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Series 1: Programme 4 of 11 'Reports 19 - 24'

Report 5 (of 6): Forests of the Future - Mexico

Introduction

About 26% of the State of Quintana Roo in South East Mexico is covered by forests and about 95% of these timber producing forests are owned by the ejido (common land) communities. A large part of the State has very poor soil conditions and is unsuitable for agriculture. Most of the people earn their living through subsistence farming and forestry. Unless the forests become more productive, they are likely to be burned to create farmland. The people from the local communities in and around the forests need to be given a good incentive to conserve the forests to ensure that they are not completely destroyed. The introduction of appropriate intermediate technology which can be managed locally is essential to this.

Forestry Techniques used by MIQROO

In 1983, after the termination of concessions by a State owned logging and plywood company, called MIQROO, six Civil Societies were established in the ejido communities to take ownership and manage about 500,000 hectares of tropical forest in the State. The Societies employ a team of forestry technicians who carry out inventories, prepare management plans and supervise the harvesting of timber. The finance to pay for this is generated from their own revenues through the sale of timber both as round wood and sawn.

The communities inherited the techniques of MIQROO who had concentrated purely in the extraction of large diameter mahogany logs and creamed the forests of these species. The communities are now left with very low quantities of mahogany and have to rely on lesser known species of hardwoods and softwoods. The market price of such species is much lower than the mahogany or Spanish cedar which have ready markets and for farmers to earn enough money, they need to find ways to harvest the more common species which should help to reduce the felling of more precious species.

During the last 15 years, markets have been developed for the lesser known species but the selling price of these species still remains very low. High harvesting costs make these species uncompetitive in the market place. The technologies developed by the forestry management project reduce the costs of harvesting and the extraction of lesser known species is more attractive, therefore, reducing the pressure on mahogany. This should create the necessary incentive for the communities to conserve their forests and improve their living standards.

DFID and the Development of Appropriate Technologies

Realising that their main weaknesses were the logging techniques and lack of suitable forestry road construction, the ejido communities requested DFID (Department for International Development) to assist in the development of appropriate technologies for logging and road construction.

The project is being implemented in consultation with the Civil Societies and the ejido communities.

The Quintana Roo Forestry Management Project

The Quintana Roo Forestry Management Project began in March 1995 and aims to assist the communities of the State to manage their forestry resources in a sustainable way. By developing the capacity of the ejidos to increase their income through the development of cost effective and environmentally friendly forest harvesting and road technologies, the necessary incentives would be provided to the ejidos communities for conserving their forest resources.

The project has three components - the development of suitable harvesting and road technologies; biological studies to determine the effect of project activities on the biodiversity of the region and biometric studies to determine the rate at which the trees grow in the forests. A parallel economic study will determine the comparative advantages in the adoption of the technologies developed by the project over the traditional methods.

Forestry Road Construction

Access to and from the forests is important and specially designed roads can minimise the environmental impact. Roads should be narrow, without access and have good drainage. Two kinds of road are being constructed - one for permanent use and one to last for one season's tree extraction. The temporary tracks grow over in a year as the forest vegetation springs back up.

The following aspects are considered while constructing the forest roads:

- Alignments are carefully selected so as to avoid wetlands and water crossings where possible.
- Drainage is given special attention, for example, using an adequate number of culverts, side drains and mitre drains to minimise erosion.
- Burrow pits are restored after use and reforested with commercial species. There is also substantial natural regeneration.
- While clearing the right of way, the trees are felled into the forest so as not to create a barrier for the wild life.
- During road construction water holes which retain water during the dry season are also constructed for the wild life.

Logging Techniques

Logging techniques traditionally practiced by the communities caused vast amounts of damage to the trees which should have become the future crop. The techniques developed by the project have considerably reduced damage to the trees and also reduced the amount of forest being removed to extract logs by almost 50%.

Logging techniques now being used include:

- The heavy skidder has been replaced and now an agricultural tractor is used which has been adapted to the conditions prevailing in the forests of Quintana Roo.
- 100% counting and recording of sustainably harvestable trees. Mapping of all trees to be extracted.
- Planning of skid trails - the agricultural tractor opens up only 50% of the skid trails constructed by the skidder and they are much narrower.
- Training for directional felling.

Using these methods, the cost of timber extraction can be reduced by about 40%. Tractors speed up harvesting and are less destructive than the old skidder machines. Parts are available locally and all the mechanical repair works and maintenance are carried out in the community. Modification to the cabin of the tractor helps to protect the driver from falling trunks. Greater efficiency has already improved the farmers income by one third.

There are many poor communities who depend upon the forests for their livelihoods. They are dependent on the extraction of timber in a sustainable manner and on other varieties of non timber forest products, such as chicle, for making chewing gum and honey etc. The forests provide the economic survival of many communities. Good roads are useful for the foresters. Buyers can now pick up chicle from the chewing gum tappers and put it into the truck within half an hour. Before the roads were constructed it used to take a day to transport the chicle to the trucks.

Tree Planting

Strict regulations control how many trees can be cut down and the environmental damage is significantly reduced. Replanting is critical. One hundred seeds are planted each day and they take six months to grow into seedlings which can be planted in the forest. For every tree that is felled, about five saplings are planted. Last year 25,000 trees were planted in Quintana Roo alone.

For further information, please contact:

Zafar Hasan, Hidroelectrica de Infiernillo No.155A, Col. Electricistas, Chetumal, Mexico. Tel: +52 983 27745 Fax: +52 983 27736 E-mail: dfid@astronet.ecosur-groo.mx

Intermediate Technology would like to thank the Department for International Development in Great Britain - in particular, Zafar Hasan - for providing the original material on the Quintana Roo Forestry Management Project.

Further reading related to this subject from ITDG Development Bookshop

Environmentally Sound Small-scale Forestry Projects

Peter F. Folliot and John L.Thomas

A manual for community development workers in developing countries who are not technicians in the area of forestry, but who want some general guidelines for planning environmentally sound small-scale forestry projects.

120pp 1983 (VITA) œ11.95

Facing Kirinyaga: A social history of forest commons in southern Mount Kenya

Alfonso Peter Castro

Examines the management and use of common-property forests, groves and trees on southern Mount Kenya, demonstrating the long-standing relationships between Kenyans and their forest resources - and the connections between anthropology and forestry. This book is published in the IT Studies in Indigenous Knowledge and Development series.

166pp ISBN 1 853392537 1995 (ITP) œ14.95

Forests of Hope: Stories of Regeneration

Christian Kuchli

Forests of Hope presents positive stories from around the world of successful forestry conservation, showing how the lives of people and their communities have been integrated with preservation, use and enjoyment of forests. Containing 150 colour photographs, this book explores conditions in 12 different countries, and shows that where social and institutional conflicts have been resolved, forests have been regenerated.

242pp ISBN 1 853835056 1997 (Earthscan) œ19.99

Miombo Ecology and Management: An introduction

Emmanuel N. Chidumayo

Miombo forest occurs in a swathe across central and southern Africa.

Traditionally shifting cultivators have farmed in miombo, and allowed it to regenerate, but increasingly the demands for land and for fuelwood have resulted in deforestation. This book provides comprehensive details of the climate, environment, ecology and species characteristic of miombo, and describes methods for assessing the timber and other resources, through inventories, in order to use the forest sustainably. Management guidelines give practical advice on propagation and harvesting techniques, as well as discussing how to design plans to conserve biodiversity and to protect water catchments.

192pp ISBN 1 853394114 Paperback 1997 (ITP) œ14.95

Nature is Culture: Indigenous knowledge and socio-cultural aspects of trees and forests in non-European cultures

Edited by Klaus Seeland

The startling message of this book is that the so-called virgin forests of the world owe much to their symbiotic relationship with the indigenous peoples who live in and on the margins of the forests. Human activities have for millenia 'managed' (consciously or unconsciously) the world's forests, resulting in a greatly enriched biodiversity. The contributors to the book come from many different scientific disciplines, national and cultural backgrounds. Examples of forests are taken from Asia, Africa and South America, thus reflecting the global nature of the phenomenon. The book's conclusions will have far-reaching implications for all who are concerned with the conservation of forests and their indigenous human population. This book is published in the IT Studies in Indigenous Knowledge and Development Series.

152pp ISBN 1 853394106 Paperback 1997 (ITP) œ15.95

The New Forester

Berry van Gelder and Phil O'Keefe

This book will challenge foresters, and other rural development professionals, to build new landscapes which provide a range of biomass products to local users. The authors encourage professionals to work with, rather than against, local

people. 128pp ISBN 1 853392324 Paperback 1995 (ITP) œ9.95

Recent Approaches to Participatory Forest Resource Assessment

Jane Carter

Using detailed case studies from around the world, this guide provides indepth discussion on the growing trend towards local people's participation in forest resource assessment.

322pp ISBN 0 850032326 Paperback 1996 (ODI) œ14.95 *Trees, People and Power*

P. Utting

ISBN 1 85383162X Paperback (Earthscan) œ14.95

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