide the mandate for macro planning to the central government.

For implementing the decentralization laws in forestry including the mitigation of its negative impacts, interventions are required at three different levels (Haeruman, 2001). The first level is the *systems level* concerning legal systems supporting the forestry decentralization process; the second level is the *organizational level* supporting implementation of policy and regulations designed within the systems level; and the third level is the *personnel level* supporting human resources enabling improved performance of individuals as well as institutions in implementing forestry development in the regions.

At the systems level, actions to be taken immediately are as follows:

- Establish interactive communication among stakeholders of the forestry sector (i.e. central and regional governments and legislature, NGOs, prominent academia, private sector and civil society) to generate consensus on legal status of forestry and possible division of responsibility among stakeholders to manage the forest sustainably. A high level forum should be established to facilitate the efforts. The forum may also act as a mediator for conflict resolution.
- Establish criteria and standards of good forest management, including of institutional set-up and personnel. Together with the Council of National Development for Autonomy (also known as Regional Autonomy Advisory Council - DPOD), Department of Forestry can formally categorize the regions based on institutional and personnel needs and future development.
- Provide general guidelines on public forestry administration and on interstate forestry business linking industry, trade and forest management.
- Establish general guidelines on revenue generation and sharing, and on recovery of cost of forestry activities.
- Establish performance standards for institutions and designated positions.
- Propose strategy on human resource, research and technology, and institutional system development.

At the systems level, the central and regional governments have to work together to establish harmony among the different levels. Establishment of a forum for dialogue among central and regional levels should be taken as a strategic step toward better communication and harmony among the different levels of governments. Initially, distinguished and independent institutions and individuals with knowledge in forestry and regional development matters should participate in and facilitate the forum. Cooperation among districts and provinces to cope with transboundary trade should be encouraged and built into the system.

Main efforts at the organizational and personnel levels will be at the district level, since they are the most unprepared, but authority-loaded, in public forest administration and management. Central government's share of reforestation fund, and foreign assistance, can be used in supporting and strengthening the districts.

6.3.2 Avoid Pitfalls of Trial and Error

Implementation of decentralization using the principle of 'trial and error' could disrupt the sustainability of the natural forest resource, because if there should be lots of 'errors', it then would be difficult to repair them (Haeruman, 2001). It may better be based on an expert system (using the services of subject matter experts to carry out analyses and to make recommendations), and a task force (participatory) approach.

To manage implementation of decentralization in forestry and to review progress of implementating recommendations, a task force (or task forces dealing with specific aspects such as legislation, finance, human resource etc.) dedicated to forestry decentralization can be empowered. It is also necessary to establish a multi-stakeholder discussion process at all

levels and use this process to develop a formal mechanism for public participation in all future discussions on policy, legislation and regulations.

6.3.3 Formulate and Promulgate a National Forest Policy for Indonesia

There is a seriously felt need for a well-articulated and comprehensive forest policy for Indonesia, specifying imperatives (e.g. efficiency, sustainability, people's participation), principles (derived from the fundamental principles enshrined in the Constitution), objectives, policy measures, strategies, institutions and instruments and implementation arrangements. The new forest policy to be formed after reviewing the Basic Forestry Laws (UU 5/1967 and UU 41/1999) should support decentralization in the forestry sector.

The national forest policy is to be designed to serve as the basic framework, enabling the provinces and districts to modify the details as necessary, to suit their specific needs.

For more on forest policy see Section 1.4.1.

6.3.4 Framing Appropriate set of Rules and Regulations

The need for a clear and appropriate set of rules and regulations and related instruments to implement and support decentralised forest management has been identified. Due to lack of rules and regulations covering the various aspects of forest management and administration, and the contradictions in some of those which have already been passed, a great amount of confusion and uncertainty exists about the efficacy of decentralization in Indonesian forestry. Several of the provisions in the available rules and regulations also require to be reconciled for consistency.

Views have been expressed by several persons interviewed by the Mission that the decentralization laws (UU 22/1999 and UU 25/1999) themselves need to be revised thoroughly along with the associated regulations and decrees, in order to rectify the anomalies and flaws.

6.3.5 Human Resource Development and Capacity Building

Undertaking human resource development and capacity building aimed at supporting decentralisation covers a wide range: public education and awareness creation about the important benefits of forestry; education and training (or re-training) for forestry staff at the district level; seminars for *Bupatis* and legislators; research and extension support; workers training; development/acquisition of specialized skills; re-assignment of surplus skills (human resource) from centre to districts; empowerment of local communities and community institutions; strengthening planning capability; information systems and data banking; promotion of collaborative forestry efforts (involving concessionaires, communities and *Bupatis*); establishment of model codes for good performance; promotion of civil society organizations and partnership mechanisms; stakeholder involvement and bureaucratic reorientation. The need for improving planning capability is specially underlined.

In all the efforts for capacity building and planning in forestry for decentralized levels, the Department of Forestry at the centre can play a leadership role and promote an orderly decentralization through:

- preparation of a comprehensive framework of regulations to govern decentralization;
- guidelines on forest land zonation for conservation, production and conversion;
- guidelines and norms for sustainable management of natural forests;
- guidelines for development of forest plantations;
- criteria for the collection, disbursement, control and administration of the Reforestation Fund;
- guidelines for the approval and management of concessions;
- review of the level, system of collection and distribution of forest taxes levied on the extraction of wood and non-wood products.

An interesting suggestion received, having practical merit, for enhancing technological and managerial capability is to establish institutions of higher learning related to landuse and forestry under the **system of land grant colleges/universities**.

6.3.6 Reformed and Strengthened Forestry Institutions

The change over from centralized to decentralized governance would demand changes in the institutional structure – from the centre all the way down to the village level institutions (including local level membership organizations and community organizations). There is need for: restructuring of the MOF at the centre and to strengthen forestry institutions at the provincial and regional levels; defining roles, responsibilities and powers of all institutional components; sharing and transferring of all related resources (material, financial and human) and records. Decentralisation in forestry assumes new dimensions, considering that forest resource has trans-generational importance.

Since the intention basically is to transfer the authority from the central Department of Forestry to the Forestry Office at the *Kabupaten* level (Dinas Kehutanan Kabupaten), most important changes are to take place at these levels. Actual size, structure and complexity of the institutions (and organisational units) will depend on the functions assigned to each. Basically, the centre of activity will be the district, supported by the functional wings and territorial wings located at the sub-district and village levels. Full responsibility for planning and implementation of forestry activities within each district will be the responsibility of the district forestry office. In the cases of districts which lack the required capability, these functions can be taken up by the respective provincial authorities, until such time the district becomes capable. At the higher levels, the Province (Governor) will essentially play the coordination role among the districts under it, including implementation of certain cross-district programmes.

The role of national level institutions (e.g. Department of Forestry) will essentially be two fold – (i) to advice the Central Government on policy matters, and international cooperation and (ii) to provide guidance to the decentralized levels and other autonomous agencies and undertake such activities to ensure high professional standards in the field of forestry (including implementation of certain cross-provincial programmes). Formulation of National Forest Policy, National Forest Programme, and national level laws and regulations will fall under the purview of the central Department of Forestry. **In short, the central Department of Forestry will**

assume a professional leadership role with more of a moral (professional ethics) authority than an executive authority.

It has been suggested that the number of personnel at the central Department of Forestry can be reduced to 20 percent of its present size; and the rest of the staff (having valuable experience and expertise) can be released to join the forest services at the *Kabupaten* level or to enrich the forestry profession in the private sector or to prosper as private consultants. All the field level investigations/studies as well as forestry research and conservation activities required by the Central Department of Forestry to fulfill its functions can undertaken through the provincial forestry offices or the district forestry offices. **The intension is to have an organically linked and cohesive structure**.

Some countries with decentralised structure in forestry have established a *national cadre of senior forestry professionals* who can be assigned to different provinces or districts by the cadre management authority. This system can help guarantee uniform standards of performance and enhanced professional integrity. Indonesia may consider the feasibility of such a national cadre.

In tandem with the bureaucratic structure discussed above, a parallel system of stakeholder fora should be established and promoted at all levels – to ensure that stakeholder concerns are not neglected. Further, it is essential that overseeing the entire sectoral development is entrusted to an independent high power body comprising eminent personalities – such as a National Forestry Council. Its actual composition, terms of reference, powers (discretionary and mandatory) and privileges, secretariat etc. can be developed by a small expert group formed for that purpose. Initially the National Forestry Council can provide guidance to ensure the smooth implementation of the decentralization process.

- Chaired by the President or the Vice-President, the membership of the NFC can include, the Minister of Forestry, relevant cabinet Ministers, Provincial Governors and representatives of *Bupatis*, the NGO community and industry. The TOR of the NFC, amongst others can include: identification of central and provincial government responsibilities in addition to items of joint responsibility; sharing of forest generated revenue; coordination and hormonization of forest laws, taxes, norms and standards for forest management and harvesting; protection and management of conservation areas; rehabilitation of degraded forest lands; criteria and guidelines for utilization of the reforestation fund; concession management etc.

- If deemed necessary, Provincial Forestry Councils (PFCs) can be established in all provinces, parallel with the NFC, to co-ordinate actions of districts within each province. The PFCs may be chaired by the respective Provincial Governor, and its membership may include all the *Bupatis* in the province, the forestry and relevant departments in the province, community leaders, and representatives from NGOs and industry.

The secretariat of the NFC will have a vital role to play. Its location is also important. The Mission recommends that the secretariat for NFC be provided by the Ministry of Forestry. Once the broad conceptual design for implementing decentralization in forestry is agreed to,

the details should be planned and implemented in phased and timely manner. Implementation should be based on an approved plan following the general framework as explained earlier.

6.3.7 Develop Forest Resource Base and Sustainable Resource Utilization

The main purpose of reforms in the forestry sector is to support resurrection of forests and to promote forestry development – involving forest resource conservation, expansion/creation, enhancement (improving productivity), management (including protection from injurious agents such as fire), utilization and monitoring. Actions in these regards would also include such related and relevant aspects as role of small/medium/large scale industrial enterprises; joint forest management; forest cooperatives; forest infrastructure; criteria and indicators for SFM; system of ecolabelling for forest products and so on. Specific recommendations on some of these have been given elsewhere in the report. While all existing valid concessions are to be respected pending a review of their liabilities to government, management practices to implement SFM, land claims etc, as an interim measure, there should be a moratorium on approval of new forest concessions except for the 100 ha. concessions within the authority of *Bupatis* to be restricted only to areas zoned for conversion.

6.3.8 Ensure Security of Forest Resource

While security of the forest resource is closely linked to its management, in Indonesia, it also has a somewhat different connotation due to the past involvement of the military in logging concessions, as part of keeping **"order in the border".** In the name of national security (by allocating forest business ventures to be managed by the security forces), forest security (including of protected areas, watersheds and plantations) have been compromised.

While decentralization is expected to address the security issue effectively, there is a widespread feeling that forest security is to be achieved through management efficiency and not through involvement of the military. Proposals were presented to the Mission for promotion of projects on land and forest industry development along the border with Malaysia.

- Establishment and management of transboundary conservation areas and strengthening the existing Bentuang Karimun/Lanjak Entimau project.
- Development of forest industries based on concessions in the border areas.
- Development of plantation agriculture in suitable areas to generate employment opportunities to complement development of forest industries.

6.3.8.1 Perumisasi Proposal

A business-oriented forest management model was presented to the Mission by the previous Minister of Forestry Hon. Nur Mahmudi Isma'il, which has already been mentioned. The proposal is to manage all production forests (with clear potential for success as an enterprise) through multi-stakeholder public (state owned) companies (BUMNs) or, in cases where BUMNs are not feasible, through private companies. (see Section 6.2.1).

The multi-stakeholder companies will involve all layers of Government – central, provincial, district and village; and one company will have control over all production forests in an island (such as Sumatera). Planning of the BUMNs will be the responsibility of the centre

and the district forestry offices will have responsibility for supervision and control of forest management and harvesting activities within their respective jurisdictions. Profit will be shared by the participating governments as follows:

Centre	:	30 percent
Province	:	30 percent
Kabupaten	:	30 percent
Local	:	10 percent

In situations where BUMNs are not feasible, the responsibility for production management will be given exclusively to the private sector or the Government may decide to hold shares up to 40 percent. In cases where an area is exclusively under private sector management royalty realised will be shared between centre and lower levels – centre 20 percent and lower levels 80 percent; D.R. realised will be shared with 60 percent going to the centre and 40 percent to the lower levels. Where the Government is holding shares, apart from royalty and DR, the profit earned on investment will also be shared with 30 percent to the centre and 70 percent to the lower levels. In all cases district forest administration will be responsible for preventing illegal activities in the forest areas.

6.3.9 Enforce Financial Discipline and Control

In any decentralized system of governance, part of the revenue needs are generated locally by the decentralized units and part is obtained as their share from higher levels whose revenues include collections attributable to the lower level units. The sharing of revenue by hierarchically higher units are decided normally by an independent commission, based on an agreed formula.

The local governments do not have unlimited freedom to levy taxes as they wish to make up the shortfall in revenue; and they are to follow broad guidelines formulated in that regard by the centre. In the present situation in Indonesia, however, these norms are known to have been violated. An important weakness noticed in most decentralized situations is the lack of financial discipline and propriety leading to irresponsible and improper expenditures and lack of accountability and transparency. This is an area where meticulous controls are required. Involvement of civil society should be encouraged in that regard.

6.3.10 Promote Forest Conservation

It is necessary to emphasize the need for this action since conservation is an area which is often overlooked, being overshadowed by socio-economic problems and pressures. It has been the experience in many decentralized situations that local priorities of poverty alleviation and employment generation cause the conservation issues to be put aside. What is of interest is that forest conservation can also help to improve local income through eco-friendly activities such as eco-tourism, collection and use of non-wood forest products, supply of authenticated plant genetic materials, provision of amenity services and so on. It is likely that the future will see more such possibilities – e.g. carbon credit and such other internationally tradable instruments.

Local people can also be engaged to protect the integrity of conservation areas, parks and other ecologically sensitive sites. These possibilities are to be made known to the people

and politicians and there is need: to conduct an inventory of these potential benefits of forestry, and to sustainably utilize them for the common good of the community. These can be captured under the banner of a National Forest Programme. Following the dictum "think globally and act locally" can, often, be rewarding in forestry.

6.3.11 Promote People's Participation

An important objective of decentralisation is to enable and develop people's participation. People's participation is also an important means of achieving effective decentralisation.

Participation in decision-making is both an objective and a means of development. Participation is not a technology; it is a process of social action and social change. People's participation is a socio-political concept related essentially to rural development and is concerned with people taking development initiatives to decide what to be done and how, and to do it. People's participation is not a new concept; it reflects old social values of village communities, re-emergence of which is prompted by the failure of non-participatory development goals. People's participation in forestry includes:

- Promoting forestry development through people's participation; and
- Facilitating people's participation (or improving the ability of people to participate) through forestry.

Millions of people living in rural areas, in and around forests, depend on forestry for their livelihood. Often, their aspirations for a more decent, secure and equitable way of life are tied up with forestry development. Meaningful participation of these people can help all parties involved to find solutions to their respective problems.

6.3.12 Committed Management of Transition

As the experience so far shows, it is not the formality of the laws of decentralization, but the perception of it on the part of the players that is important and real. Having already started the march towards decentralization, what is necessary is to ensure steady progress and refinement. It requires, above all, a proper and committed ***management of the transition***.

6.4 PROJECT IDEAS

A proposal is made here for a project on "demonstration of dencentralised multi-stakeholder forest management models in selected regions of Indonesia". The models will be established in selected provinces which face greatest threat of land-use conflicts under HPH and/or HTI management. The objective here would be to conserve significant areas of natural forest estate and well-established forest plantations. The key feature of such model forests will be the "demonstrate and disseminate" approach to sustainable forest management. There are several pilot projects that have enjoyed considerable success but their potential to act as models of change has not been adopted by any private or public institutions with a countrywide presence, due to the lack of mechanism for demonstration and dissemination.

An advantage of decentralized forest management is that it facilitates actions suited to the local situations and need. Therefore, there cannot be one universal model, which can be applied to all the potential situations. What is required is to demonstrate how the principles involved in decentralization (e.g. peoples participation, discussion/consultation among stakeholders, locally generated criteria and action proposals etc.) can be put into forest management practices. Few representative districts may be identified based on geographical coverage and nature of forest resources, and support provided to promote cooperation and better understanding between forest managers, concession holders, local communities, NGO's, etc. to serve as demonstration models for sustainable forest management.

The project, incorporating several alternative models, will involve: selection of representative model sites; assembling of background information including maps and history of previous operations, current composition etc.; stakeholder discussions; participatory management planning; setting criteria and indicators for SFM – also compare them with LEI/FSC standards; seminars and workshops on management-related aspects involving various levels of administration and local groups; compare the positives and negatives of implementing the different models in terms of their impact on society, ecology, and economy. The project should have a minimum duration of 5 years, preferably 10 years.

Box 6

ACTION PROPOSALS TO IMPLEMENT DECENTRALISATION IN INDONESIAN FORESTRY

- Prepare a clear framework and sequenced strategy (including an enabling environment) for decentralisation in forestry.
- Establish a forum, as necessary, with membership consisting of those selected from central and regional levels, executive as well as legislative, NGOs and prominent members of the academia or universities, to develop consensus on the interpretation and modification of UU22/1999 and UU41/1999, and build it into government regulations and decrees.
- Establish a clearing house for forestry assets and manpower to be decentralised; categorize them according to criteria and standard for regional forest management; estimate the needs and availability of resources of the centre, provinces and districts to facilitate new investment in forestry and related manpower development.
- Enhance awareness of decision makers, political parties and opinion leaders about the role and functions and importance of SFM.
- Mobilize universities and NGOs to assist decentralization process in forestry. With international assistance, the universities and forestry NGOs will be able to provide effective and efficient facilitation among stakeholders for forestry decentralization.
- Formulate and promulgate a comprehensive National Forest Policy and strategy for Indonesia, based on policy research on important issues, duly articulated by stakeholders and reflecting their aspirations, and fully in tune with the new decentralised governance.

- Undertake participatory boundary definition, resource zone mapping and participatory forest inventory; identification and documentation of existing customary community forest management systems, customary forest rights and *adat* laws.
- Delineate areas for conservation, production and conversion; allocate forestlands to district, provincial and central level management; start allocation of forestlands immediately for districts and provinces that are well ahead in capability (for forest management) and develop map of forestlands by districts and provinces. The programme should be developed with involvement of regional authorities, transparent and accountable to avoid lengthy and costly dispute among stakeholders. Attach all facts and procedures when formal transfer takes place.
- Establish a clear and appropriate set of rules, regulations, codes of practices, guidelines and related instruments to implement and to support decentralised forest management.
- Undertake human resource development and capacity building aimed at supporting decentralized forest resource management; enhance forestry planning capability at all levels (particularly at the Kabupaten level).
- Redefine job and responsibility of forestry sector institutions and regions as necessary. Redefinition includes simplification and increased roles to the community. Since decentralization will increase diversity in forest management techniques and procedures, the institutions established should be properly equipped to manage diverse situations and to produce synergy with partners in forestry development.
- Reform and strengthen forestry institutions; improve the institutional structure and linkages. Reduce the size of central Department of Forestry, strengthen forestry, institutions at Kabupaten level, appropriately enhance other levels. Promote people's participation and roles of NGOs and Civil Society Network. Establish co-ordination and conflict resolution mechanisms
- Establish a high level National Forestry Council (or a similarly designated body) to function as a policy guiding, consultative and supervisory body.
- Rationalise funding for forestry development, to meet diverse needs of decentralised units; provide financial management assistance to districts, linking Regional Special Allocation and Reforestation Funds. Efficient and effective use of the funds will help to develop forestry in poor and rich districts alike.
- Enforce financial discipline and control through involvement of civil society.
- Develop/enhance forest resource base (and revenue source) and its sustainable utilisation; establish/provide standards and criteria for SFM; support decentralised units with necessary technical assistance.
- Ensure security of forest resource with efficient and people-oriented approaches to production forestry and by delinking forest protection from the country's military force.

- Establish viable models of forest production management to ensure maximum social benefit; develop models of community forest management and administration, especially within sub-district or *Kecamatan* level and preferably within village system. Encourage community participation in sustainable forest management.
- Promote natural forest conservation as a social priority in view of its long term benefits.
- Allow the legitimate range of interests of all concerned, both public and private, and those of local inhabitants to be respected and bring about their effective participation in all stages of the policy formulation and implementation process.
- Promote organized, institutionalized and structured participation of people in SFM.
- Make SFM obligatory by law, with the central government being responsible for determining SFM criteria and indicators and monitoring their implementation.
- Determine macro-spatial planning in forestry at the provincial level, with the central government facilitating synchronization of these provincial plans.
- Ensure that forest management at the district level including the issuance of utilization licences by *Bupatis* complies with macro-planning and SFM specifications.
- Ensure tenure security to indigenous communities.
- Develop a pilot project to implement models of decentralised forestry as envisioned by the laws and in accordance with good forestry governance. Choose representative locations for the pilot project to cover variations and divergent situations.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1. CONCLUSIONS

Indonesia is one of the few tropical countries with an extensive area under forest cover, accounting for about 60 percent of the total area. It is also one of the world's largest producers and exporters of tropical wood products. Forest and forest industry sector is an important part of the Indonesian economy.

The old system of forest management has failed to sustain the economic, social and environmental benefits of the forest resources of the country. Illegal logging and deforestation are prevalent and increasing. The forest industries are not competitive in the world market and are facing raw material supply deficit. Forest plantation programme has been unsuccessful for various reasons. Forest rent capture is very low and timber is valued much lower than its scarcity value. And, the decentralization process in the forestry sector is being clouded by the

lack of implementing regulations and misinterpretation of decentralization laws. Consequently, there is need to reform the system.

Often, the crisis situation brings weaknesses to the surface, as had happened during 1997-1998 financial crisis in Indonesia. The paradigm shift, following the crisis, from a centralized authoritarian rule to democratic decentralisation in governance has come as an opportunity to undertake reforms in forest management in terms of concepts, practices and institutions, to achieve SFM.

Experience around the world has shown that democratic decentralisation, as a socio-political concept and development model, has several merits over centralized authoritarian system provided 'genuine' decentralisation is earnestly promoted, pleas and pressures to legalise the illegal are rejected and powerful vested interests are kept in check. However, this optimism must be tempered because such a paradigm shift is still evolving. Success of democratic decentralisation will depend on appropriate and reformed policies, unbiased enforcement of the rule of law, organised people's participation, transparency and accountability in financial dealings, democratic and representative institutions, sense of sharing and objective forthrightness and a fair and equitable system of co-operation, co-ordination and conflict resolution.

7.2. RECOMMENDATIONS

The earlier sections have dealt with major issues affecting the forestry sector and have provided detailed recommendations. In summary the recommendations are:

I Undertake appropriate measures/actions to address the basic problems related to the issues of illegal logging, restructuring of forest industries, forest plantations, recalculation of timber values and decentralisation in forestry.

(a) Establish a system of multistakeholder consultative process for sustainable forestry development.

(b) Establish a high-level National Forestry Council chaired by the President of the Vice President to function as a policy guiding, consultative and supervisory body.

(c) Formulate and enforce a reformed National Forest Policy.

(d) Install appropriate and properly structured institutions to enforce the policies.

(e) Establish a mechanism for resolving land conflicts affecting SFM through legal means.

(f) Formulate and implement a National Forest Programme with both provincial and district components (RFPs) and detailed programme plans (e.g. forest plantations, forest industries etc).

(g) Undertake measures to mobilize funds for sustainable forestry development , with emphasis on domestic resources.

(h) Develop special measures for dealing with: promotion of NWFPs, rationalizing of shifting cultivation, forest fire management.

(i) Establish forest resource accounting system and rectify the existing accounting distortions.

(j) Institute co-ordination and monitoring mechanisms.

(k) Build skills and capability in forestry at the local level and establish suitable human resource development programme(s).

II Address illegal logging and other related illegal activities in forestry by appropriately invoking the provisions of laws and regulations supported and complimented by policy interventions and balanced incentives.

a) Impose a temporary ban on log exports, not exceeding 3 years.

b) Implement timber certification and log audit.

c) Undertake measures to increase the level of deterrence.

d) Introduce/implement a system of performance bond in forest concessions.

e) Establish an anti-illegal logging task force answerable directly to a high authority, either the President or the Vice President.

f) Bestow attention to socio-economic welfare of the local community and involve them as partners in fighting illegal logging.

g) Modify and restructure the HPH system.

h) Introduce special measures to protect conservation areas.

III Rationalise and reform the structure and functioning of forest industries (including closures where necessary) covering size, products, location, efficiency, ownership; limiting to sustainable availability of raw material, whether public or private; and removing perverse subsidies which encourage malpractices and financial improprieties.

(a) Evaluate the existing wood-based processing industrial units for their fitness to continue production; close down illegal and inefficient mills; enhance efficiency and competitiveness of those units which are viable.

(b) Promote small-scale forest based enterprises.

(c) Balance supply and demand of wood raw material.

(d) Promote downstream value added production of forest products for obtaining increased retained value.

(e) Promote pulp and paper industry based primarily on pulpwood plantations.

(f) Promote alternate panel products which can be produced from logging and process residues and small dimensioned materials.

(g) Support and strengthen research, extension and training related to forest industry development.

(h) Strengthen coordination among relevant agencies to ensure a healthy growth of the sector.

IV Develop/expand high yielding and efficiently managed forest plantations as the major source of industrial raw material, emphasizing on: suitable species and sites, economics of production and return on investment, community benefits and involvement, increased environmental values, and control of potential malpractices in the use of land and loans such that the plantation programme supports sustainable forestry development.

(a) Expand the definitional boundary of forest plantations, as far as it refers to this recommendation, to include enrichment/rehabilitaion planting in degraded forests with indigenous species.

(b) Formulate a master plan for forest plantation development.

(c) Promote private sector investment and community participation.

(d) Take measures to rescue the troubled joint-venture HTIs by adopting the following alternative measures:

- Sell government share (14 / (21 + 14) x 100 = 40 percent) of equity to prospective investors, linking it with rescheduling of DR repayment.
- Link the sale to restructuring of raw material sources for the pulp and paper industry. Reduce significantly IPK wood licence for pulp and paper industry and require the industry to acquire the troubled HTIs and to continue maintenance of the plantations.
- Wherever the above alternatives are not feasible, liquidate the HTI.

(e) Introduce inter-planting and under-planting with valuable crops including medicinal and aromatic plants in forest plantations.

(f) Implement an intensive research programme covering all aspects of forest plantations.

V Simplify and streamline valuation/pricing of natural forest timber with a view to improve the capture of economic rent, to remove concealed subsidies, to limit windfall profits and to induce efficiency in forest resource use. Rent rate for pulpwood from natural forests (IPK) should be increased significantly.

(a) Link the charges to be collected on forest products to the economic rent of the forest resource based on periodical reviews.

(b) Reforestation fee to be differentiated by species group, location and quality of logs to prevent the tendancy for high-grading.

(c) Establish a Forest Trust to assist financing industrial plantation development, using part of the accumulated DR.

(d) Reduce the number of collection points of forest charges initially to two - area based and volume-based; on a trial basis try the feasibility of consolidating all charges into one (i.e. single point).

(e) Introduce a system of natural (forest) resource accounting, linked to the system of national accounts.

VI Decentralise the forestry sector, within the broad provisions of the decentralisation laws, appropriate to the sectoral needs and special characteristics of the provinces and districts, and based on a well thought-out decentralisation plan – involving stakeholder participation and consultations; division and transfer of powers and responsibilities; formulation of clear and adequate rules and regulations and guidelines and norms for SFM; designing and installing of institutions with required skills and capability; an agreed system of allocation of revenues and revenue sources; co-ordination mechanisms and a system of monitoring and control.

(a) Prepare and implement a clear framework and sequenced strategy for decentralization in forestry, including transitional measures.

(b) Establish a clearing house of forestry assets and manpower to be decentralized in order to facilitate sharing of resources.

(c) Undertake participatory boundary definition, resource zone mapping and identification/documentation of existing community rights.

(d) Determine and ensure tenure security to indigenous communities.

(e) Enforce financial discipline and control through involvement of civil society.

(f) Establish and demonstrate viable models of forest production management at district and sub-district levels.

(g) Determine macro spatial planning in forestry at the provincial level, with the central government facilitating synchronization of these provincial plans.

(h) Make SFM compulsory by law, with the central government being responsible for determining SFM criteria and indicators and monitoring their implementation through multi stakeholder process with independent third party monitoring.

(i) Ensure that forest management at the district level including issuance of utilization licences by *Bupatis* complies with macro-spatial planning and SFM regulations.

7.2.1. Project Ideas

The Mission also recommends several ideas for international assistance in support of SFM in Indonesia. These have already been explained in the respective sections.

1. Policy studies and strengthening of policy analysis and planning capability in the forestry sector institutions in Indonesia, at all levels.
2. Support for establishing a functioning process and framework for a National Forest Programming System (including Regional Forest Programmes) in Indonesia.
3 Development and implementation of guidelines to control illegal logging in Riau and West Kalimantan.
4 Application of forest cover density monitoring – satellite imagery to verify illegal logging.
5 Preparation of a restructuring plan for forest industries in Indonesia.
6. Preparation of a plantation master plan for Indonesia.

7. A framework system for forest resource accounting in Indonesia.

8. Demonstration of decentralised and multi-stakeholder forest management models in selected districts of Indonesia, in the provinces of Banten, Riau, West Kalimantan and North Sulawesi.

7.2.2. Immediate Agenda

From the large number of recommendations the Mission has drawn up an immediate agenda of action by the government of Indonesia with the support of the international community (see box 7).

Box 7

IMMEDIATE AGENDA

- Initiate and achieve the establishment of a National Forestry Council , specifying the role of MOF as providing the secretariat for NFC and task forces linked to it (e.g. anti-illegal-logging task force), and in formulating NFP as stipulated by the IPF/IFF.*
- Strengthen policy and law enforcement to curtail illegal logging – e.g. promulgation and pronouncement of policies relating to settling of tenurial issues in forest lands.
- Initiate, develop, articulate and implement a strategic plan for restructuring forest industries.
- Initiate, develop, articulate and implement a sequenced (phased) strategic plan for decentralising SFM involving well thought-out institutional measures, covering levels of decentralization, division of functions and responsibilities, and accountability, avoiding over-regulation.
- Rationalise and streamline HTIs, with special emphasis on joint-venture HTIs.
- Prepare and implement (with international assistance) a project for demonstrating models of decentralized and multi-stakeholder forest management in selected districts of Indonesia in the provinces of Banten, Riau, West Kalimantan and North Sulawesi.

*this refers to the IPF/IFF guidelines on National Forest Programme.

7.2.3. Articulation of ITTO Technical Mission Report

To facilitate intensive discussion of the ITTO Mission findings and recommendations, it is strongly suggested that "retreats" may be organized, attended by the Minister of Forestry and senior staff of MOF (and also senior staff of other ministries). ITTO may provide assistance in that regard. If appropriate, additional "retreats" may be organized to appraise the provincial governors, *Bupatis* and other relevant authorities about the ITTO Mission findings and the

resolve of the Government regarding its follow up, so that the message of the report can be fully appreciated and supported.

REFERENCES

Ball, J.B and C. Brown (2000). *World View of Plantation Grown Wood. Invited Paper: Sub-Plenary Session A 5. XXI IUFRO World Congress.* 7-12 August 2000. Kuala Lumpur, Malaysia.

BAPPENAS/JICA/ITTO (1999). *Tropical Forest Fire:* Prevention, Control, Rehabilitation and Trans-Boundary Issues. Proceedings of the International Cross Sectoral Forum on Forest Fire Management in South East Asia, 7-8 December 1998. Jakarta.

Barr, Christopher (2000). *Profits on Paper: The Political Economy of Fiber, Finance and Debt in Indonesia's Pulp and Paper Industries.* CIFOR, Bogor.

Barr, Christopher (2001). *Will HPH Reform Lead to Sustainable Forest Management? Questioning the Assumptions of the "Sustainable Logging" Paradigm in Indonesia, "Banking on Sustainability: Structural Adjustment and Forestry Reform in Post-Suharto Indonesia"*, Centre for International Forestry Research (CIFOR) and WWF Macro Economics Programme Office: Washington D.C.

Barr, Christopher, David Brown, Anne Casson and David Kaimowitz (2001). *"Corporate Debt and the Indonesian Forestry Sector" in Which Way Forwarded? Forests, Policy and People in Indonesia,* edited by Carol J. Pierce Colfer and Daju Pradnja Resosudarmo, Resources for Future, Washington D.C.

Brown, C (1999). *Global Forest Products Outlook Study.* Thematic Study on Plantations. FAO. Rome.

Callister, D.J (1992). *Illegal Tropical Timber Trade*: Asia Pacific. Traffic Network Report.

Contreras–Hermosilla, Arnoldo (2001). *Forest Law Enforcement.* (Paper prepared for World Bank – Unpublished Draft).

DfID (2000). *Multistakeholder Forestry Programme: Strengthening Decentralised Institutional Arrangements and Policy Mechanisms for Sustainbale and Equitable Forest Management in Indonesia.* Programme Memorandum. July 2000. LTS International/DfID.

Dudley, R.G (2000). *Factors Leading to the Current Illegal Logging Situation in Indonesia*: A Systems Dynamics View. CIFOR, Bogor.

EIA (2001). *Illegal Timber Trade in the Asean Region* – A Briefing Document for the Forestry Law Enforcement Conference Preparatory Meeting. Jakarta, 2-3 April 2001.

FAO (1991). *Forestry Studies, Indonesia*: Project Findings and Recommendation. FO:UTF/INS/065/NS Terminal Report. Rome.

FAO (1998). *Asia-Pacific Forestry towards 2010.* Report of the Asia-Pacific Forestry Sector Outlook Study. Rome.

FAO (1999). *State of World's Forests*. Rome.

FAO (2001). *The Global Forest Resources Assessment 2000*: Summary Report. COFO-2001/INF-5. Rome.

FLB News (Forest Liaison Bureau Newsletter) (1999). *Forest Plunder Threatens National Parks; Illegal Logging the tip of the iceberg.* p. 4-8.

FLB/EU/DfID (1999). *Memorandum on the Indonesian Forest Sector.* Joint contribution of EU Forestry Projects to the meeting of the Consultative Group on Indonesia. Paris, July 27-28, 1999.

GOI/FAO (1991). *An Agenda for Forestry Sector Development in Indonesia.* UTF/INS/065/INS Forestry Studies. Jakarta.

GOI (1992). *UU NO. 24 Tahun 1992 Tentang Penataan Ruang (Law No. 24/1992 on Spatial Planning).*

GOI (1999a). *UU NO.47 Tahun 1999 Tentang Kehutanan (Law NO. 47/1999 on Forestry)*

GOI (1999b). *UU NO. 22 Tahun 1999 Tentang Pemerintahan Daerah (Law No. 22/1999 on Regional Governance).*

GOI (1999c). *UU NO. 25 Tahun 1999 Tentang Perimbangan Keuangan Pusat Dan Daerah (Law No. 25/1999 on Central and Regional Fiscal Balance).*

GOI (2000a). *Laporan Perkembangan Otonomi Daerah (Report on Development of Decentralization).* Ministry of Home Affairs. May 2000. Jakarta.

GOI (2000b). *Peraturan Pemerintah No.25 Tahun 2000 Tentang Kewenangan Pemerint Ah Dan Kewenangan Propinsi Sebagai Daerah Otonomi (Gov. Reg. No. 25/2000 on Authority of Central Government and Autonomous Provincial Government).*

GOI. Office of the Coordinating Minister of the Economy, Finance and Industry (2000c). *Removing the Constraints: Post CGI Meeting on Indonesian Forestry.* Jakarta. 26 January 2000.

GOI (2001a). *Peraturan Pemerintah No. 2 Tahun 2001 Tentang Pengamanan Dan Pengalihan Barang Milik/Kekayaan Negara Dari Premerintah Pusat Kepada Pemerintah Daerah Dalam Rangka Pelaksanaan Otonomi Daerah (Gov. Regulation No. 2/2001 on Transfer of assets from central to regional government in regional autonomy).*

GOI (2001b). *Keputusan Presiden No. 5 Tahun 2001 Tentang Pelaksanaan Kewenangan Kabupaten/Kota* (Presidential Decree No. 5/2001 on Implementation of Regional Authority).

Haeruman, Herman (2001). *Critical Evaluation of Indonesian Decentralisation Laws (UU No. 22/1999 and UU No. 25/1999) and related regulations with special reference to Forestry Sector.* Study Commissioned by ITTO.

Hardcastle (1999). *Potentials and Limitations of Forest Plantations.* Unpublished Draft (Prepared for World Bank).

Hasim, Danuri (2000). *Decentralization of Forest Management in Indonesia. Paper Commission by ITTO.*

Kusumawijaya, Marco (2001a). *Enterpreneuralism and Capital Mobility. Jakarta Post, 26 March 2001.*

Kusumawijaya, Marco (2001b). *Power of Capital in Decentralization, Jakarta Post. 27 March, 2001.*

Marsh, E.K (1962). *The Introduction of Fast Growing Exotic Tree Species to meet the Timber Requirements of Developing Countries.* Papers, UNCSAT Conference E/Conf. 39/C/13, 1962. Geneva, Switzerland.

MOF/GOI (2000). *Report of Institutional Task Force for Forest Sector Decentralization, MOF, Jakarta.*

MOFEC/GOI (2000). *Address of the Minister of Forestry and Estate Crops at the CGI Meeting.* Jakarta. 1-2 February 2000.

MOF/JICA/EU (2000). *Proceedings of the 5th Workshop on Consolidation of Forestry Action Plans and Policies.* Jakarta, 3-4 October 2000.

Nasendi, B.D (1997). *A State of the Art Report on Some Recent Forestry Policies, Initiatives and Achievements in Indonesia.* MoF, Jakarta.

Purnomo, Agus (2001). *Elements and Recommendations on Illegal Logging.* Study Commissioned by ITTO.

Runyan, Curtis (1998). *Indonesia's Discontent.* In World Watch. Vol. 11,No.3. May/June 1998. pp.12-23.

Ruzicka, I (1979). *Rent Appropriation in Indonesian Logging: East Kalimantan, 1972-73 – 1976-77. Bulletin of Indonesian Economic Studies, Vol. 12, No. 2.*

Salleh, M.N (1997). *Challenges in Enhancing the Productive Functions of the Tropical Rain Forest. Proceedings off the XI World Forestry Congress, 13-22 October 1997.* Antalya, Turkey.

Sarijanto, Titus (2001). *Kehutanan Menjawab Krisis.*

SAF (Society of American Foresters) (1964). *Forest Terminology:* A Glossary of Technical Terms used in Forestry. Washington, DC.

Scotland, N., A. Fraser and N. Jewell (1999) *Roundwood Supply and Demand in the Forest Sector in Indonesia.* Indonesia – U.K. Tropical Forest Management Programme.

Shiva, Vandana (1996). *Monocultures of the Mind: Perspectives on Bio-Diversity and Bio-Technology.* Nataraj Publishers, DehraDun, India.

Sidabutar, Hiras (2001). *The Indonesian Forest Industry.* Study commissioned by ITTO. Jakarta.

Sunderlin, William D (1998). *Between Danger and Opportunity: Indonesia's Forests in an Era of Economic Crisis and Political Change.* CIFOR, Bogor.

Suparna, Nana (2001). *Forest Plantations in Indonesia.* Study Commissioned by ITTO.

Telapak Indonesia And Environmental Investigation Agency, (1999). *The Final Cut:* Illegal Logging in Indonesia's Orangutan Parks. Telapak, Bogor.

Vriens, H.W (2001). *RI's Chaotic Decentralization, Jakarta Post 13 March 2001.*

Wadsworth, F.H (1997). *Forest Production for Tropical America.* USDA Forest Service. Agriculture Hand Book 710. Washington, DC.

Walton, T.E (2000). *Coordination and Implementation of Forest Strategy in Indonesia*: Ten Years of History and Some Directions for the Future. Paper presented at the Workshop on "Forest Strategy: Coordination and Implementation at Country Level" held at the World Bank. Jakarta. May 16-18, 2000.

Wibowo, Dradjad (2001). *Recalculation of Timber Values. Paper commissioned by ITTO.*

World Bank (1995). *The Economics of Long-term Management of Indonesia's Natural Forests.* Jakarta.

World Bank (1999). *World Bank Involvement in Sector Adjustment for Forests in Indonesia:* The Issues. Jakarta.

World Bank (2001). *Forest Law Enforcement Program: East Asia, 2001*

WFC (1997). Proceedings of the XI World Forestry Congress, 13-22 October 1997. Antalya, Turkey.

Zobel, B.J. et. al. (1987). *Growing Exotic Forests.* Somerset, N.Y, John Wiley and Sons.

Appendix - I

TERMS OF REFERENCE FOR ITTO TECHNICAL MISSION TO INDONESIA

(Specified in Decision 12 (XXIX) of ITTC dated 4 November, 2000: Strengthening Sustainable Forest Management in Indonesia)

Under the direction and guidance of the Executive Director of ITTO, the Mission will assist the Government of Indonesia to identify ITTO support especially in formulating action plans to achieve sustainable forest management in Indonesia. More specifically, the Mission will:

- Assess elements of forest programmes in Indonesia and their actual implementation and identify related shortcomings.
- Assist in formulating pilot programmes: (i) to restructure the forest industry including *inter alia* downsizing the industry, and improving industrial competitiveness; (ii) establishing forest plantations; (iii) recalculating timber values; and (iv) decentralizing forest management.
- Assist in formulating an action plan with strong measures to combat illegal logging.
- Prepare and submit a report to ITTO, not later than the 31st session of ITTC, with recommendations for future work in this area.

Appendix - II

MEMBERS OF ITTO TECHNICAL MISSION TO INDONESIA

Dr. B.C.Y. Freezailah (Mission Leader)	6, Jalan Kent Enam, Off Jalan, Maktab, 54000 Kuala Lumpur, Malaysia Tel: (60-3) 2691-8426/9200-5008 Fax: (60-3) 2698-1495 E-mail: Freezailah@hotmail.com
Dr. C. Chandrasekharan (Mission Rapporteur)	TC 15/174, Prathibha, Rao's Colony Lane, Vellayambalam, Trivandrum – 695010, India Tel: (91-471) 320053 Fax: (91-471) 324722 E-mail: cherukat@vsnl.com
David Boulter (Member)	71 Downsview Cr. Ottawa, Ontario K2G-OA4, Canada Tel: (1-613) 723-9216 (home) E-mail: Dboulter@NRCan.gc.ca
Dr. Willem Herbert Diemont (Member)	Alterra Wageningen University and Research Centre, P.O. Box 47 NL-6700 AA Wageningen, The Netherlands Tel: (31-317) 477863 Fax: (31-317) 424988 E-mail: W.H.Diemont@Alterra.wag-ur.nl
Dr. Hasim, DEA (Member)	Gg. Emad, Duku Jawa, Rt. 01/RW 06 Cikaret, Bogor, Indonesia Tel: (62-251) 389 262 Hand Phone: (62) 0816 136 8404 Fax: (62-251) 322 196 E-mail: tam01@dephut.cbn.net.id hasimdr@yahoo.com
Dr. Hiras P. Sidabutar (Member)	Jln. Abesin No. 71, Bogor 16124, Indonesia Tel/fax: (62-251) 312 977 E-mail: ratubadis@plasa.com

Nana Suparna
(Member)

Jl. Kiai Caringin 14,
Jakarta Pusat, Indonesia
Tel: (62-21) 6386 3807
Hand Phone: (62) 811 16 8534
E-mail: nsuparna@cbn.net.id

Agus Purnomo
(Member)

Jl. Mega Kuningan Lot 8-9/A9,
Kantor Taman A9, Unit A-1,
Kawasan Mega Kuningan,
Jakarta 12950, Indonesia
Tel: (62-21) 576 1070 ext. 300
Fax: (62-21) 576 1080
E-mail: apurnomo@wwf.or.id

Dr. Dradjad Wibowo, MEc.
(Member)

Jln. Taman Malabar 18,
Bogor 16151, Indonesia
Phone/fax: (62-251) 630 478
Hand Phone:(62) 0818 942 324
E-mail: dhwibowo@indo.net.id

Appendix – III

MEMBERS OF THE COUNTERPART TEAM TO THE ITTO TECHNICAL MISSION
(Appointed by the Minister of Forestry as per Decree 30/Kpts-II/2001 dated 12 February 2001)

1.	Dr. Boen M Purnama	Leader
2.	Ir. Hariadi, MBA	Deputy Leader
3.	Johnson Tampubolon, SH, MA	Member
4.	Ir. Edi Suryadi Martawidjaja	Member
5.	Ir. Hariyanto Eko Waluyo	Member
6.	Dr. Yetti Rusli	Member
7.	Dr. Agus Sarsito	Member
8.	Dr. Hadi Daryanto	Member
9.	Dr. Tetra Yanuariadi	Member
10.	Drs. Suryama	Member
11.	Dr. Mubariq Ahmad	Member
12.	Ir. Iman Santoso, M.Sc	Member
13.	Ir. Bambang Murdiono, MSc	Member
14.	Ir. Yansen Tangketasik, Msi	Member
15.	Ir. Wisnu Prastowo, MF	Member
16.	Ir. Agus Justianto, MSc.	Secretariat
17.	Ir. Ali Djajono, MSc	Secretariat
18.	Ir. Harjono, M. Eng	Secretariat
19.	Ir. Budi Hartanto, MBA	Secretariat

Appendix - IV

PROGRAMME OF ITTO TECHNICAL MISSION IN INDONESIA

Pre-mission Visit

Date:	Programme:
13 February 2001 (Tuesday)	Arrival of Mission Leader and Mission Rapporteur in Jakarta
14 February 2001 (Wednesday)	- Internal Meeting of ML and MR with all Indonesian Team Members - Meeting with the Members of the Counterpart Team established by the Minister of Forestry
15 February 2001 (Thursday)	- Continuation of internal meeting - Meeting with Ibu Ratna and Johnson Tampubolon of IDCF - ML and MR lunch with Minister of Forestry, Hon Dr. Ir. Nur Mahmudi Isma'il - Meeting with Minister of Forestry and senior officials - Working dinner with Bapak Bambang Soekartiko (ML & MR)
16 February 2001 (Friday)	- Meeting with DFF - Meeting with Bapak Herman Haeruman of Bappenas (ML& MR) - Internal wrap-up meeting - Working dinner with Bapak Untung Iskandar (ML & MR)
17 February 2001 (Saturday)	ML and MR return to home station

First Mission

12 March 2001 (Monday)	Arrival of all international consultants in Jakarta (Hotel Santika)
13 March 2001 (Tuesday)	First Meeting of the Full Team Mission
14 March 2001 (Wednesday)	Internal Meeting (Decentralization, Restructuring Industry)
15 March 2001 (Thursday)	Internal Meeting (Plantation, Illegal logging, Recalculation of Timber Values)

16 March 2001 (Friday)	- Call on Minister of Forestry HE Nur Mahmudi Isma'il - Call on Secretary General MOF, Soeripto		
17 March 2001 (Saturday)	- Brainstorming between Mission and Members of Counterpart Team and IDCF (Bogor, New Mirah I Hotel). - Dinner hosted by Dr. U. Iskandar, ITTO Spokesperson		
18 March 2001 (Sunday)	- Interaction between Team Members		
19 March 2001 (Monday)	11.00 – 13.00	-	Meeting with Djamaludin Suryohadikusumo
	14.30	-	Meeting with the team of experts at the Natural Resources Management Program of the USAID
	19.00	-	Dinner meeting with Prof. Emil Salim at Mulia Tower
20 March 2001 (Tuesday)	07.00	-	Meeting with Ibu Ratna Djuwita Wahab, M.Sc
	09.00 – 11.00	-	Meeting with ISA
	15.00	-	Meeting with M. Chipeta of CIFOR and Forestry Research and Development Group (MOF)
	18.00	-	Meeting with Tom Walton of the World Bank
21 March 2001 (Wednesday)	09.00 - 11.00	-	Meeting with NGOs (10 NGOs)
	12.00	-	Meeting with Muslimin Nasution
	14.00	-	Meeting with Academics: Ir. Bramasto Nugraha, Titus Sarijanto and Prof. Hasanu Simon.
	19.00	-	Working dinner with Prof. Oemi Hanii'in and Prof. Soekotjo
22 March 2001 (Thursday)	13.00	-	Meeting with APHI, APKINDO, APKI
	15.00	-	Meeting with Japan Forestry Agency Mission
	16.30	-	Meeting with Hasjrul Harahap
23 March 2001 (Friday)	09.00	-	Meeting with AMAN (Asosiasi Masyarakat Adat Nusantara
	14.00	-	Meeting with Dr. Wimpy
24 March 2001 (Saturday)	Interaction between Team Members		
25 March 2001 (Sunday)	Reading of Background Materials		
26 March 2001 (Monday/National holiday)	At Santika Hotel, internal consultation and preparation for field visit		
27 March 2001 (Tuesday)	Writing Sessions		

28 March 2001 (Wednesday)	08.35	-	Arrival in Pekanbaru, Riau
	10.30	-	Opening of the Workshop on Human and Elephant Conflict
	12.30	-	Lunch with local stakeholders
29 March 2001 (Thursday)	09.00	-	Call on the Governor of Riau Province
	10.30	-	Continued Workshop on Human-Elephant Conflict
	12.30	-	Working lunch with Bupatis
	15.00	-	Visit to P.T. Sola Grataya (Plywood Factory)
30 March 2001 (Friday)	08.00	-	Field visit to Tesso Nilo (Visit plantation, concession area of pulp and paper mill)
	16.00	-	Return to Pekanbaru
31 March 2001 (Saturday)	08.00	-	Field visit to HTI of PT. Arara Abadi
	16.00	-	Return to Pekanbaru
1 April 2001 (Sunday)	Departure for Jakarta		
2 April 2001 (Monday)	Discussions among Mission members Meeting with the Minister of Forests, Hon. Marzuki Usman (ML&MR)		
3 April 2001 (Tuesday)	Discussions at CIFOR on issues relating to decentralisation in forestry (MR) - ML returns to home station		
4 April 2001 (Wednesday)	Meeting with Prof. Dr. Herman Haeruman regarding forestry development in Indonesia with particular reference to decentralisation		
5 April 2001 (Thursday)	Internal meeting and discussion among Mission members. Boulter returns to home station		
6 April 2001 (Friday)	MR returns to home station		

Second Mission

9 September 2001 (Sunday)	MR arrives Jakarta		
10 September 2001 (Monday)	ML arrives Jakarta		

11 September 2001 (Tuesday)	ML and MR prepare materials for discussion at the workshops/meetings
12 September 2001 (Wednesday)	ML and MR discuss the draft mission report. Mission members arrive Jakarta
13 September 2001 (Thursday)	Internal meeting of mission members
14 September 2001 (Friday)	Discussion on the draft mission report
15 September 2001 (Saturday)	Discussion on the draft mission report
16 September 2001 (Sunday)	Discussion on the draft mission report
17 September 2001 (Monday)	Participate in the workshop on Sustainable Forest Management Strategy for Indonesia hosted by CIFOR in Bogor, attended by CIFOR/ICRAF/LEI and NGOs.
18 September 2001 (Tuesday)	Participation in two workshops on Sustainable Forest Management Strategy for Indonesia hosted by APKINDO/APHI at Manggala Wanabakti, Jakarta. • Workshop attended by trade representatives and counterpart team. • Workshop attended by DFF and IDCF
19 September (Wednesday)	Internal meeting of mission members and discussion on the draft mission report
20 September 2001 (Thursday)	Finalisation and adoption of the mission report Meeting with the Executive Director of ITTO
21 September 2001 (Friday)	- Meeting with H.E. Dr. Muhammad Prakosa, Minister of Forestry - Submission of the Mission Report to the Executive Director of ITTO

Appendix - V

LIST OF PERSONS MET WITH BY THE ITTO TECHNICAL MISSION

M. Yayat Afianto
Telapak Indonesia,
Sempur Kaler No. 16,
Bogor 16129, Indonesia
Tel: 62-251-320 792
Fax: 62-251-351 069

Mubariq Ahmad
NRM/EPIQ
Ratu Plaza Building 17th Floor
Jl. Jend. Sudirman
Jakarta
Tel:62-21-7209596
Fax:62-21-7204546

Mufti Al Amin
Director
PT. The Best One Unitimber
Jl. Kol. Abunjani No. 168
Jambi
Tel: 62-741-63213, 61214, 63215
Fax: 62-741-61210

Erik Albrechtsen
Head of Forestry and Environment Department
Dalhoff Larsen & Horneman A/S
Vesterbrogade 1
DK-8800 Viborg
Denmark
Tel: 45 8660 1333
Fax: 45 8660 1344

Jorg Albrecht
Chief Technical Advisor, GTZ
(Deutsche Gesellschaft FurTechnischeammenarbeit (GTZ)
Strengthening the Management Capacities in the Forest Sector (SMCP)
Manggala Wanabakti Building
Jakarta – 10270.

Grahame Applegate
CIFOR
Jl. Situ Gede, Sindang Barang
Bogor Barat 16680
Indonesia
Tel: 62-251-622622
Fax:62-251-622100

Agus Awali
PT. Arara Abadi
Pekanbaru, Riau

Bambang
PT. Arara Abadi
Pekanbaru, Riau

Christopher Barr
Policy Scientist
CIFOR, Bogor
Tel: 62-251-622622
Fax: 62-251-622100

Bujang Baru
Penghulu/Ketua Adat
Pekanbaru, Riau

Heru Basuki
Directorate General of Nature Protection and Conservation, MoF
Manggala Wanabakti Building Block I, 7th Floor
Tel: 62-21-5730315

Christopher P.A. Bennett
Forestry Policy Dialogue
The World Bank
World Bank Office, Jakarta.

Benny
PT. Asia Forestama Raya
Jl. Terminal Lama No. 75
Kec. Limbungan, Rumbai,
Pekanbaru, Riau
Tel: 62-761-51422
Fax: 62-761-52937

Bestari
Asosiasi Masyarakat Adat Nusantara (AMAN)
Jl. Pisang No. 17 AUP
Komplek Horticultura, Pasar Minggu
Jakarta Selatan 12520, Indonesia
Tel/Fax: 62-21-7818324

Hans Beukeboom
Social Forestry, Training and Office Coordinator
SFMP/GTZ., Balikpapan

Tim Brown
NRM/EPIQ
Ratu Plaza Building 17th Floor
Jl. Jend. Sudirman
Jakarta, Indonesia
Tel:62-21-7209596
Fax:62-21-7204546

Suseno Budidarsono
ICRAF, Bogor, Indonesia
Tel/Fax: 62-21-625416

Jimmy Chandra
Chief of Marketing and Promotion
Indonesian Sawmill and Wood Working Association,
Jakarta.

Chandrasekhar
Pulping Division
Riau Pulp, Pekanbaru, Riau

Mafa Chipeta
Deputy Director General
CIFOR
Jl. Situ Gede, Sindang Barang
Bogor Barat 16680, Indonesia
Tel: 62-251-622622
Fax:62-251-622100

Jason Clay
Senior Fellow
World Wildlife Fund
1250 Twenty-Fourth St., NW
Washington, DC 20037-1132 USA
Tel: (202) 778-9691
Fax: (202) 293-9211

Christian Cossalter
CIFOR
Bogor Barat 16680,
Indonesia
Tel: 62-251-622622
Fax: 62-251-622100

Zaharial Coto
Former Dean,
Faculty of Forestry, IPB, Bogor

Helen A. Cruz (Ms.)
CIDA/BAPPENAS
Jakarta
Tel: 62-21-310 7960

Rokhmin Dahuri
Director General of Coastal and
Small Island Affairs,
Ministry of Marine Affairs and Fisheries
Jakarta
Presently:
Minister of Fisheries and Marine Resources

Lukito Daryadi
Chairman
Indonesian Zoological Parks Association
Jakarta

Hadi Daryanto
Directorate General of Production Forest
Management, MoF
Ministry of Forestry
Manggala Wanabakti Building Block I, 2nd Floor
Jl. Gatot Subroto, Jakarta
Tel/Fax: 62-21-5730146

Hadi Dayanto
Strategic Planning Unit
Ministry of Forestry
Manggala Wanabakdi Building, Jakarta

Wil de Jong
Senior Scientist
CIFOR, Bogor
Tel: 62-251-622622
Fax: 62-251-622100

Marian S. Delos Angeles (Ms.)
Senior Environmental Policy Economist
ICRAF
Sindang Barang, Bogor Barat 16680
Tel: 62-251-625415
Fax: 62-251-625416

S. Didin
RAL
Pekanbaru, Riau

Upik Djalins (Ms.)
NRM/EPIQ
Ratu Plaza Building 17th Floor
Jl. Jend. Sudirman
Jakarta, Indonesia
Tel:62-21-7209596
Fax:62-21-7204546

Saleh Djasit
Governor
Riau Provincial Government
Pekanbaru

Tony Djogo,
CIFOR,
Bogor Barat 16680
Indonesia
Tel: 62-251-622622
Fax: 62-251-622100

W. Dioko
PT. NUR
Pekanbaru, Riau

Richard Dudley
CIFOR
Bogor Barat 16680
Indonesia
Tel: 62-251-622622
Fax: 62-251-622100

Ejouri
PT. Arara Abadi
Pekanbaru, Riau

Ersa (Ms.)
Deputi V Bidang Regional dan Sumber Daya Alam,
BAPPENAS
Jl. Taman Suropati No. 6
Jakarta, Indonesia

Erwidodo
Forestry Research and Development Agency, MoF
Jl. Gunung Batu , Bogor
Tel/Fax: 62-251-348644

Alin Fitriani
Latin
Jln. Surya Gg. Parkit no. 31,
Barang Jero, Bogor
Indonesia
Tel: 62-251-420 522
Fax: 62-251-626 593

Frank Flasche
Technical Advisor
Strengthening the Management Capacities in the
Forest Sector (SMCP)
GTZ
Manggala Wanabakti Building
Jakarta – 10270.

J.K. Gasana
Inter co-operation
CH-3001 Berne
Switzerland

I Ketut Kaler Ginaputra
Asosiasi Panel Kayu Indonesia (APKINDO)
Manggala Wanabakti Buiding Block Iv 9th Floor
Jl. Gatot Subroto, Jakarta
Tel: 62-21-5711290
Fax: 62-21-5733015

G.D. Golani,
R & D
Forestry Division
Riaupulp, Pekanbaru, Riau

Yusuf Sudo Hadi
Dean, Faculty of Forestry
Bogor Agriculture Insitute
Kampus IPB Darmaga
P.O. Box 168 Bogor 16001
Tel: 62-251-621677
Fax: 62-251-621256

Muchlis A. Hamied
Ketua Komisi II
DPRD INHIL, Riau

Oemi Hanii'in
Dept. of Forest Science
Gajah Mada University
Yogyakarta, Indonesia
Tel: 62-274-545639

Hasjrul Harahap
Jl. Mangunsarkoro No. 1 Menteng
Jakarta, Indonesia
Tel: 62-21-331618, 331662
Fax: 62-21-3907525

Hardjono
Bureau of Planning and International Cooperation,
MoF, Manggala Wanabakti
Building Block I 4th Floor
Jl. Gatot Subroto, Jakarta
Tel: 62-21-5730165, 5701114
Fax: 62-21-5720210

Hargyono
Subdit Pembangunan dan Pemeliharaan Hutan
Tanaman, MoF
Manggala Wanabakti Building
Block I 5th Floor
Jl. Gatot Subroto Jakarta 10270
Tel: 62-21-5730249

Harsono
Director General, Ministry of Forestry
Manggala Wana Bakti, Jakarta

Rudi Hartanto
PT. EIT
Pekanbaru, Riau

Kahar Haryopuspito
Secretary General
Pulp and Paper Association of Indonesia (APKI)
Jalan Cimandiri, 6
Jakarta, Indonesia.
Tel: 62-21-326084
Fax: 62-21-3140168

Osamu Hashiramoto
Forestry Agency
International Forestry Cooperation Office
Tokyo, Japan
Tel: 81-3-3591-8449
81-3-3593-9565

M. Hatta
Desa Situgal, Kec. Kwartas Ilir
Pekanbaru, Riau

Mariyanti Hendro (Ms.)
Forest conservation specialist
Jakarta

Laurel Heydir
Legal & Community Resource Management Specialist,
FKKM, Jakarta

Kota Hiranuma
Forestry Agency
Wood Products Trade Office
Tokyo, Japan
Tel: 81-3-3502-7830
Fax: 81-3-3502-0305

Henrik Hoejgaard
DLH Nordisk Indonesia
Jl. M.T. Haryono Kav 14-16 Cawang
Jakarta 13330
Tel: 62-21-8565929
Fax: 62-21-8565934

Johannes Huljus
Team Leader,
Promotion of Sustainable Forest Management
GTZ, Jakarta

D.J. Husni
PT. HUMA
Pekanbaru, Riau

Syuichi Irikawa
Forestry Agency Japan
Wood Products Division
Tokyo, Japan
Tel: 81-3-3501-384
Fax: 81-3-5359-639

Untung Iskandar
Director General
Balai Planologi, MOF,
Managgala wanabakti Building,
Jakarta
Tel: 62-21-573 0290

Agus Ismantoro
General Manager
Forestry Division
PT. Arara Abadi, Pekanbaru

T. Jansen
Directorate General of Production Forest Management
Manggala Wanabakti Building Block I, 6th Floor
Tel:62-21-62-21-5730240

Agus Justianto
Forestry Planning Agency
Manggala Wanabakti Building Block VII, 7th Floor
Tel: 62-21-5730282

David Kaimowitz
Director General
Centre for International Forestry Research (CIFOR)
Bogor Barat 16680
Indonesia
Tel: 62-251-622 622
Fax: 62-251-622 100
Tel:62-21-5730282

I. Ketut Kaller
APKINDO
Manggala Wanabakti Building
Jakarta

M.D. Kamal
ASMINDO
Manggala Wanabakti Building
Jakarta

Aziz Khan
NRM/EPIQ
Ratu Plaza Building 17th Floor
Jl. Jend. Sudirman
Jakarta, Indonesia
Tel:62-21-7209596
Fax:62-21-7204546

Nalin M. Kishor
Natural Resource Economist,
The World Bank,
Washington D.C, USA
Tel: 1-202-4738672

Jensen Ko
General Manager, Sinar Mas
Wisma Indah Kiat
Gedung B, Lt 2
Jl. Raya Serpong Km. 8
Tangerang 15310
Jawa Barat, Indonesia
Tel: 62-21-53120001-3, 53120011
Fax: 62-21-53120373

Budi Kristiar
Asosiasi Panel Kayu Indonesia (APKINDO)
Manggala Wanabakti Block IV, 9th Floor
Jl. Gatot Subroto, Jakarta
Tel: 62-21-5711290
Fax: 62-21-5733015

Deny Kustiawan
Directorate General of Production Forest
Management, MoF
Manggala Wanabakti Block I 5th Floor
Jl. Gatot Subroto, Jakarta 10270
Tel: 62-21-5730395

Wisber Loeis
Former Chairman of ITTC,
ASEAN Foundation
Jakarta

E.P. Lorenzo
Environment departmet
Riaupulp, Pekanbaru, Riau

K.G. Mac Dicken
Director of Research
CIFOR, Bogor
Tel: 62-251-622622
Fax: 62-251-622100

Teguh Irawan
BAPEDAL
Jakarta
Tel: 62-21-85906677

Nur Mahmudi Isma'il
Minister of Forestry (Former)
Manggala Wanabakti Building
Block I, 4th Floor, Jl. Gatot Subroto, Jakarta
Tel: 62-21-5730213, 5730216
Fax: 62-21-5700226
Present address:
Jln. Swadaya IIA No. 48,
Tanjung Barat,
Jakarta 12530
Tel: (021) 780-7286

M. Mansur
APKI
Jl. Cimandiri 6, Jakarta, Indonesia
Tel: 62-21-326084
Fax: 62-21-3140168

Mansyur HS
LSM
Pekanbaru, Riau

Togu Manurung
Forest Watch
Bogor, Indonesia
Tel /Fax: 62-21-317926/382805

Muhmammad Yusram Massijaya
Fakultas Kehutanan IPB
Kampus IPB Darmaga,
PO Box 168, Bogor 16001
Tel: 62-251-621 677
Fax: 62-251-621 256

Simon Mathew
Riaupulp
PT. Riau Andalan Pulp & Paper
P.O. Box 1080
Pekanbaru, Riau, Sumatra
Indonesia, 28000
Tel: 62-761-95529/725
62-61-532638/558

Reed Merrill
NRM/EPIQ
Ratu Plaza Building 17th Floor
Jl. Jend. Sudirman, Jakarta, Indonesia
Tel:62-21-7209596
Fax:62-21-7204546

Jozsef Micski
Forest Liaison Bureau
European Union/Ministry of Forestry
Manggala Wanabakti Building, Jakarta – 10270.

Arus Mujijat
PT. DRT
Pekanbaru, Riau

Dedi Mulyadi
PT. Mandau Abadi
Pekanbaru, Riau

Bambang Murdiono, M.Sc.
Bureau of Planning and International Cooperation
Manggala Wanabakti Building Block VII, 4th Floor
Jl. Gatot Subroto, Jakarta
Tel: 62-21-5701114, 5730346
Fax: 62-21-5720210

Canecio P. Munoz
Environmental Manager
Asia Pacific Resources
International Holdings Ltd. (April)
Administrative Office, P.O. Box 1089
Pekanbaru, Riau, Sumatra, Indonesia 28000
Tel: 62-761-95529/725
Fax: 62-761-95305

Mustafa
Latin (NGO)
Bogor, Indonesia
Tel/Fax: 62-21-379825

Sri Murniningtyas (Ms.)
Park Interpretation Specialist
Lembaga Konservasi Alam Dan Ekotourisme
Jakarta, Indonesia.

Hiroshi Nakata
JICA
Manggala Wanabakti Building
Jakarta

R.A. Nanang
Indonesia Forest Entreupeuneurs Association
Manggala Wanabakti Building Block IV, 9th Floor
Jl. Gatot Subroto, Jakarta
Tel: 62-21-5701154
Fax: 62-21-5732564

Muslimin Nasution
Lembaga Konservasi Alam Dan Ekotourisme
Jakarta, Indonesia.

Muhandis Natadiwirya
Development Director
P.T. Inhutani I and co-director of EU/B FMP Forest Management Project.
Jakarta

Tim Nolan
Forest Liaison Bureau
European Union/MOF
Jakarta 10270

Bramasto Nugroho
Bogor Agricultural University
Kampus IPB Darmaga
P.O. Box 168 Darmaga
Bogor 16001, Indonesia
Tel: 62-251-621285
Fax: 62-21-621677

K. Obidzinski
Centre for International Forestry Research,
Bogor Barat 16680
Indonesia
Tel: 62-251-622 622

Hadi Pasaribu
Head, Foreign Cooperation Division,
MOF,
Jakarta

Prabianto, M.Sc.
Bureau of Planning and International Cooperation
Ministry of Forestry
Manggala Wanabakti Building Block VII, 4th floor
Jl. Gatot Subroto, Jakarta
Tel: 62-21-5730346, 5701114
Fax: 62-21-5720210

Muhammad Prakosa
Minister of Forestry RI,
Jakarta

Wisnu Prastowo
Directorate General of Production Forest Management, MoF
Manggala Wanabakti Building Block I, 5th Floor
Jl. Gatot Subroto, Jakarta 10270
Tel: 62-21-5730239

Agus Pratama
PT. Arara Abadi
Pekanbaru, Riau

Herman Prayudi
Indonesia Forest Entreupeuneurs Association
Manggala Wanabakti Building Block IV 9th Floor
Jl. Gatot Subroto, Jakarta
Tel: 62-21-5701154
Fax: 62-21-5732564

Achmad Pribadi
Directorate General of Production Forest Management, MoF
Manggala Wanabakti Building Block I 5th Floor
Jl. Gatot Subroto, Jakarta 10270
Tel: 62-21-5730239

Dani Pitoyo
APKINDO
Manggala Wanabakti Building,
Jakarta
Tel: 62-21-5711290

Antoni M. Purba
Member of House of Representatives, Siak
Jl. Sultan Ismail No. 2
Siak Sri Indrapura
Tel: 62-764-20456

Boen M. Purnama
Head of Forestry Planning and Development Center,
Forestry Planning Agency, MoF
Manggala Wanabakti Building Block VII, 7th Floor
Tel:62-21-5730282
Fax: 62-21-5720216

Pupung Purnama
Director
PT. Ebony Kusuma Persada
Jl. Setia Budhi No. 124
Pekanbaru, Riau
Tel: 62-761-38898

Jimmy Purwonegoro
Chief Executive Director,
Indonesian Sawmill and Wood Working Association,
Jakarta.

Tahir S. Qadri
Senior Environment Specialist
Asian Development Bank, Manila.

Chung Rae-Kwan
Former Chairman of ITTC
Embassy of Korea
Jakarta

Dwi M. Rahmad
Latin
Jln. Sutra Gg. Parkit no. 31,
Barang Jero
Bogor
Tel: 62-251-420 522
Fax: 62-251-626 593

Wawan Ranuwijaya
Padya Diklatnas
Indonesian Police Headquarter
Jl. Trunojoyo No.3
Tel: 62-21-7218130

Daju Pradnja Resosudarmo (Ms.)
Programme leader
Deforestation and forest degradation
CIFOR, Bogor
Tel: 62-251-622622
Fax: 62-251-622100

D.J. Roedjai
Lembaga Konservasi Alam
Dan Ekotourisme,Jakarta, Indonesia.

James M. Roshetko
Tree Domestication Specialist
ICRAF/SARRP
Bogor 16680
Tel: 62-251-625415
Fax: 62-251-625416

Yetti Rusli (Ms.)
Forestry Planning Agency
Ministry of Forestry
Manggala Wanabakti Building Block VII 5th Floor
Jl. Gatot Subroto, Jakarta
Tel/Fax: 62-21-5720216

Fauzi Saleh
Forestry District Office
Jl. Jend. Sudirman 486
Pekanbaru, Riau
Tel: 62-761-21630, 31631, 21440

Emil Salim
Jl. Taman Patra XIV/Blok M No. 13 Kav. 10-11
Jakarta, Indonesia
Tel: 62-21-386547/548
Fax: 62-21-5274870/71

Hasihalon Samosir
Directorate General of Geology and Mine Resources
Ministry of Mine and Energy
Jakarta, Indonesia
Tel: 62-21-5250447
Fax: 62-21-5251380

Titus Sarijanto, M.Sc.
Jl. Kemang Selatan IV
Komp. 79 Kav. I
Jakarta Selatan 12790
Tel: 62-21-71791556

Virza Sasmitawidjaja
NRM/EPIQ
Ratu Plaza Building 17th Floor
Jl. Jend. Sudirman
Jakarta, Indonesia
Tel: 62-21-7209596
Fax: 62-21-7204546

Agus Sarsito
Bureau of Planning and Foreign Affairs
Ministry of Forestry
Manggala Wanabakti Building, Jakarta

Ombo Satjapradja
Lembaga Konservasi Alam
Dan Ekotourisme, Jakarta, Indonesia.

Yuichi Sato
JICA
Manggala Wanabakti Building Block VII, 6th Floor
Jl. Gatot Subroto, Jakarta
Tel /Fax: 62-21-5720218

Retno Sekarsari (Ms.)
Production Manager
Rimba Peranap Indah, Pekanbaru
Riau

H. Setiawan
Asosiasi Panel Kayu Indonesia (APKINDO)
Manggala Wanabakti Block IV 9th Floor
Jl. Gatot Subroto, Jakarta
Tel: 62-21-5711290
Fax: 62-21-5733015

Agus Setyarso
WWF-Indonesia
Jakarta, Indonesia
Tel/Fax: 62-21-5761070

M. Silalahi
Directorate General of Regional Development
State Ministry
Jl. Taman Makam Pahlawan No. 20 Kalibata,
Jakarta Selatan
Tel/Fax: 62-21-7942632

Marsil Simin
Manager
PT. Asia Forestama Raya
Jl. Terminal Lama No. 75
Kec. Limbungan, Rumbai,
Pekanbaru, Riau
Tel: 62-761-51422
Fax: 62-761-52937

Hasanu Simon
Gajah Mada University
Bulaksumur, Yogyakarta
Tel: 62-274-545639
Fax: 62-274-523553

Sulistyo A. Siran, M.Agr.
Forestry Research and Development Agency,
MoF
Manggala Wanabakti Building Block VII, 4th Floor
Jl. Gatot Subroto, Jakarta
Tel: 62-21-5730619

Wandojo Siswanto
Directorate General of Nature Protection and
Conservation, MoF
Jl. Gatot Subroto, Jakarta
Tel: 62-21-5730311, 5730317

Natasha Smith (Ms.)
AusAid
Jakarta.

Soekardi
Indonesia Wood World Net
(Pusat Data Perkayuan ISA)
Manggala Wanabakti Building Block IV, 8th Floor
Jl. Gatot Subroto, Jakarta
Tel: 62-21-5703172
Fax: 62-21-5734385

Soekotjo
Gajah Mada University
Yogyakarta, Indonesia
Tel: 62-274-545639

Sofyan
Dean, Fakultas Kehutanan,
UGM,
Yogyakarta
Tel: 62-274-550541/512102
Fax: 62-274-550541

Subarudi
FORDA/MOF
JLn. Gunung Batu
Bogor
Tel: 62-251-346844

Eddy Sugandi
PT. SRT
Pekanbaru, Riau

Sugijanto
PT. IPR
Pekanbaru, Riau

W. Suhendro
RAL
Pekanbaru, Riau

Barkah Sulistiadi
Directorate General of Regional Development
State Ministry
Jl. Taman Makam Pahlawan No. 20, Kalibata,
Jakarta Selatan
Tel/Fax: 62-21-79192118

Iman Sumantri
Forestry Planning Agency, MoF
Manggala Wanabakti Building Block VII, 7th Floor
Tel:62-21-5730282

Sunaryo
Forestry Research and Development Agency, MoF,
Jl. Gunung Batu, Bogor
Tel: 62-251-315234/633234

Suratno
RAL
Pekanbaru, Riau

Suripto
Secretary General, MoF
Manggala Wanabakti Building
Block I, 3rd Floor
Jl. Gatot Subroto, Jakarta
Tel: 62-21-5730181, 5730180

R.B. Suryama
HRD Expert to Minister of Forestry
Manggala Wanabakti Building
Block I, 4th Floor,
Jalan Gatot Subrato
Jakarta – 10270.

Djamaludin Suryohadikusumo
Jl. Taman Radio Dalam III, No. 6
Kebayoran Baru, Jakarta
Tel: 62-21-7203815, 75909167
Fax: 62-21-75909168

Purwo Susanto
Acting Project Executant
Riau Elephant Conservation Program
Yayasan WWF Indonesia
Kantor Taman A9 Unit A-1
Jl. Mega Kuningan Lot 8-9/A9
Jakarta 12950
Tel: 62-21-5761070

Njoto Sutardjojo
APKINDO
Manggala Wanabakti Building
Jakarta

Sutopo
Ministry of Industry and Trade,
Jln. Gatot Subroto kav. 52,
Jakarta
Tel: 62-21-5253270

Jan Olof Svensson
Managing Director
Riau Pulp & Paper
P.O. Box 1080
Pekanbaru, Riau, Sumatra
Indonesia, 28000
Tel: 62-761-95529/725
Fax: 62-761-95681

Syafrizal Syaiful
Directorate General of Geology and Mine Resources
Ministry of Mine and Energy
Tel: 62-21-8314585

Johnson Tampubolon
Kantor Menteri Negara
Koordinator Ekonomi, Keuangan dan Industri,
BAPPENAS, Jl. Taman Suropati, Jakarta
Tel: 62-21-31901150
Fax: 62-21-31901164

Catra W. Tamsin
PT. HUMA
Pakanbaru, Riau

I.G.M. Tantra
Botanist-Instructor
PUSDIKLAT DEPHUTBUN
Ministry of Forestry, Bogor

Jim Tarrant
Chief of Party, NRM/EPIQ
Ratu Plaza Building 17th Floor
Jl. Jend. Sudirman
Jakarta, Indonesia
Tel:62-21-7209596
Fax:62-21-7204546

Muhammad Toha
Director-Strategic Planning
Ministry of Forestry
Manggalawanabakti Buiding, Jakarta.

Graham Tyrie
Project Director
EU/BFMP
Forest Management Project, Jakarta

Thomas Udesen
DLH Nordisk Indonesia
Jl. M.T. Haryono Kav 14-16 Cawang
Jakarta 13330
Tel: 62-21-8565929
Fax: 62-21-8565934

Marzuki Usman
Minister of Forestry
Manggala Wanabakti Building
Block I 4th Floor
Jl. Gatot Subroto, Jakarta
Tel: 62-21-5730213, 5730216
Fax: 62-21-5700226

Ratna Djuwita Wahab (Ms.)
Deputi III Bidang Koordinasi Pemanfaatan
Sumber Daya Alam & Peningkatan
Produktivitas Petani Nelayan, BAPPENAS
Jl. Taman Suropati, Jakarta
Tel/Fax: 62-21-335589

A. Wahid
Desa Sejati, Kec. Langgam, Kab. Belawan
Pekanbaru, Riau

Tri Wahyudiyati, S.H., LLM. (Ms.)
Forest Standardization and Environment, MoF
Manggala Wanabakti Building Block IV 7th Floor
Jakarta, Indonesia
Tel /Fax: 62-21-5733433

Wahyuningsih
BAPPENAS
Jakarta
Tel: 62-2-3107960

Hideki Wakabayashi
Embassy of Japan
Jakarta, Indonesia
Tel: 62-21 324308
Fax: 62-21-3157152

Thomas Walton
World Bank
Jakarta.

Wahjudi Wardojo
Director General of PKA
MOF, Manggala Wanabakti Building.
Jakarta

Waskito
Lembaga Konservasi Alam
Dan Ekotourisme,
Jakarta, Indonesia.

Mark Werren
Director
Sinar Mas Group Forestry Support Audit
PT. Indah Kiat, Perawang Mill
Jl. Raya Minas-Perawang Km.26
Pekanbaru 28772
Riau Province, Indonesia
Tel: 62-761-91522
Fax: 62-761-91373

Wicakso
Inhutani IV, Jakarta

S. Wahyu Widodo
Direktorat Pajak Bumi Bangunan
Ditjen Pajak
Jl. Gatot Subroto No. 40-42
Gd. B Lt. 10 Jakarta 12910
Tel: 62-21-5225134

Shinsuke Yamazaki
Forestry Agency
Wood Product Office
Tokyo, Japan
Tel: 81-3-3502-7830

Irsayal Yasman
Inhutani I.
Jakarta

Aly Yusuf
Secretary General
Lestari Hutan Indonesia (LHI)
Jakarta, Indonesia
Tel:62-21-79193363

Zuhirman
General Affair
PT. Asia Forestama Raya
Jl. Terminal Lama No. 75
Kec. Limbungan, Rumbai,
Pekanbaru, Riau
Tel: 62-761-51422
Fax:62-761-52937