

Achievements of Dutch Research in Tropical Rain Forests

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LIST OF ACRONYMS

BCRS	Netherlands Remote Sensing Board (the Netherlands)
C&I	Criteria and Indicators for Sustainable Forest Management
CIFOR	Centre for International Forestry Research (Indonesia)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora (Switzerland)
CLD	Corporación Latinoamericana para el Desarrollo (Ecuador)
CML	Centrum voor Milieustudies Leiden - <i>Centre of Environmental Science</i> (RUL, the Netherlands)
CNRS	Centre National de Recherche Scientifique - <i>National Centre for Scientific Research</i> (French Guiana)
CTO-NIOO	Nederlands Instituut voor Oecologisch Onderzoek, Centrum Terrestrisch Oecologie- <i>Netherlands Institute for Ecological Research, Centre Terrestrial Ecology</i>
CVPED	Cagayan Valley Programme on Environment and Development (the Philippines)
DDB	Deskundigengroep Duurzaam Bosbeheer - <i>Dutch Expert Group on Sustainable Forest Management</i> (the Netherlands)
DGIS	Directoraat Generaal Internationale Samenwerking - <i>Directorate-General for International Cooperation, Ministry of Foreign Affairs</i> (the Netherlands)
DLO	Dienst Landbouwkundig Onderzoek - <i>Department of Agricultural Research</i> (LNV, the Netherlands)
ETFRN	European Tropical Forest Research Network
EU	European Union (Belgium)
EZ	Ministerie van Economische Zaken - <i>Ministry of Economic Affairs</i> (the Netherlands)
FAO	The Food and Agricultural Organization of the United Nations (Italy)
FINNIDA	Finnish Development Agency (Finland)
FRIM	Forest Research Institute Malaysia (Malaysia)
FSC	Forest Stewardship Council (Mexico)
fte	Full Time Equivalent
GEF	Global Environment Facility (USA)
GIS	Geographic Information System
GTZ	Gesellschaft für Technische Zusammenarbeit (Germany)
IBN-DLO	Instituut voor Bos- en Natuur Onderzoek - <i>Institute for Forestry and Nature Research</i> (DLO, the Netherlands)
ICRAF	International Centre for Research in Agroforestry (CGIAR, Kenya)
IDPAD	Indo Dutch Programme on Alternatives in Development
IDRC	International Development Research Centre (Canada)
IEBR	Institute of Ecology and Biological Resources (Vietnam)
INEFAN	Instituto Nacional Forestal y de Areas Naturales (Ecuador)
IPHAE	Instituto Para Hombre Agricultura y Ecologica (Bolivia)
ISU	Isabela State University (the Philippines)
ITC	International Institute of Aerospace and Earth Sciences (the Netherlands)
ITTO	International Tropical Timber Organization (Japan)
IUCN	World Conservation Union (Switzerland)
IUFRO	International Union of Forestry Research Organizations (Austria)
LBA	Large scale Biosphere Atmosphere experiment in Amazonia (the Netherlands, Brazil)
LCA	Life Cycle Assessment
LPI	Indonesian Institute of Sciences (Indonesia)
LNV	Ministerie van Landbouw, Natuurbeheer en Visserij - <i>Ministry of Agriculture, Nature Management and Fisheries</i> (the Netherlands)
NbvT	Nederlandse Bond van Timmerfabrikanten - <i>Netherlands Union of Timber Producers</i>

NGO	Non-Governmental Organization
NLR	National Aerospace Laboratory (the Netherlands)
NNM	Nationaal Natuurhistorisch Museum (Naturalis) - <i>National Museum of Natural History</i> (the Netherlands)
NRP-II	National Research Programme on Global Air Pollution and Climate Change - second phase (1995-2001) (the Netherlands)
NRSP-2	National Remote Sensing Programme - second phase (1995-2000) (the Netherlands)
NTFP	Non-Timber Forest Products
NUFFIC	Nederlandse Organisatie voor Internationale Samenwerking in het Hoger Onderwijs - <i>Netherlands Organization for International Cooperation in Higher Education</i>
NWO	Nederlandse Organisatie voor Wetenschappelijk Onderzoek - <i>Netherlands Organization for Scientific Research</i> (the Netherlands)
NWO-biod	NWO Priority Programme 'Biodiversity in disturbed ecosystems' (the Netherlands)
OCW	Ministerie van Onderwijs, Cultuur en Wetenschappen - <i>Ministry of Education, Culture and Science</i> (the Netherlands)
ODI	Overseas Development Institute (United Kingdom)
ORSTOM	Office de la Recherche Scientifique et Technique Outre-Mer (France)
PACPNT	Projet Autonome pour la Conservation du Parc National de Taï (Côte d'Ivoire)
PCARRD	Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (the Philippines)
PPF	Proyecto de Asesoramiento en Política Forestal (Ecuador)
PROFORS	Proyecto Forestal Sucumbios (Ecuador)
PROMAB	Programa Manejo de Bosques de la Amazonia Boliviana - ' <i>Sustainable use of forest products in the rain forest of Northern Bolivia</i> ' (UU, the Netherlands)
PROSEA	Plant Resources in South-East Asia (the Netherlands)
RHHB	Rijksherbarium Hortus Botanicus (Leiden University, the Netherlands)
ROBO	Working group remote sensing research on forest (BCRS, the Netherlands)
RUG	Rijksuniversiteit Groningen - <i>Groningen University</i> (the Netherlands)
RUL	Rijksuniversiteit Leiden - <i>Leiden University</i> (the Netherlands)
SC-DLO	Winand Staring Centrum, Instituut voor het Onderzoek van het Landelijk Gebied - <i>Staring Centre for Integrated Land, Soil and Water Research</i> (the Netherlands)
SHR	Stichting Hout Research - <i>Timber Research Foundation</i> (the Netherlands)
SNV	Organisatie voor Ontwikkelingssamenwerking en Bewustwording - <i>Dutch Development Organization</i> (the Netherlands)
TNO	Toegepast Natuurwetenschappelijk Onderzoek - <i>Netherlands Organization for Applied Natural Science Research</i> (the Netherlands)
TRF	Tropical Rain Forest
TISTR	Thailand Institute of Scientific and Technological Research (Thailand)
UNITECH	Papua New Guinea University of Technology (Papua New Guinea)
UTB	Universidad Technica del Beni (Bolivia)
UU	Universiteit van Utrecht - <i>Utrecht University</i> (the Netherlands)
UvA	Universiteit van Amsterdam - <i>University of Amsterdam</i> (the Netherlands)
VROM	Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieu - <i>Ministry of Housing, Spatial Planning and Environment</i> (the Netherlands)
VWS	Ministerie van Verkeer en Waterstaat - <i>Ministry of Transport, Public Works and Water Management</i> (the Netherlands)
WAU/LUW	Landbouwwuniversiteit Wageningen - <i>Wageningen Agricultural University</i> (the Netherlands)
WOTRO	Stichting voor Wetenschappelijk Onderzoek van de Tropen, NWO - <i>Netherlands Foundation for the Advancement of Tropical Research</i> (the Netherlands)
WWF	World Wide Fund for Nature (Switzerland)

SUMMARY

Following the request of the Dutch Minister for Development Cooperation, Mr. J.P. Pronk, the Tropenbos Foundation has prepared a compilation of the present achievements of tropical rain forest research funded by the Dutch Government and executed by Dutch research groups. This report presents a brief review of these achievements and illustrates to what extent Dutch research has contributed to improved conservation and wise use of tropical rain forests. The approach of the study includes a review of past and current long-term research programmes which, together with illustrative examples of achievements, are presented in the main text and further detailed upon in the annexes. The review revealed a number of achievements classified into three categories:

(i) Information, Methods and Techniques:

- generation of baseline information for forest/land-use as input for local/regional natural resource management plans;
- development of forest monitoring systems;
- formulation and implementation of recommendations and guidelines for protected area management and biodiversity conservation strategies;
- generation of technical, ecological and socio-economic knowledge and development of techniques, guidelines and plans for sustainable forest management.

(ii) Capacity Building and Training:

- academic training of more than 200 Dutch and tropical MSc and more than 50 PhD students;
- technical training of many local foresters and field personnel;
- extension and training of local communities in forest and natural resource management;
- institutional strengthening through strategic advice, formulation of educational programmes and logistic support.

(iii) Effects on Policy and Management/Societal Results:

- application of newly developed land-use planning methodologies (e.g. Colombia, Costa Rica, Guyana, Cameroon);
- development of conservation strategies and guidelines leading to the improved status of protected areas (South-East Asia, West Africa, the Guianas);
- adaptation of forestry legislation and forest management guidelines and implementation of more sustainable harvesting practices and restoration strategies (e.g. Guyana, Ecuador, Cameroon, Gabon, Indonesia, Suriname, Malaysia);
- provision of strategic input into development and implementation of Dutch and international tropical rain forest policies.

From the compilation and analysis of the achievements it is concluded that:

- 1) over the last decade, Dutch research groups have successfully addressed complex conservation and sustainable use issues in tropical rain forest;
- 2) long-term integrated and interdisciplinary research programmes have facilitated the process of translation of research results into policy regulations and forest/land management plans;
- 3) increased knowledge of tropical rain forests and a better understanding of societal processes in relation to ecosystem functioning have appeared to be fundamental to identifying and implementing conservation measures and sustainable forest/land use systems for the benefit of communities at local, regional and global levels;
- 4) participation of stakeholders at different levels in research planning and execution has proven crucial to the success of Dutch research in tropical rain forest areas.

1. INTRODUCTION

1.1 Background

The central objective of the Dutch government's policy on tropical rain forest (TRF) is 'to encourage the preservation of the tropical rain forest through balanced and sustainable land and forest use, with a view to halting the current rapid process of deforestation, along with other environmental damage and degradation' (LNV, 1992). Strengthening of research executed by Dutch and international institutions/research programmes, is part of the strategy to implement this policy. Consequently, considerable Dutch funds and efforts have been and are being directed to execute research in tropical rain forests, and a broad Dutch expertise and capacity in this field has become available.

The seminar 'Research in tropical rain forest. Its challenges for the future', funded by DGIS, was organized by The Tropenbos Foundation and took place on 25 and 26 November 1997. During the seminar, research facilitated by the Netherlands was presented and discussed, and recommendations were developed for improving the link between research and policy. As a basic document for the seminar, a comprehensive survey and database were made for Dutch research activities, giving insight into ongoing programmes, involved institutions and research capacity, and thematic orientation (Simons, 1997). However, certain vital aspects of research could not yet be analysed satisfactorily, including achievements and impacts of research.

As a follow-up to the seminar, The Tropenbos Foundation has now been invited by the Minister for Development Cooperation of the Netherlands, Mr. J.P. Pronk, to present a compilation of main achievements of Dutch research in tropical rain forests.

1.2 Objectives, approach and outputs

The objective of this report is to present achievements of Dutch funded research and to illustrate how it has contributed to improved conservation and wise use of tropical rain forests. The results of this study are aimed at facilitating discussions on future directions of Dutch TRF research.

For selecting research activities included in this study, the following criteria are used:

- research is organized in medium to long-term programmes (individual projects are excluded);
- research themes of the programme are directly relevant to conservation and sustainable use of tropical rain forests (for instance, a more generally and globally oriented programme such as the National Research Programme on Global Air Pollution and Climate Change (NRP-II) has been excluded);
- research is ongoing for more than three years (in order to assess achievements).

The survey and database of Dutch TRF research was consulted to select the relevant programmes. Coordinators and managers of the programmes concerned were requested to provide the information. Subsequently, the replies have been analysed and used to compile the present report. In order to obtain comparable contributions, the following categories of achievements were distinguished:

1. Information, methods and techniques

Generated insights and knowledge, and methods and techniques that have been developed, indicated by (scientific) publications, books, other reports, maps and databases.

3. ACHIEVEMENTS OF SELECTED RESEARCH

3.1 Introduction

The mainstream of the selected research is field level research executed in a certain area of a specific country. It is a way to increase insight in the real world and the interactions between ecosystems and social systems. It serves best the combined objectives of direct impact on policy and management, institution building and increasing the well-being of local people. The impact is in the first place confined to the specific area and country where the programme is executed. However, policies, techniques and methods may be extrapolated to other countries.

The following section summarizes and highlights the achievements by category.

3.2 Information, methods and techniques

Over the years, Dutch research in TRF has resulted in an increased knowledge, both fundamental and applied, on many aspects of forest conservation and management. In addition, research strategies, methodologies and techniques have been developed. Main achievements by theme include:

Land-use planning: methodologies for integrated natural resource surveys have been developed to support land-use planning in rain forest regions of Cameroon, Colombia and Costa Rica. Remote sensing and GIS technologies were used and further optimized. The survey outputs, including databases, maps and reports, provide baseline information to formulate local and regional plans for natural resources management.

Forest monitoring: a forest monitoring system, using radar remote sensing, has been defined and is being further developed, based on research in Colombia, Guyana and Indonesia.

Conservation of ecosystems and biodiversity: at many research locations, knowledge and insights have been generated on structure and functioning of the rain forest ecosystem, including new information on biodiversity (flora, fauna, ecosystems and landscapes). Also, diversity in human induced forest types has been surveyed. Besides scientific publications, handbooks and field guides, outputs include herbarium collections and zoological collections and exhibitions. Based on the research findings, recommendations and guidelines have been developed for protected area management and conservation strategies.

Sustainable forest management (including forest restoration): new insights have been generated into a variety of issues:

- operational systems for sustainable timber harvesting in tropical rain forest, including development of criteria and indicators (Brazil, Indonesia, Malaysia, Cameroon, Gabon, Guyana, Suriname);
- techniques for planting of Merantis and other hardwood species (Indonesia);
- rehabilitation of mangroves (Vietnam);
- use of lesser-known timber species (Cameroon, Guyana, Indonesia);
- timber research: more efficient utilisation of tropical timber, and substitutions with temperate timber products (research by TNO and SHR);
- inventory of uses and harvesting of NTFP (Bolivia, Indonesia, Cameroon, Colombia);

Main outputs include: operational guidelines and manuals for sustainable forest management adapted to local conditions, and methodology and techniques for reforestation, timber processing etc.

Socio-economic aspects: research on socio-economic aspects of forest conservation and management has resulted in new insights into people-forest interactions, i.e. concerning:

- dynamics of deforestation: role of local people, land-use and policies (the Philippines, Costa Rica);
- relations between tropical deforestation and economic factors/development (based on case studies in a number of TRF countries);
- the role of law in forest policy and management (Ecuador);
- indigenous knowledge and indigenous forest use and management (Bolivia, Colombia, Guyana, Indonesia, Tanzania)

Research findings have led to recommendations and guidelines on social dimensions of sustainable forest management, stressing the need for negotiation and involvement of all stakeholders in setting objectives and defining practices for forest management.

3.3 Capacity building and training

Dutch TRF research has produced the following achievements in capacity building and training (in the TRF countries):

Training at various levels, including:

- MSc and PhD programmes: in the last 20 years many students from developing countries have graduated in various disciplines of forest management and conservation, receiving their practical training through participation in Dutch research programmes. Dutch key institutions include WAU, CML, NNM, ITC, and the Universities of Amsterdam, Leiden, Utrecht and Groningen. As an illustration some numbers: in the CML programme in the Philippines about 60 forestry graduate students and four PhD students have been trained since 1989; 10-12 students per year are joining the WAU MSc programme on Tropical Forestry and 1-2 candidates per year the PhD programme; between 1993 and 1996, 15 PhD students and 73 MSc students from tropical countries were involved in research at the Tropenbos sites (against 25 PhD and 65 MSc students from the Netherlands);
- training of local foresters and field personnel in a range of subjects, among which: nursery techniques, forest inventory, tree and plant identification, techniques for timber harvesting and harvesting of NTFP, collection and analysis of socio-economic data, etc. Training methods include on-the-job training, training courses and workshops. A great number of local staff in various countries have been trained.

Extension and training of local communities: at the various research sites people have been trained in aspects of forest and natural resource management, including development and implementation of management plans, harvesting of NTFPs, tree planting and sustainable agriculture.

Strengthening of institutions: local institutions were strengthened through strategic counselling, formulation of educational programmes and logistic support. Furthermore, the presence of Dutch research programmes in TRF countries has stimulated cooperation and information exchange among research institutions, i.e. through joint research and participation in workshops and seminars. Many local researchers were sponsored to attend international scientific meetings and seminars.

An important sustaining impact of the training activities is the fact that many of the former trainees now hold key positions in their national institutions and Governments (research institutes, universities, forest and environmental departments).

3.4 Applications and impacts of research

3.4.1 Effects on policy and management

Effects on policy and management are established through the joint impact of generation and dissemination of research findings, representation of researchers in advisory committees, participation in workshops, lobbying and awareness building. Dutch TRF research has resulted in the following achievements:

Land-use planning: application of newly developed land-use planning methodology in Colombia, Costa Rica, Guyana and Cameroon, providing the basis for more stable land-use.

Conservation of ecosystems and biodiversity: development of conservation strategies and guidelines, and improved status of protected areas in a number of countries, including:

- research findings on fauna and flora diversity in rain forest regions (South-East Asia, West Africa, the Guianas) provided by NNM, PROSEA, WAU and the Universities of Leiden (RHHB) and Utrecht, have been used in the development and implementation of CITES, the Biodiversity Convention and national legislation on protected species;
- insights obtained through orangutan research and surveys in Sumatra and Kalimantan form the basis for the Indonesian national orangutan survival programme and have also led to the establishment of new conservation areas;
- information and lobbying activities of the CML programme in the Philippines were essential in the safeguarding of the Sierra Madre forest against road building and in attracting attention to this area. As a result, Sierra Madre is now one of the ten priority sites for biodiversity conservation in the Philippines, funded by DGIS and the World Bank/GEF. Similar effects can be observed at other sites, e.g. Taï National Park in Côte d'Ivoire.

Sustainable forest and natural resource management: comprising adaptation of forestry legislation and guidelines, application of more sustainable practices for harvesting of timber and NTFP, and reforestation:

- adaptation of national forest legislation and operational guidelines in Cameroon, Guyana, Indonesia, Gabon, Suriname, Ecuador, Malaysia, incorporating more sustainable harvesting practices. These practices, based on long-term forestry research, are now starting to be applied in the countries concerned and also in Brazil and Bolivia;
- in Northern Bolivia, local people are applying an improved production and harvesting system of the Amazon nut, resulting in higher yields;
- reforestation of Merantis is taking place in Indonesia. There is a growing interest for the technique from other countries in South-East Asia, and the method is also successfully applied to other hardwood species;
- in Vietnam degraded mangroves of the Mekong Delta are being rehabilitated with the involvement of local people;
- in Colombia, Amerindian communities were assisted in the formulation of management plans for their territories including the planning and management of commercial fisheries;
- researchers participated in meetings of the Ecuadorean Forest Agency and gave suggestions for adapting the Ecuadorean forest legislation to suit local needs.

In addition, Dutch research programmes and institutions have given recommendations and inputs to the development and implementation of Dutch TRF policy, and inputs to international policies, e.g. the ITTO criteria and indicators.

3.4.2 *Societal results*

Societal results are defined here as the impacts of research on: (i) the well-being of local people, (ii) awareness at various levels, and (iii) the conservation status of tropical rain forests. They are more complex to assess and evaluate than other achievements, due to a sometimes considerable time gap between execution of the research and the impacts, and also due to a more diffuse relationship between cause, i.e. research, and effects.

The well-being of local people: increased attention to peoples' needs and poverty alleviation, perceptions and well-being is expressed in the growing involvement of social sciences in Dutch TRF research, the development of community based forest and environmental management plans, and training and extension activities. These efforts have, for instance, led to the increased production of forest products (nuts, honey, sugar palm sap, etc.), employment opportunities in conservation schemes, and more sustainable land-use practices (erosion control, reforestation etc.), all contributing to improved living conditions.

Awareness raising: generation and dissemination of research results have been instrumental in the adaptation of policies, societal behaviour and processes, and have greatly helped to enhance local and global awareness and concern for the fate of tropical rain forests.

Conservation status of TRF: information detailed above and in Annexes 1 and 2 clearly demonstrate how Dutch TRF research is geared to improve conservation and sustainable use of TRF. Forest legislation has been adapted and is being implemented; reforestation is taking place; local and national conservation strategies are being developed and implemented; and local capacities have been strengthened. These combined efforts have helped to improve the conservation status of TRF, or are at least contributing to counteract further depletion.

3.5 **Role and involvement of (inter)national institutions**

Dutch TRF research is implemented in partnership with local institutions. Annex 2 presents the institutions participating in the various programmes. The cooperation involves both formulation and execution of the research, reflecting as much as possible the national and local needs and priorities. For instance, strategic planning was carried out at all Tropenbos sites using Rapid Rural Appraisal and Objective Oriented Project Planning exercises. Research in the Bolivian Amazon (PROMAB) is almost entirely based on and geared to the needs of local communities.

There is also collaboration with a large number of international research institutions and programmes, including CIFOR, IUFRO, ITTO, the World Bank/GEF and EU research programmes.

4. DISCUSSION

Tropical rain forests are among the world's most complex and severely threatened ecosystems. Their disappearance has led to serious land degradation in many tropical regions. It is within this context that the strengthening of research and institutions is considered one of the basic strategies in Dutch policy on tropical rain forests. Increased knowledge of TRF and a better understanding of societal processes and their interactions with ecosystems help to identify and take measures to conserve and sustainably use TRF for the benefit of people. Given the complexity of TRF management and conservation, and the urgency of current issues (i.e. reaching sustainable timber harvesting by 2000, biodiversity conservation, forest resource protection and forest restoration) there is a need for continuing and increased support to research, including Dutch research, preferably in long-term strategic research programmes. Such a programme-oriented approach, applied by a number of Dutch institutions (see chapter 3 and Annex 2), is regarded as highly suited to a problem and demand oriented approach, tailored to the needs in developing countries, as well as to multi- and interdisciplinary cooperation, participation by users and a combination of research and capacity building. These programmes can also facilitate the development of a sound scientific knowledge base.

The achievements presented in this study indicate the broad scope of Dutch research in tropical rain forests, covering a variety of thematic issues, i.e. sustainable forest management, biodiversity conservation and sound land-use planning. The measurement of impacts of research in terms of area of tropical rain forest preserved, area of forest brought under sustainable management, and the slowing down of deforestation etc. is a difficult and complex task. However, the present review has revealed that Dutch research has indeed contributed to a better understanding of tropical rain forests. The understanding comprises the importance of rain forests for sustaining local communities, the functioning of ecosystems and their biological diversity, the rate at which rain forests disappear, methods for more sustainable management and requirements for further insight and knowledge. Similarly, local institutions have been strengthened and many university students and foresters from tropical rain forest countries have received training within the framework of Dutch research - and education programmes.

5. CONCLUSIONS

From the present study it has become clear that over the last five to ten years Dutch TRF research has become better geared to societal and policy demands, and has become increasingly demand-driven and problem-oriented. This is particularly true in the case for research conducted in the framework of forest policy and management oriented at development programmes such as the Tropenbos Programme. Currently, direct impacts on policy and management in a number of tropical countries, where legislation has been adapted, planning has improved, or forest areas have been restored can be observed (see chapter 3). The long-term presence of research programmes facilitates the process of translation of research results into policy regulations and forest/land use management plans through anchoring programmes in national policies. A clear commitment by TRF countries to conservation and sustainable use of their forests is an important prerequisite for successful implementation of techniques, guidelines and legislation. This condition stresses the limitation of research: it may result in high quality outputs with both fundamental and applied approaches, but societal effects may still be marginal when outcomes of research are not translated into policies and management strategies. In this respect a joint responsibility emerges, including all stakeholders/actors, among which international organizations, national governments, private enterprises, local communities, NGOs and the scientific community itself.

It is often argued that knowledge of tropical rain forests is still limited. This is primarily due to the fact that until fairly recently, public awareness of the importance of tropical rain forests and their rapid depletion was almost non-existent, and funding remained scarce. It was not until the mid 1980's that the fate of the rain forests became an issue on the political agenda and that TRF research gained momentum as more funds became available. Indeed, over the last decade, Dutch research groups have successfully addressed complex conservation and sustainable use issues in tropical rain forests. From the discussed achievements it is concluded, that:

- (a) user oriented long-term interdisciplinary research programmes have facilitated the process of translation of research results into policy regulations and forest/land management plans;
- (b) increased knowledge of tropical rain forests and a better understanding of societal processes in relation to ecosystem functioning have appeared to be fundamental to identifying and implementing conservation measures and sustainable forest/land use systems for the benefit of communities at local, regional and global levels;
- (c) participation of stakeholders at different levels in research planning and execution has proven crucial to the success of Dutch research in tropical rain forest areas.

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ANNEX 1 ACHIEVEMENTS OF SELECTED DUTCH RESEARCH PROGRAMMES IN TROPICAL RAIN FORESTS

Programme / Institute	Achievements			
	New insights, information, methodology	Effects on policy and management	Impact on capacity building and training	Societal results
BCRS	Knowledge on potential and practical applications of remote sensing in forest inventory and monitoring, with special emphasis on radar systems. Definition and development of operational forest monitoring systems, using radar satellite and including methodology, technology and techniques.	Application and further development of radar based forest monitoring system in Indonesia, Colombia and Guyana. Applications in land cover change monitoring, forest inventory, monitoring of selective logging and shifting cultivation. Also instrumental in law enforcement.	Forest officers and students are trained in the three countries concerned.	Indirect: in supporting sustainable forest management, which is also intended to improve the well-being of local communities.
CML/ CVPED Programme	Insight into all kinds of social science matters concerning the Sierra Madre forest area, the Philippines. Including: mechanisms (causes, actors, role of local, national and global policies) of deforestation.	(i) information and lobbying activities of CVPED were essential in the safeguarding of the Sierra Madre forest against road building and in attracting attention for including this area in the GEF funding for the 10 priority sites for biodiversity conservation in the Philippines; (ii) the work of CVPED was essential for designing and realising the presently implemented DGIS funded project of the Sierra Madre.	(i) training at various levels: about 60 forestry graduate students, 4 PhD students, senior University staff; (ii) establishment of the Environmental Information Centre at the ISU campus and training courses for local NGOs and people.	Increased attention to local people's needs and skills in managing natural resources. This has been achieved by a 'practical science approach' and is evident from a new generation of local projects.
DLO	New insights into: (i) the possibility to integrate rain forest use and protection; (ii) the distribution of the indicator species Orangutan; (iii) the possibilities to reduce the damage to the forests of Central-Kalimantan and Vietnam.	In Vietnam degraded mangroves of the Mekong Delta are being rehabilitated with the involvement of local people. Protection of Orangutans.	Education of PhD and MSc students by (on-the-job) training, orientations and workshops.	Increase of income and protection of forest in Vietnam.
NNM	Generation and diffusion of information on the zoological diversity of tropical rain forest regions in the Far East and South America. Outputs concerns zoological collections and exhibitions; scientific as well as general publications, electronic information systems and symposia.	Information is used to direct and support policy and management decisions regarding the biodiversity resources of rain forest regions. More specifically, information backs up CITES and consequent legislation.	NNM hosts and transfers knowledge to visiting zoologists and students from tropical countries, particularly from South-East Asia, and participates in local projects with training aspects.	Various audiences have benefited from NNM outputs: forestry (eg forest pest identification, Indonesia, Suriname), education and awareness (eg on significance of ecosystem diversity), human and animal health (eg vector identification, mosquitoes, scrub itch).

Programme / Institute	Achievements			
	New insights, information, methodology	Effects on policy and management	Impact on capacity building and training	Societal results
NWO-Programme 'Biodiversity in d i s t u r b e d ecosystems'	Scientific, fundamental knowledge on biodiversity, with emphasis at species level, and on interactions between species and the ecosystem.	Support to conservation policy and strategies for biodiversity conservation.	Training of university students from rain forest countries, both at MSc and PhD level.	Development of strategies for ecological restoration of degraded tropical montane rain forests.
PROSEA	20 volume Handbook on plant resources of South-East Asia with accompanying Databank, Bibliographies and CD-ROM. 11 Volumes (one per commodity group) are already published.	Handbooks on forestry-related commodity groups are aimed at building the information-base in order to reach the Year 2000 objective of 'sustainable forestry'. These activities have been strongly supported by ITTO, EC and Tropenbos.	Development of expertise in the cooperating national institutions in Indonesia, Malaysia, the Philippines, Vietnam, Papua New Guinea and Thailand.	Provided information can contribute to awareness of the opportunities, but also dangers of exploiting the surrounding biodiversity
RUG	Insight in: (i) the relations between tropical deforestation and economic factors/development; (ii) the role of law in forest policy and management.	Influence on the Ecuadorean forest legislation by attending of and participating in meetings of farmers' cooperatives and meetings of the highest level of the Ecuadorean Forest Agency (INEFAN).	Two Ecuadorean researchers, one sociologist and one lawyer, were trained in legal anthropological theory and methods and are currently working for international organizations.	
RUL-rhbb	(i) Publication of international Flora Malesiana; description of all taxa, keys, geographical distribution, habitat, uses etc.; (ii) 20 monographic studies of vascular plants taxa in Malesia; (iii) computerisation of Flora Malesiana information (iv) anti-cancer, anti-aids plant screening programme.	Contribution to the Biodiversity Convention.	(i) Yearly 20-50 undergraduates attend courses of the RUL-rhbb; (ii) 6 MSc students per year; (iii) many Dutch and Indonesian PhD students; (iii) training programmes on a.o. herbarium practice for the GEF Indonesia Biodiversity programme. the WWF Lorents Park management etc.	
TNO Building and construction research	Insight in the possibilities of substituting tropical timber products with temperate timber products and home grown wood and the possibilities of making better use of timber from diverse tropical forests. Development of LCA methodologies in order to compare and quantify the environmental effects of wood utilisation from different sources.		Courses for local trainers of wood machiners in TRF.	Elevated efficiency in wood utilization. Reduced pressure on rain forests.

Programme / Institute	Achievements			
	New insights, information, methodology	Effects on policy and management	Impact on capacity building and training	Societal results
Tropenbos-General / other	Strategy for development of criteria and indicators for sustainable forest management; research strategy on NTFP; research strategy on biodiversity; insights in relations between tropical deforestation and economic factors and development; insight in role of law in forest policy (case study Ecuador);	Advice to Dutch policy on tropical rain forests, eg through participation in Ad Hoc working group Sustainable Forest Management and advice to ITTO delegation. Participation in international committee: EFRN, CIFOR Scientific Support Group, strategy for C&I in national processes in various countries.	Administrative agreement at high political level resulting in strong commitment of participating institutes. Synergetic contact between PhD researchers and the Tropenbos site programmes.	Awareness raising, both in tropical countries and the Netherlands, especially on importance of TRF and the role of research.
Tropenbos-Cameroon	Methodologies for a multi-purpose land inventory, including assessment of biophysical characteristics and biodiversity. Insight in traditional farming practices and their environmental impact, and in the social dimension of forest use, policy and management. Insight in ecological effects of logging, and in forest regeneration and fungal diversity in relation to disturbance. Low impact logging system adapted to local conditions. Insight in potential uses of lesser known timbers and uses of NTFPs.	Low impact logging is being tested by a timber company (Wijma). Contribution to the development of a land management plan for South Cameroon. Contribution to seminars and meetings of the Cameroon Ministry of Environment and Forests, related to sustainable forest management and the environment, among others the National Working Group for forest certification. Participation in and hosting of CIFOR test on criteria and indicators. A detailed land-use and management plan will be based on the results of ecological and socio-economic research results.	Training of local personnel and students (PhD, MSc) through courses, workshops and on-the-job training. Many graduates are now working in the Cameroon Government (Forestry, Environment). The DGIS-sponsored initiative to set up a logging training project in Cameroon draws heavily on the Tropenbos-Cameroon research into improved logging techniques.	The labourers employed by the Programme originate mainly from the research site. This way of recruiting local people has two main interests: (i) to increase the income of local people; (ii) opportunity to exchange knowledge and experience between the researchers and local people. Identification social factors to be considered in forest management. Local peoples perspectives is taken into account in detailed land-use planning and management.
Tropenbos-Colombia	New insights and knowledge on ecology and functioning of rain forest; development of new methodologies. Themes include biological (mega) diversity, forest succession, nutrient- and water cycling, plant-animal interactions and indigenous use, management of natural resources and NTFP potential by mapping on landscape level.	Influence in planning and management of commercial fisheries; support to indigenous communities for the elaboration of natural resources management plans; through participation in seminars and workshops influence in both local, regional and national natural resources and land- use planning.	Training has been a fundamental aspect: so far 41 Colombian undergraduates trained, 4 MSc. and 9 PhD. A great part of these students occupy by now positions in Colombian institutions and universities. 4 PhD students are financed by Colombian Colciencias.	Recognition and enforcement of traditional knowledge on forest management by indigenous peoples; support of education programmes of the indigenous communities; support and assistance to the local communities for the formulation of environmental management plans for their territories.
Tropenbos-Cote d'Ivoire	Insight into the possibilities to involve local populations in the management of protected areas. Synthesis of all previous scientific publications on Taï National Park and its surroundings, including recommendations for the management of the park and the land-use.	(i) contribution to Management Plan of Taï National Park; (ii) participation in Scientific Committee of Taï National Park; (iii) technical adviser to the Ministry of Research for all scientific activities in and around Taï National Park.	One local PhD; two students being trained in fauna research.	(i) agricultural demonstration areas being established in periphery of Tai NP; (ii) as a partner to the PACPNT Tropenbos-CI has contributed to a better well-being of the surrounding populations (setting up of fish ponds, supervising farmers in agriculture, promoting ecotourism).

Programme / Institute	Achievements			
	New insights, information, methodology	Effects on policy and management	Impact on capacity building and training	Societal results
Tropenbos-Guyana	Development of: (i) programme to analyse vegetation indices; (ii) a water balance model of a forest environment; (iii) a programme to identify plant species by families; (iv) a Low Impact Harvesting system adapted to the forest composition and structure in Guyana; (v) a National Forest Inventory Database; (vi) techniques to use forest inventory data to assist a National Protected Areas System in Guyana; (vii) books and software on lesser known and important timber species; (viii) integration studies leading with clear recommendations for forest management.	Contribution/inputs to new Forest Policy in Guyana and the national Development Strategy of Guyana of the Ministry of Finance. The results of the programme formed the main scientific input in the 'Code of Practice for Forest Management' in Guyana. Technical input in the project 'Natural Resources Management in Guyana', funded by GTZ and set up to design a Land-Use Plan and Land-Use Policy for Guyana.	Training of local personnel and students (PhD, MSc) through courses, workshops and on-the-job training	Training as mentioned before will in general lead to better job prospects of the people involved and disseminates forest related knowledge among the population.
Tropenbos-Indonesia	Scientific findings lead to new reforestation and forest management techniques for Meranti and other Indonesian hardwood species, an improved forest inventory and monitoring technique, new approaches to wildlife conservation, eg orangutans. These findings have been published in theses as well as national field manuals.	Formulation of eight new Ministerial Decrees and many national manuals and other contributions to national policy and forest management, among others in the fields of sustainable forest management, ecolabelling, information management. Some 300 million new Merantis planted, some 300 orangutans rescued, several new nature reserves established. Much Indonesian funding attracted (80% of the project).	Establishment of a state of the art research and training centre, with herbarium, laboratory, research plots and nurseries in East Kalimantan, where some 1500 persons were trained over the last six years and educated in various forestry disciplines, ranging from PhD (13), MSc (15) students to nursery and field inventory staff. Many of them now holding influential positions.	Establishment of farmer groups of ex shifting cultivators and sugar palm farmers. Alternatives for slash and burn agriculture developed with improved welfare for local communities. National use of sugar palms for local people support. Better use of NTFP in natural and planted forest. Understanding of the interaction between concessions and local farmers.
UU	New insights into: (i) conservation: vegetation structure; plant species diversity of the Guianas; ecologically sustainable exploitation of NTFP; population ecology of orangutans and plant animal relations; (ii) sustainable exploitation of forest resources: importance of NTFP in local subsistence and economy; production structure of the forest products; adaptation and growth patterns of tree species; (iii) forest restoration: growth requirements of economically important species, especially their light requirement.	Application of developed management techniques: (i) cutting lianas, to increase productivity of Amazonian nuts; (ii) enrichment planting on abandoned agricultural fields.	Thirteen PhD students from southern countries from 1992 - 1997; 20 undergraduate students each year (incl. local MSc); short courses in forestry and biology faculties; extension to forest based communities (Bolivia, Costa Rica) and forest industry.	Increased production of forest products (honey, nuts)

Programme / Institute	Achievements			
	New insights, information, methodology	Effects on policy and management	Impact on capacity building and training	Societal results
UvA/ECOANDES	New scientific insights and knowledge on tropical Andean ecosystems, with emphasis on biodiversity conservation, forest vegetation ecology, palaeoecology and palynology.	Input to development and implementation of biodiversity conservation policies and land-use planning including forest management strategies.	Training/education programmes (PhD and MSc) for Latin American students principally through courses and thesis development. Former students are presently occupying important governmental/academic positions in their home countries.	Development of forest restoration strategies for recovery of degraded montane rain forest ecosystems. Contribution to the development of ecologically sound land-use plans for fragile forested and deforested watershed areas. Practical advice to governmental/non-governmental organisations with respect to protected area planning.
WAU	New insights into: (i) ecological functioning of TRF; (ii) role of forest for local communities and nature of indigenous management; (iii) use of lesser known timber species and non-timber species; (iv) importance of social negotiation in defining sustainable community forest management; (v) identification and manuals of plant species from Benin.	Inputs to policy development on certification and sustainable forest management, also emphasizing social aspects and indigenous forest use. Contribution to Dutch Government policy documents on tropical rain forests, and (inter)national fora (DDB, IDPAD). Scientific cooperation with experimental forestry development project	(i) training/education programmes (PhD and MSc) for people from tropical countries; (ii) institutional strengthening of local universities in Indonesia, Nicaragua and Tanzania, especially in respect to carrying out field research and formulation of new educational programme in social forestry.	Development of an innovative management plan for managing teak forest plantations in Indonesia with involvement of local people. Development of forest management plans by two forest management companies in Brazil, who were amongst the first recipients of an FSC certificate for sustainable forest management.

BCRS

Goal

The NRSP-2 aims at firmly securing the remote sensing techniques among operational users within government and industry in the Netherlands. It also seeks to develop and strengthen applications in development cooperation.

Research themes

1. Meteorology and oceanography;
6. Tidal - and inland waters;
7. Land use management, urban change, agriculture, forestry and nature conservation;
8. Climate and environment.

Disciplines

Natural - and technical sciences

Sub-programme (relevant to tropical rain forests)

Working group remote sensing research on forest (ROBO)

Objective

Develop and establish systematic observation and monitoring of forest, using remote sensing, as a supportive instrument for sustainable forest management

Location/site

Colombia, Guyana, Indonesia

Participating institutions

IBN-DLO, ITC, NLR, WAU

Linkages with other programmes

Tropenbos, DLO-research programme

Funding

Ministries of EZ, OCW, DGIS, LNV, VROM, Defence, VWS and BCRS.

ANNEX 2 RESEARCH PROGRAMMES INCLUDED IN THIS STUDY

Tropenbos Foundation Research Programme (1988 - 1999)

Goal

- To contribute effectively to the conservation and wise use of tropical rain forests, through generating relevant knowledge, deepening insights and developing and testing methods for forest policy and management;
- To involve local research institutions and to strengthen research capacity in tropical rain forest countries.

Research themes

1. Sound land-use planning;
2. Protected area management for biodiversity conservation;
3. Sustainable forest management;
4. Restoration and use of degraded forests.

Disciplines

Natural - and social sciences

Location/sites

Cameroon, Colombia, Côte d'Ivoire, Gabon, Guyana, Indonesia,

Participating institutions

CML, IBN-DLO, ITC, RUG, RUL, RUL-rhhb, SC-DLO, UvA, UU, WAU and partner institutions in host countries

Linkages with other programmes

NRSP-2, CIFOR, NWO-biod

Funding

DGIS, LNV, OCW (by NWO), VROM and NUFFIC. The remainder is covered by the executing agencies and the counterpart organizations, and the programme is also supported by international organizations (i.e. EU, ITTO) and the private sector.

DLO institutes: North-South Programme

Goal

Strategic and applied research to support the development of an (inter)national policy on agriculture, nature and environment, and to increase knowledge on sustainable agricultural production and sustainable management of the natural resources soil, water and forests and biodiversity. The aim is to find a balance between ecology and economy, with sustainable land use as a main issue. Research is aimed both at poverty alleviation and economic development, and dissemination and sharing of knowledge with partners and clients in Africa, Asia and Latin America is a high priority.

Research themes within the North-South Programme

1. Rural development and food security;
2. Plant and animal health;
3. Soils, water and nutrients;
4. Forests, nature and wetlands
5. Biodiversity;
6. Agro-production chains;
7. Peri-urban land use;
8. Guidelines, regulations, standards and certification.

Disciplines

Natural and social sciences

Location/site

DLO institutions. Most relevant for TRF research: IBN-DLO, SC-DLO.

Participation in other programmes

The Tropenbos programme, WWF conservation programme, BCRS, LBA.

Funding

LNV, external funding from EU, Tropenbos, ITTO

Centre of Environmental Science, RUL: Programme Environment & Development

General information

The major research programme in tropical rain forests is the CVPED, the Cagayan Valley Programme on Environment and Development, a cooperation project between Leiden University (Centre of Environmental Science) and Isabela State University (the Philippines) established in 1989. The aim of this cooperation project is 'practical' science and education in the field of environment and development. CVPED became the initiator of the present DGIS funded Northern Sierra Madre Natural Park Project implemented by PLAN International and a large project funded by USAid on grassland rehabilitation and reforestation.

Goal

Execute research in the field of environmental problems (analysis and/or explanation) and to contribute to solutions of these problems.

Research themes

1. Depletion dynamics;
2. Local resource management: (i) transitions in agricultural land; (ii) co-management of nature.

Disciplines

Natural - and social sciences

Location/site

The Philippines, also activities in Indonesia, Ecuador and Cameroon

Linkages with / participation in other programmes

NRP-II, Tropenbos

Funding

RUL, and main external donors: DGIS, IUCN, NRP-II, NUFFIC, NWO/WOTRO

NWO Priority Programme: Biodiversity in disturbed ecosystems (1994 - 2004)

Goal

The fundamental and strategic scientific aims of this programme are to provide mankind as a species with the proper tools to conserve biodiversity through:

- The generation of fundamental and generalized knowledge of species composition and of the extent, the structure and the dynamics of genetic variation;
- The integration of this with knowledge of complex interactions between species in an ecosystem;
- The dissemination of the acquired knowledge and expertise in order to support environmental policy.

Research themes

1. Comparative studies of the species composition and structure of pioneer communities and disturbed habitats;
2. Systematic and biogeographic studies of selected taxa that are characteristic for pioneer communities and disturbed habitats;
3. Relations between the number of genetic variations, population size and extinction of probability population fragmentation and management;
4. Relation between community biodiversity and ecosystem stability.

Disciplines

Biology: biosystematics, taxonomy

Location/sites

Terrestrial (lowland) ecosystems. South-East Asia, Amazon region, Cameroon, Costa Rica, Indonesia.

Participating institutions

UvA, NNM, RUL-rhhb, RUG, WAU, CTO-NIOO

Linkages with other programmes

Tropenbos

Funding

NWO and participating institutions

National Museum of Natural History, Leiden

Two research programmes relevant to tropical rain forest:

1 Fauna Malesiana Terrestria

Goal

Fauna Malesiana is an inventory of recent and fossil zoodiversity of Southeast Asia. Current objectives: explore key faunas, and analyse the diversity generators on various levels of spatiotemporal integration: ecological, geographical, evolutionary. Another objective is the production of Fauna Malesiana handbooks.

Location/site

South-East Asia, concentrating on Indonesia

2 Eco-evolutionary analysis of biodiversity

Goal

Research on short-term changes in biodiversity of complex ecosystems in relation to unique evolutionary values such as species diversity and endemism.

Location/site

Brazil, Cameroon, Tanzania, Indonesia, worldwide

Research themes

Biogeography, phylogenetic relationships, biodiversity

Disciplines

Biology (zoological taxonomy, systematics)

Participation in other programmes

NWO-biod

Funding

Ministry of OCW

RUG:

A law-oriented and socio-economic approach to understand tropical deforestation and enhance protection of tropical rain forests

Goal

1. Identification of capacities and limitations of law and legal institutions as policy instruments directed at protection of tropical forests;
2. Integration of socio-economic viewpoint in understanding global tropical deforestation.

Disciplines

Law, (socio-)economics

Location/site

Ecuador, worldwide

Participating institutions

Tropenbos, INEFAN, CLD, GTZ, PROFORS, PPF

Funding

RUG, Tropenbos

PROSEA: Plant Resources in South-East Asia (1985 -2000)

General information

PROSEA is an international, interdisciplinary programme, focussed on South-East Asia. It is a research programme with an ecological focus to promote plant resources, reviewing existing knowledge and making it available for education and extension, and for commercial production, processing and marketing. It is committed to the conservation of biodiversity in natural, agricultural and forest ecosystems by the provision of information on their biology and economic importance.

Goal

Goal of PROSEA is to produce documentation and information on plant resources of South-East Asia and to make this available for education and extension; to make operational a computerized databank; to publish an illustrated multi-volume handbook; to promote dissemination of the information gathered. In the longer term the information should reach the public at large in adapted forms, making it aware of the opportunities but also the dangers of exploiting the surrounding biodiversity.

Research themes

Sustainable use of plant resources; information and extension.

Disciplines

Agronomy, biology, forestry

Location/site

South-East Asia: Indonesia, Malaysia, Papua New Guinea, the Philippines, Thailand and Vietnam

Participating institutions

In the Netherlands: PROSEA Foundation, Herbarium RUL, Depts. of Plant Taxonomy, Agronomy WAU.

In TRF countries: Indonesian Institute of Sciences (LIPI, Indonesia), Forest Research Institute Malaysia (FRIM, Malaysia) Philippine Council for Agriculture, Forestry, and Natural Resources research and Development (PCARRD, Philippines), Institute of Ecology and Biological Resources (IEBR, Vietnam), Papua New Guinea University of Technology (UNITECH, Papua New Guinea), Thailand Institute of Scientific and Technological Research (TISTR, Thailand).

Funding

DGIS, OCW, LNV EC, ITTO, WAU, Tropenbos, IDRC, FINNIDA, Sarana Wanajaya Foundation Indonesia

TNO, Centre for Timber Research

Goal

Development of ecologically sound and energy-efficient solutions to manufacturing problems to promote the environmental benefits associated with timber products.

Research themes

1. Making better use of wood from diverse tropical forests (developing application for using secondary species or species where the properties are less well known;
2. Substituting tropical timber products with temperate timber products and home grown wood;
2. Comparison and quantification of the environmental effect of wood utilisation from different sources (tropical/temperate).

Disciplines

Wood technology (utilization, processing), timber engineering, product development

Location/site

Temperate and tropical

Participating institutions

Timber Information Centre, NbvT, VVNH, KIWA and on European level a wide range of wood and environmental research organisations and universities.

Linkages with other programmes

The Netherlands: MINT (Novem), DROP (VWS, VROM), EWAB (Novem).

The EU: FAIR, SMT, BRITE-EURAM, Copernicus

Funding

Private sector, branch organisations, EZ, VROM, VWS, Monumentenzorg, EU

RUL, Rijksherbarium/Hortus Botanicus:
Tropical Phanerogams - Flora Malesiana Research Group (1947-ongoing)

Goal

Flora Malesiana aims at conducting a comprehensive and critical inventory of the higher plant diversity of the Malaysian region and at development of species identification keys. Plant biogeography and phylogenetic analysis of Malaysian plants are also focal points in the research. From 1993 onwards this group coordinates an extensive European network, funded by the EU, to study the plant diversity of the Indo-Pacific region.

Disciplines

Biology (plant taxonomy, biosystematics)

Locations/sites

South-East Asia: Indonesia, Malaysia, the Philippines, Papua New Guinea, Singapore, Brunei

Participating Institutions

In Flora Malesiana: 28 sister institutions, in Europe, USA and South-East Asia

Funding

RUL, external: NWO/WOTRO, Tropenbos

UvA:**ECOANDES Research Programme (1976-1998)****General information**

The ECOANDES Research Programme was created in 1976 and concerns a joint research effort by the University of Amsterdam (Hugo de Vries Laboratory), Utrecht University (Plant Systematics Group), the Colombian Ministry of the Environment (formerly INDERENA), and the Colombian National University (Natural Sciences Institute), among others. Major external funding has been received from NWO (WOTRO). During the 1980s linked research efforts were established in other Latin American countries (Mexico, Guatemala, Costa Rica, Ecuador).

Goal

To generate knowledge on tropical Andean ecosystems in South America.

Research themes

1. Changes in forest, climate and environment during the last 130,000 years;
2. Implication of climate and environmental change on biogeography, biodiversity and community ecology of tropical forest and non-forest areas;
3. Human impacts on natural ecosystems.

Disciplines

Biology, conservation biology, forest ecology, paleoecology, palynology

Location/site

Mainly: Colombian Andes. Additional: Central Mexico, Montane Costa Rica, Ecuadorean Andes.

Participation in other programmes

Tropenbos-Colombia programme, NWO Priority Programme Biodiversity of Disturbed Ecosystems

Funding

UvA, and main external donors: NWO/WOTRO, EU, Tropenbos

UU, PROMAB:

Sustainable use of forest products in the rain forest of Northern Bolivia (1992 - 1999)

Goal

The two main objectives of the programme are:

- (i) To develop and implement sustainable and multiple-use forest exploitation systems through:
 - provision of a forest-ecological and socioeconomic basis for sustainable and multiple-use forest management systems including the protection of its biological diversity;
 - development of methods for analysing and evaluating the sustainability of different forest exploitation systems.
- (ii) To strengthen the research, extension and institutional capacity of the participating organisations in the field of sustainable forest exploitation.

Research themes

The research programme encompasses strategic and applied research directed towards the design of management scenarios integrating conservation and development through sustainable use of forest resources. The scenarios include non-timber and timber products. Two main themes are:

1. Ecological basis for forest management, having a species- and ecosystem-oriented component.
2. Socioeconomic basis of forest management.

Disciplines

Natural - and social sciences

Location/site

Northern Bolivia

Participating institutions

Utrecht University, Universidad Tecnica del Beni (UTB), Instituto para Hombre Agricultura y Ecologica (IPHAE), CIFOR

Linkages with / participation in other programmes

CIFOR - Non Timber Forest Products programme

Funding

DGIS, CIFOR and Utrecht University.

2. Community forestry development and rural transformation in tropical countries

Goal

To develop scientific information on the role of forests for local communities and on the nature and development scope of community forestry under different socio-economic and cultural conditions, as well as on the significance of social forestry for stimulating community forest management.

Research themes

Relations between human societies and forest environment, including indigenous methods of forest utilization and management; forest policies and approaches for planning forestry development interventions aimed at transferring (part of the) management responsibility to rural communities.

Disciplines

Sociology, economics, forestry

Location/site

Costa Rica, Mexico, Tanzania

Linkages with / participation in other programmes

CERES, Tropenbos, CIFOR, ICRAF, FAO (Forests Trees & People programme), ODI, IUFRO

Funding

WAU, NWO/WOTRO, DGIS, ICRAF, FAO

WAU:

Research programme in Tropical Forestry of the Forestry Department

General information

Already since long the WAU forestry group has been actively engaged in tropical (rain)forestry research. In the period 1965 - 1983, this research was focussed on Suriname using WAU funding. In 1985 a new WAU-funded research programme started in Côte d'Ivoire research, this programme was subsequently incorporated in the DGIS-cosponsored Tropenbos programme. In 1991 the focus of the research programme in West Africa shifted to Cameroon (Tropenbos programme). Since the early 1970s additional research was carried out in Indonesia within the framework of the DGIS-funded NUFFIC/PUO university cooperation projects, the most recent of these projects concerned the FONC (Forestry Nature Conservation project) carried out in cooperation with the Forestry Faculty Gadjah Mada University, Yogyakarta in the period 1979-1992. Additional research on tropical forestry financed directly or indirectly by DGIS included a study in 1995 of the formerly established Suriname trial plots, and scientific backstopping of the SNV forestry programmes in the Sahel and the forestry programme of IRDP Ratnapura, Sri Lanka. The DGIS-financed research efforts are incorporated in a general research programme which also includes projects financed by WAU (e.g. Costa Rica, French Guiana, Burkina Faso, Kenya), WOTRO (French Guiana) and EU (Sabah, ECOSYN); this programme also included/s collaborative research projects or studies with ICRAF (1982-1984), FAO, ORSTOM and CNRS (France) and ITTO.

The main current research themes are:

1. Ecology, silvicultural systems and management of tropical rain forest

Goal

To contribute towards obtaining fundamental knowledge about the ecological processes influencing natural regeneration, tree growth and forest succession, and to develop new knowledge systems for silvicultural and management planning in forests.

Research themes

Effects of light as an ecological fact; commercially interesting tree species; improvement of silvicultural and extraction systems, effects of light and animals as ecological factors on tree growth and forest development.

Disciplines

Forestry, biology (forest ecology)

Location/site

Concentrated in Cameroon and French Guiana, additional work in Malaysia, Suriname, Côte d'Ivoire.

Linkages with / participation in other programmes

CERES, CNRS, Tropenbos

Funding

WAU, NWO/WOTRO, EU, ITTO, Tropenbos