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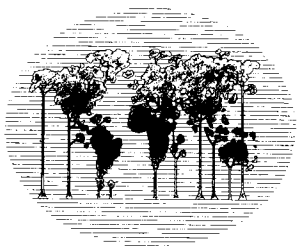
# CRITERIA FOR THE MEASUREMENT OF SUSTAINABLE TROPICAL FOREST MANAGEMENT

INTERNATIONAL TROPICAL TIMBER ORGANIZATION
ORGANISATION INTERNATIONALE DES BOIS TROPICAUX
ORGANIZACION INTERNACIONAL DE LAS MADERAS TROPICALES

ITTO - Policy Development Series No. 3

# CRITERIA FOR THE MEASUREMENT OF SUSTAINABLE TROPICAL FOREST MANAGEMENT



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## FOREWORD

As an organization, the International Tropical Timber Organization (ITTO) is dedicated to the conservation and wise utilization of tropical forest resources through sustainable management. Thus, the promotion and implementation of sustainable management of tropical forests in its producer country members is one of the key elements in ITTO's project and non-project activities. ITTO's Guidelines on sustainable management of natural and planted tropical forests and its draft Guidelines on the biodiversity conservation of production tropical forests represent serious and concerted efforts of all its member countries to achieve ITTO's Year 2000 Target. The ITTC had initiated discussions on progress towards this Target and a major review will be undertaken in 1995.

But what is sustainable management of tropical forests? There is a bewildering number of definitions. Obviously, progress can only be achieved through a definition in simple practical terms linked to operational criteria in the field. To this end ITTO convened an Expert Panel to Formulate Possible Methods for Defining General Criteria for and Measurement of Sustainable Tropical Forest Management. The Panel, comprising Experts from both producer and consumer countries and representatives from conservation NGO and the timber trade, met at The Hague from 27 to 29 September 1991. This ITTO publication contains a working definition of sustainable management of tropical forests and a list of criteria for sustainability and examples of indicators based on the recommendations of this Expert Panel.

The dedication and generosity of the experts and consultants who worked tirelessly to formulate these criteria are gratefully acknowledged. Their contribution is yet another vital step for ITTO to work towards sustainable management of tropical forests. The criteria are deliberately kept simple and field-oriented and obviously, will need revision from time to time with new experiences. It is hoped that through this publication and its wide dissemination among all foresters, particularly those experienced in management of tropical forests, appropriate amendments may be made. These criteria will help to focus current weaknesses in management, and will therefore help to identify achievable improvements in management practice. They can also provide a basis for a standard reporting system to facilitate comparison and discussions for co-operation and assistance. These criteria are thus another demonstration of ITTO's commitment to achieve sustainable management of tropical forests.

Yokohama, Japan
25 March 1992

B.C.Y. Freezailah
Executive Director

## INTRODUCTION

As part of its on-going programme to promote the conservation and sustainable management of tropical forests, the Quito Session of the International Tropical Timber Council (ITTC) adopted a multi-faceted strategy to help promote the achievement of ITTO's Target 2000 to ensure that all trade in tropical timber is sourced from sustainably managed forests by the year 2000. One of the first initiatives of this strategy was to establish an International Panel of Experts to identify possible criteria for the measurement of sustainable tropical forest management to aid producer member countries of ITTO to both assess and report on their own progress towards achieving sustainable tropical management and Target 2000.

The International Panel to develop these criteria met at The Hague in the Netherlands in late September, 1991, and considered a detailed discussion paper jointly prepared by Professor Duncan Poore of the International Institute for Environment and Development, and Mr. Mok Sian Tuan, the former Director of the ASEAN Institute of Forest Management. The Panel, consisting of representatives of both producer and consumer member countries of ITTO, conservation NGOs and the trade in tropical timber, eventually distilled out a more concise definition of sustainable management and suggested a list of criteria and operational indicators for sustainable forest management at both the national and forest management unit levels.

The Eleventh Session of the ITTC in Yokohama examined both the panel's report and the original discussion paper prepared by Mr. Mok and Professor Poore. The Council further streamlined both the definition of sustainable management and the suggested list of criteria and operational indicators. The Council also invited producing and consuming member countries of ITTO to submit papers for the purposes of refining the full text of both the definition of sustainable management and the description of criteria for measuring sustainable forest management in practice. A panel comprised of experts from the delegations of six producing member and six consumer member countries will examine these papers and all issues relevant to sustainable forest management during the Twelfth Session of the ITTC which will be held in Yaoundé in Cameroon from 6 to 14 May 1992.

This publication presents the revised definition of sustainable management adopted by the Eleventh Session of the Council together with the provisional list of criteria and possible indicators for sustainability at both the national level and the level of the Forest Management Unit.

# SUSTAINABLE MANAGEMENT OF TROPICAL FORESTS

Sustainable forest management is the process of managing permanent forest land to achieve one or more clearly specified objectives of management with regard to the production of a continuous flow of desired forest products and services without undue reduction of its inherent values and future productivity and without undue undesirable effects on the physical and social environment.

## CRITERIA FOR SUSTAINABILITY

### Introduction

The list of Criteria and Examples of Indicators below is neither exhaustive nor exclusive. Moreover, all of the Examples of Indicators do not need to be measured to establish sustainability or the degree to which it has been achieved.

It must be emphasized that determinations of sustainability and, therefore, use of the following list must be specific to each nation or each management unit.

### Sustainability at the National Level

| Criteria | Examples of Indicators |
|---|---|
| The Forest Resource Base | • Comprehensive land use planning and provision for the Permanent Forest Estate (PFE).<br>• Present area of the PFE in relation to national goals and targets.<br>• Plantation establishment targets, present age class distributions, and annual planting regimes.<br>• Areas of Protection Forests and Production Forests within the PFE.<br>• The representativeness of the protected areas network and the current or planned reservation programme. |

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| The Continuity of Flow | • National production statistics of Forest Products over time.<br>• Documentation of logging (area) histories over time.<br>• Proposed cutting cycle lengths for major forest types, and standard concession lengths.<br>• Regulation of initial harvesting rates in relation to defined cutting cycles and net area of production forest.<br>• Regulation of subsequent harvesting in relation to increment data and the net area of production forest.<br>• Steps taken to harmonize the first and subsequent cutting cycles and manage the transition from the first to the second cutting cycle.<br>• Wood production targets over time from various sources.<br>• The availability of silvicultural prescriptions for the major forest types. |
| The Level of Environmental Control | • Management prescriptions for other non-production components of the PFE.<br>• The availability of engineering, watershed protection and other environmental management prescriptions for production forests.<br>• Availability of environmental assessment procedures. |
| Socio-Economic Effects | • Employment patterns and trends.<br>• Income generation and distribution patterns.<br>• National revenue and expenditure budgets for forest management.<br>• Availability of environmental assessment procedures. |

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| Institutional Frameworks | • Existence of a national forest policy.<br>• The relationship of national policy to ITTO Guidelines.<br>• Adequacy of the legislative framework to implement national forest policies and management plans.<br>• Adequacy of legislation to regulate harvesting and specific instruments, e.g. concession agreements.<br>• Adequacy of human and financial resources to meet legislative and administrative responsibilities in sustainable forest management.<br>• Community consultation.<br>• Existence of management plans and provisions for their implementation. |

## Sustainability at the Level of the Forest Management Unit

| Criteria | Examples of Indicators |
|---|---|
| Resource Security | • The legal establishment of forest areas or management units.<br>• Existence of a management plan.<br>• Clear demarcation of boundaries in the field.<br>• The presence or absence of illegal exploitation and encroachment.<br>• The duration of concession agreements. |
| The Continuity of Timber Production | • The presence of clear, official harvesting rules.<br>• Long term soil productivity.<br>• A pre-logging stand inventory. |

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| | • The number of trees and/or volume of timber per hectare harvested. |
| | • Provision for monitoring the residual growing stock after logging. |
| | • Records of annual product outputs over time. |
| | • Net productive area. |
| | • Records of annual areas cut over time. |
| The Conservation of Flora and Fauna | • Protection of eco-systems in the concession or management unit. |
| | • The extent of vegetation disturbance after logging. |
| An Acceptable Level of Environmental Impact | • Extent of soil disturbance. |
| | • Extent and spatial distribution of riparian and other watershed protection areas. |
| | • The extent and severity of soil erosion. |
| | • Provision for protection of bodies of water. |
| Socio-economic Benefits | • The number of people employed. |
| | • The nature and extent of benefits from forestry activities. |
| Planning and Adjustment to Experience | • Community consultation. |
| | • Arrangements for Forest Management to take into account traditional forest utilization. |

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