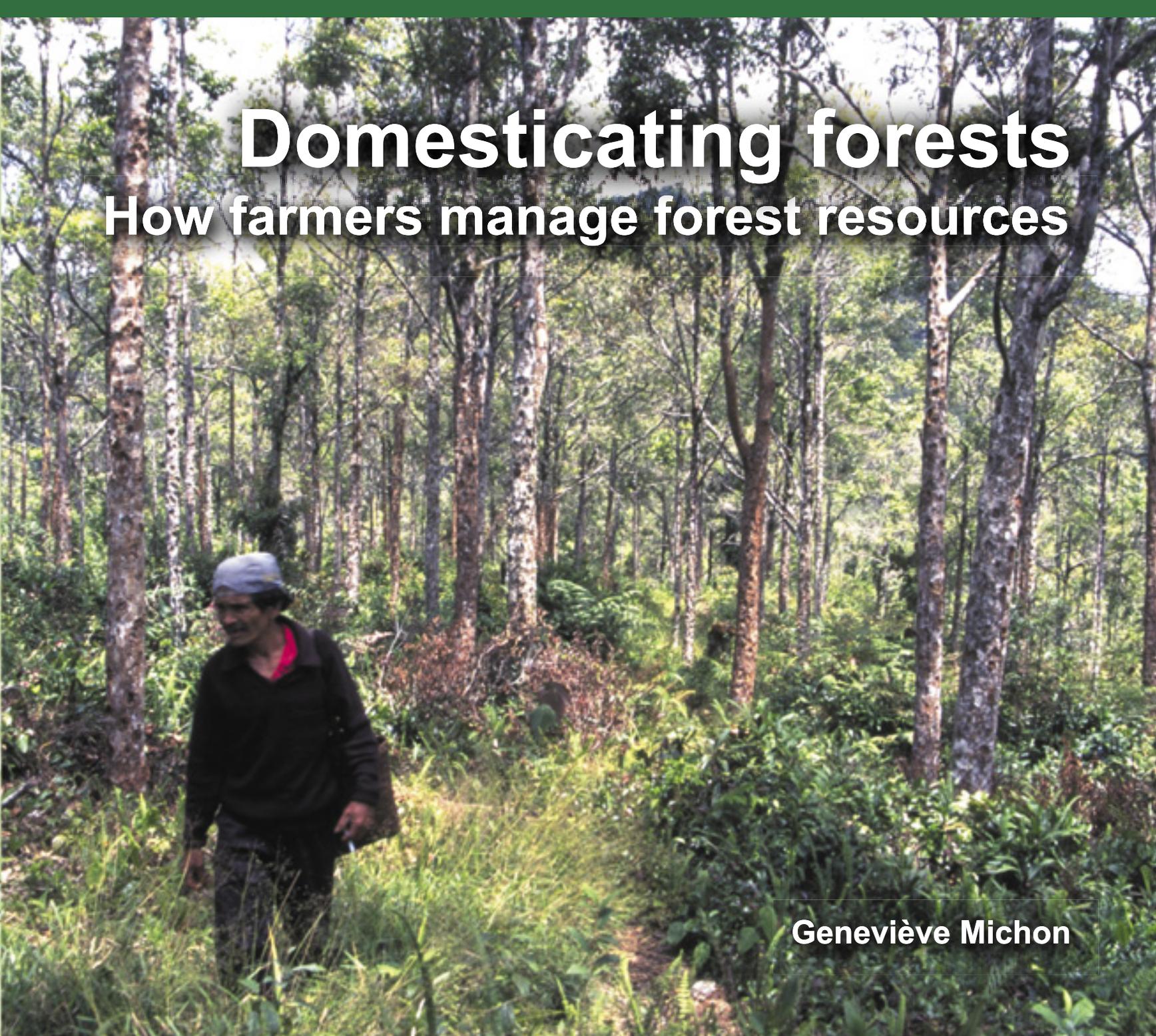




Domesticating forests

How farmers manage forest resources



Geneviève Michon



Domesticating forests

How farmers manage forest resources

Geneviève Michon

With contributions from:

Arild Angelsen
Carmen Garcia-Fernandez
Achmad Purwanto
Honorato Palis
Rachmat Dwi Muhtaman
Hélène Ilbert
Iwan Tjitradjaja

and

Stéphanie Aulong
Emmanuelle Bérenger
Isabelle Clément
Marina Goloubinoff
Esther Katz
Bernard Sellato

© IRD, CIFOR and ICRAF
All right reserved. Published in 2005
Printed by Subur Printing, Indonesia

Institut de Recherche pour le Développement
ISBN : 2-7099-1554-5
Center for International Forestry Research
ISBN : 979-3361-65-4
The World Agroforestry Centre
ISBN : 979-3198-22-2

Domesticating forests:
How farmers manage forest resources/
Geneviève Michon

1. Forest management 2. Forest culture
3. Local farmers

Published by
Center for International Forestry Research
The World Agroforestry Centre

Photographs:
Hubert de Foresta and Geneviève Michon
Jean-Marie Bompard
Isabelle Clément
Alain Compost
Patrice Levang
Thierry Thomas

Drawings:
Geneviève Michon
Wiyono

Cover:
Geneviève Michon

Layout:
Bambang Dwisusilo

'Domesticating forests: How farmers manage forest resources' has been achieved with the financial help of the European Community, with additional support from IRD, CIFOR and ICRAF. The views expressed in this publication are those of the authors and do not necessarily reflect the views of these institutions.

Contact address:

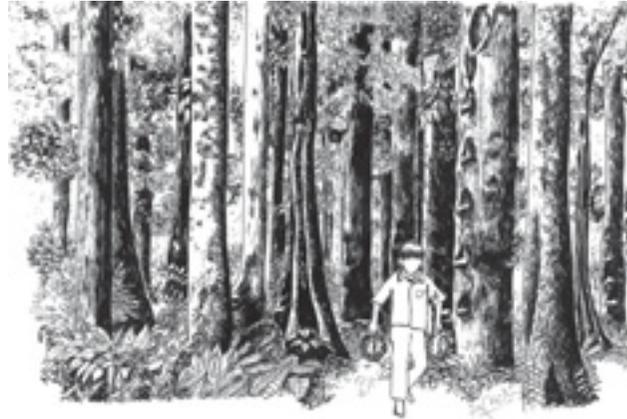
Institut de Recherche pour le Développement
IRD, 213 rue La Fayette, 5480, Paris Cedex 10, France

Center for International Forestry Research
Jalan CIFOR, Situ Gede, Sindang Barang,
Bogor Barat 16680, Indonesia
P.O. Box 6596 JKPWB, Jakarta 10065, Indonesia

The World Agroforestry Centre
ICRAF, Headquarters, United Nations Avenue, Gigiri,
PO. BOX 30677-001100 GPO, Nairobi, Kenya

ICRAF–Southeast Asia Regional Office
Jalan Cifor, Situ Gede, Sindang Barang, Bogor Barat 16680, Indonesia
PO. Box 161, Bogor 16000, Indonesia





- **FORRESASIA.** Alternative Strategies for Forest Resources Development in Southeast Asia is a programme funded by the European Community, associating NGOs and scientists from the social and biological sciences for the documentation and evaluation of various models of forest management.
- **IRD** is a French public science and technology research institute under the joint authority of the French ministries in charge of research and overseas development. It performs research and manages scientific programmes contributing to the sustainable development of the countries of the South, with an emphasis on the relationship between humans and the environment.
- **The Center for International Forestry Research (CIFOR)** was established in 1993 as part of the Consultative Group on International Agricultural Research (CGIAR) in response to global concerns about the social, environmental and economic consequences of forest loss and degradation. CIFOR research produces knowledge and methods needed to improve the well-being of forest-dependent people and to help tropical countries manage their forests wisely for sustained benefits. This research is done in more than two dozen countries, in partnership with numerous partners. Since it was founded, CIFOR has also played a central role in influencing global and national forestry policies.
- **The World Agroforestry Centre (ICRAF)** is an international institution devoted to agroforestry research and development. It is committed to the improvement of rural livelihoods through good governance for multifunctional landscapes supporting healthy farms with useful trees.

To . . .



...the families of Hyderus and Ashabi in
Kru
Pak Sultan Said Jama'a in Maninjau
Pak Kusnadi in Kecupak . . .

. . . And all the generations,
past and still to come,
of forest cultivators in South-east Asia and
in the world.

Here and there, with words, acts or just smiles.
Thanks for having been with us along our travels in these cultivated forests.
May your efforts be acknowledged and supported.



Foreword	<i>ix</i>
Introduction:	
Managing natural forests or cultivating forests on farmlands?	1
I – The framework of Forresasia:	
sustainable development of forest resources, which alternatives?	11
1. Objectives	11
2. Activities	14
3. The general framework of forest management in South-east Asia	15
4. The study sites	16
II – Forest people? Against the myths	19
1. ‘Indigenous’, in the context of island South-east Asia	22
2. Nomadic forest tribes or permanent farmers and swiddeners?	23
3. ‘Good forest people’ and ‘bad shifting cultivators’?	26
4. The forest is not only for subsistence	27
5. Forest communities and the global world economy	30
6. Forest people are more interested in non-timber forest products than in timber	31
III – Management of wild resources: hunting, gathering and extractivism	35
1. How does indigenous forest management integrate extraction activities?	37
2. Is the concept of extractive reserves as developed in the Amazon region useful in the South-east Asian context?	43
3. The history of forest extraction dynamics in Bulungan regency, East Kalimantan	45
4. Extraction of forest products in Siberida, Riau: the permanence of forest extraction as foundation of the economic system	48

5. Extractivism as an integral system: the Batak in Palawan	52
6. Forest collection and survival in the Bungo valley, Jambi, Sumatra, 1997–98	53
7. Extractivism in the Toba Batak highlands, North Sumatra: the opportunistic nature of forest products extraction for settled farming communities	57
8. The rush on birds' nests in East Kalimantan: who benefits from the trade? Lessons from Long Apari	58
9. Birds' nests: towards domestication?	61

IV – Forest culture on farmlands 63

1. Does smallholder forest culture exist?	65
2. Does forest culture relate to the conventional model of production and domestication?	70
3. Producing forest products: a historical perspective	74
4. Interstitial forest culture: benzoin gardens in North Sumatra	79
5. Rotational forest culture: rattan gardens and shifting agriculture in East Kalimantan	80
6. Semirotational forest culture: rubber gardens in Sumatra	86
7. Permanent forest culture: damar agroforests in Pesisir, Lampung, Sumatra	92
8. Permanent forest culture: fruit and timber agroforests in Maninjau, West Sumatra	99
9. Other examples of permanent forest culture: Indonesia	101
10. Other examples of permanent forest culture: South-east Asia and elsewhere	107
11. Common principles in smallholder forest culture	109
a. A close integration between smallholder forest culture and agriculture	110
b. A clear continuity between smallholder forest culture and natural forest	115
c. Can forest culture fulfil economic as well as environmental and social functions?	118

V – What are the comparative advantages of smallholder forest culture versus pure extraction or monocrop forestry? 121

1. Ecological qualities	123
a. Is smallholder forest management a threat to or a tool for biodiversity conservation?	124
b. Is smallholder forest management an alternative to protected areas for biodiversity conservation?	127
2. Technical qualities: Is forest culture a technical specialization that should be reserved for trained professional foresters?	129





3. Economic qualities	133
a. What are the economic advantages of smallholder forest culture?	133
b. What are the economic drivers of the evolution of smallholder forest culture?	139
c. How sensitive is smallholder forest management to market fluctuations?	140
4. Social qualities	143
a. Patrimony, social cohesion and social change	143
b. Redistribution of benefits to the poorer	144
c. Forest culture and local identity	144
5. Sociopolitical qualities: What makes the cultivated forest an important social or political resource?	147
6. Weaknesses	152
VI – Evolution	155
1. What are the current evolution dynamics of forest extraction?	157
a. Forest collection for subsistence purposes	158
b. Extractivism	159
2. Why do farmers move from forest extraction to forest culture?	161
3. What are the forms and impact of intensification of local forest culture?	162
4. Are local models of forest culture only transitional? Will they disappear as development proceeds?	164
VII – Extrapolation: What are the preconditions for the successful development of smallholder forest culture?	167
1. What are the preconditions for the successful development of smallholder forest culture?	169
2. The main condition for successful extrapolation: a general change in current paradigms of global forest management	171
VIII – Concluding remarks	173
Bibliography	177



Data, analyses and recommendations presented in this book have been principally derived from the Forresasiaproject, ‘Alternative strategies for forest resources management: extractivism, agroforestry or plantations?’, a research project on local forest management in island South-east Asia funded by the European Community within the IVth Framework Programme of DG XII between December 1996 and March 2001. The author compiled the information from the various reports and scientific papers the project generated. The final report to the European Union (EU), synthesized from individual reports by Arild Angelsen, Carmen Garcia-Fernandez, Tristan Le Cotty, Geneviève Michon, Rachmat Muhtaman, Honorato Palis and Achmad Purwanto, has been used as the major basis for this book.

The Forresasia project was conducted in Indonesia and the Philippines, with additional material from Europe. It has involved eight partner institutions in Europe (France, Spain, Norway) and South-east Asia (Indonesia and the Philippines), including universities, research institutes and non-governmental organizations with altogether 20 permanent or part-time scientists and nine research assistants, three Ph.D. students and five master students, as well as eight consultants.

The Forresasia project conducted detailed analysis of several management systems in the region, ranging from extraction in natural forests (logging and local systems of forest gathering, or extractivism), various examples of local forest culture by smallholder farmers and intensive forest plantation systems, including pulpwood estates (Eucalyptus), estate crops (oil palm and rubber) as well as smallholder specialized plantations (of cinnamon, coffee and clonal rubber). Parallel to detailed studies on local management systems including ecological, economic and socio-anthropological aspects, the project has developed two other fields of analysis: one concerning the influence of local, national and international markets of selected forest products on the profitability and evolution of local forest management systems, and the other on the impact of international instruments like the Convention on Biodiversity or Intellectual Property Rights on the dynamics of these systems. Results of the latter two studies are not necessarily included in the present book, but reference is made to relevant results whenever appropriate. (Full details on these two analyses appear in the final report of Forresasia to the EU as well as in annual scientific reports.)

The present book concentrates on forest management by local people. After delineating the study itself and introducing the forest people studied in chapters I and II, respectively, chapter III gives a global analysis of local systems of resource extraction from natural forests. The book’s main substance, however, consists of detailed reports and analysis of forest culture by smallholder farmers (chapters IV, V, VI and VII). Examples of specialized logging, industrial tree plantations and specialized woodlots on farmlands are not detailed here, but have been extensively used for the comparative analysis in chapter V. Comprehensive data on these systems appears in the annual and final scientific reports.

The material presented here on local forest culture in South-east Asia has been used as a major basis for the International Workshop on Cultivating (in) Tropical Forests? The Evolution and Sustainability of Intermediate Systems between Extractivism and Plantations held in Lofoten, Norway, in July 2000, after being organized jointly by Forresasia and the Center for International Forest Research (CIFOR). Proceedings of the workshop, as well as a book collecting contrasted examples of intermediate systems of forest management around the world, are being finalized.

In addition to the Forresasia results, which form the main body of this book, we have included relevant material derived from related projects on local forest management and forest culture, carried out by several FORRESASIA members before or outside the EU-funded project. These include several research programmes on complex agroforestry systems in Indonesia, carried out between 1992 and 1996 by scientists from Institut de Recherche pour le Développement seconded to International Center for Research in Agroforestry (ICRAF, presently the World Agroforestry Center), from which are drawn the examples of damar agroforests in the Pesisir, rubber agroforests in Sumatra (also analysed by Arild Angelsen in Riau from 1993 to 1995), and the Maninjau fruit forest in West Sumatra. The FORRESASIA study on cultivated rattan forests in East Kalimantan–Pasir has been carried out jointly with a CIFOR team working on a world comparison of various non-timber forest products management systems, details of which are presently in press.

We have chosen to designate the cultivated forests we present in this book under the term ‘forest’, with the adjunction of the main cultivated production. We will talk of ‘benzoin forests’, ‘damar forests’, ‘rubber forests’, etc. In other publications, we may have used different terms. The damar forest for example has been abundantly described under the term ‘damar agroforest’, the rubber forest under the terms ‘rubber agroforest’, ‘rubber gardens’ or ‘jungle rubber’. ‘Agroforest’ was created in 1982 to emphasise the fact that these forests are *cultivated* and *located on farmlands*. ‘Garden’ is used to render the connotation of the local terms used to designate these systems. This diversity shows at least that, in spite of our previous efforts to promote the unifying concept of ‘agroforest’, there is not yet a commonly accepted term for these original systems that are neither like a natural forest nor like a garden. Elements of semantic discussion will occur in chapter VII, Extrapolation.





Names of scientists and partners associated with the FORRESASIA project

- Leading Institute: Institut de Recherche pour le Développement (IRD, formerly ORSTOM), France**
Project coordinator: Geneviève Michon (ethnobiologist)
Associated scientists: permanent: Esther Katz (ethnologist); part-time: Hubert de Foresta, Patrice Levang (agro-economist), (ecologist), Grégoire Vincent (ecologist)
Associated students: Stéphanie Aulong (Master's, forestry and agro-economy), Isabelle Clément (Ph.D., anthropologist)
Consultants: Emmanuelle Bérenger (forester), Marina Gouloubinof (anthropologist), Miriam van Heist (geographer), Bernard Sellato (anthropologist),
Research assistants: Mardan Saragih, Adi Sudarmanto

- Universidad Complutense de Madrid, Department of Ecology, Spain**
Team leader: Miguel Angel Casado
Associated scientists: Pilar Martin de Agar
Associated student: Carmen Garcia Fernandez (Ph.D., Ecologist)

- Christian Michelsen Institute, Norway**
Team leader: Arild Angelsen (economist)
Associated students: Arvid Loken (Master's, economy), Knut Lutnes (Master's, economy), Narve Rio (Ph.D., economist),
Research assistant: Jusup Tarigan

- Indonesian Institute for Science, Department of Biology, Indonesia**
Team leader: Eko Baroto (botanist)
Principal scientist: Achmat Purwanto (botanist)
Associated scientists: Francisca Murti S, Siti Susiarti

Universitas Indonesia, Department of Anthropology, Indonesia

Team leader: Iwan Tjitradjaya (anthropologist)

Associated scientist: Myrna Safitri (anthropologist)

Associated students: Prudensius Maring (Master's), Keron A. Petrus (Master's), Bediona Philipus (Ph.D.),

The Indonesian Tropical Foundation, Indonesia

Team leader: Dwi Rachmat Muhtaman

Consultants: Mustapha Alwi, Wibowo Djatmitko

**The Research Institute of the Department of Environment and Natural Resources,
The Philippines**

Team leader: Honorato G. Palis (ecologist)

Associated scientists: Juan B. Eborá, Medel N. Limsuan, Merlyn N. Rivera, Manolito U. Sy,

Research assistants: Bernadette S. Alcantara, Jose Alan A. Castillo, Celia A. Lat, Perfecto Melo, Artemio Ortega, Gloria G. Taguam

Solagral, France

Team leader: H  l  ne Ilbert (economist)

Associated scientist: Tristan Le Cotty (economist)

Consultants: Alexandrine Azam Catherine Vial-Debas

Names of scientists associated to former IRD studies on complex agroforestry systems

Genevi  ve Michon (IRD, seconded to ICRAF)

Hubert de Foresta (IRD, seconded to ICRAF)

Patrice Levang (IRD)

Names of scientists involved in the CIFOR study on rattan

Team leader: Brian Belcher

Associated scientists: Sonya Dewi, Patrice Levang (IRD, seconded to CIFOR)

