

No. 9 May 1994

# Newsletter

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- The Weilburg Declaration
- SILVOLAB - An Interest Group for Forestry Research in French Guyana



European Tropical Forest Research Network



### **The European Tropical Forest Research Network (ETFRN)**

is an initiative of the European Commission, and was established in October 1991 in order to provide information and services to support research on tropical humid and dry forests. This includes all research areas related to the tropical forest environment.

The aim of ETFRN is to increase the cooperation and concertation of research institutions, governments and industry of European and tropical countries through well-targeted information management.

ETFRN organises and participates in workshops and seminars. It supports its participants in exploiting existing funding sources and in establishing research cooperations. It will use and support the development of a Global Tropical Forestry Research Information System.

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#### **Editors:**

The ETFRN-Newsletter is a quarterly publication of the European Tropical Forest Research Network; free copies can be obtained from:

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## Organisations-Institutions Programmes

### *The Cooperative Research Centre for Tropical Rainforest Ecology and Management*

The Cooperative Research Centre for Tropical Rainforest Ecology and Management (CRC-TREM) in Australia was established under the Commonwealth Government's CRC Program involving various research institutions and organizations in Australia as an unincorporated joint venture. Its principal objectives are to elucidate biodiversity and enhance the world heritage values of Australia's wet tropics, to study dynamic responses of rainforest ecosystems to disturbances and develop systems for sound and comprehensive management of rainforest heritage, to conduct research necessary for rehabilitating degraded tropical forest land and for ensuring ecological sustainability in commercial and recreational use of rainforest resources, to establish computer-based information exchange facility for researchers and managers of tropical rainforests, to train students in tropical forest ecology for future research and management and to communicate with rainforest resource managers and local communities. The Centre office will be located in the Cairns campus of James Cook University.

The activities of the CRC are encompassed in six programs. Programs 1 - 3 are the major investigative programs of the CRC, whose combined objectives form the research goals of the Centre. They are organised in three networked streams. Firstly, the study will enhance the understanding of biodiversity and provide necessary database for its conservation in the tropical rainforests of Australia. Secondly, the study will elucidate dynamic processes of rainforest resources identified above, in order to develop plans for their management and sustainable use. Thirdly, the study will focus on the economics of high profile areas of tourism and plantation forestry that are based on rainforest resources.

#### Program 1.- BIODIVERSITY

essentially asks the question "What's there and why?". It aims to document, identify patterns in, and predict, the distribution and structure of populations and communities in Australian tropical rainforests. It forms the underlying substructure of information which the process studies of Program 2 will attempt to explain and model. It includes evaluation of diversity at both the population (genetic) and community levels, and will develop methodological tools which will be of use in biodiversity studies elsewhere. Its most immediate application is to the selective inventory and spatially specific information needs of management agencies and those undertaking environmental impact assessments.

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### Program 2 - RESOURCE DYNAMICS

investigates the processes which may drive change in the patterns identified in Program 1, and uses that information to manage the resources. It looks at the effects of disturbance and fragmentation on forest communities, at the processes of successional change in the rainforest context, at the dynamics of rainforest boundaries including the effects of fire and dispersion with sclerophyll elements and at key biological interactions. It also targets processes which may affect populations of particular species, concentrating on species important for their conservation status or for their impact on the rainforest ecosystem. It includes a process study to find ways to induce or accelerate desirable changes for the rehabilitation and reforestation of degraded land and to develop rainforest plantation.

### Program 3 - SOCIO-ECONOMIC STUDIES

look at the human use and economic values of rainforests and how they may be enhanced and sustained, concentrating particularly on rainforest tourism and on analysis of the economic viability and potential of plantation forestry. Research draws on findings of Program 1 and 2 and is directed towards community and economic ends.

### Program 4 - Integrated DATA EXCHANGE PROGRAM

is a computer-based support facility for sharing a spatially-referenced information system generated and used by Program 1-3, and serves as a communication network among all participants.

Program 5 - EDUCATION AND TRAINING fulfils the educational, and research and vocational training objectives of the CRC.

### Program 6 - TECHNOLOGY TRANSFER AND ADMINISTRATION

aims to ensure that the CRC is cohesively and effectively managed, and that its results are rapidly made available to groups which may make use of them, whether they be environmental management agencies, tourism groups, or people involved in production forestry, community projects or conservation. It also aims to develop special projects in response to research opportunities revealed by new developments in rainforest ecology and management.

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***The Foundation for Primary Forest  
Protection (FUNBOSPRI)***

FUNBOSPRI is a non-profit, non-governmental organisation and non-partisan foundation in Costa Rica devoted to the protection of natural resources, of primary forest, of the biodiversity and environmental education. It was created in 1992 by a group of people interested in the above mentioned items. In this moment more than a hundred people are directly involved in

**Table 1: National institutions and departments in Costa Rica related to FUNBOSPRI**

Academic:

University of Costa Rica (Western Regional Division), Costa Rica Institute of Technology (Department of Biology, Department of Computer Science), Open State University (Community extension programme) and National University of Costa Rica.

Non academic institutions:

County of Grecia, Youth Challenge International, Association of Volunteers in Environmental Research and Development (VIDA), CEBIOS SA (Osa Center for Biological Studies), National Chamber of Tourism Micro Enterprises (CANAMET) and The Executive Center for Economic and Health Projects (ACEPESA).

Government institutions:

The Ministry of Public Education (MEP) and the Costa Rica Tourist Board (ICT), the Ministry of Natural Resources, Energy and Mines (MIRENEM), the Ministry of Agriculture (MAG), the Ministry of Health and the Ministry of Government and Police.

Industry:

Recyclable and reusable industries like Laser and Toners Anderson, Scott Paper, Vicesa and Cerveceria Costa Rica.

FUNBOSPRI's activities. Its activities are organised in collaboration with Community Associations for Development and other community groups. One of the features that distinguish FUNBOSPRI from other foundations with similar objectives is the direct incorporation of members of the community into FUNBOSPRI's activities. With these groups it was possible to organise some important activities on environmental education, leaders capability, rivers cleanness, inspections and control, reports on ecological problems and organising the community for defending the environment.

FUNBOSPRI will increase this practice of incorporating community groups and promoting the formation of new ones specially in those areas in Costa Rica, like Osa Peninsula, in which primary forest is the main natural riches.

Several national institutions and departments are related to FUNBOSPRI (table1). All these institutions are involved, in different proportions, in the implementation of the activities described below. These institutions participate by mean of representatives in the decision making process and in the activities of FUNBOSPRI.



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### Main activities:

#### Research

FUNBOSPRI is interested in doing research, both theoretical and applied, in the following topics: re-introduction and introduction of species, biodiversity, environmental studies, methodologies for teaching environmental topics and studies of sustainable development.

#### Education

As far as education is concerned, FUNBOSPRI promotes activities such as, the development of didactic materials (texts, videos, etc.) for formal and non formal education, the implementation of leaders and guides in the community and the adquisition of areas of conservation for education purposes.

#### Projection to the Community

One of FUNBOSPRI main activities concerns to advice communities about how to solve their environmental problems such as waste disposal, water pollution, deforestation and how to plan activities oriented to reduce negative environmental impact of productive activities, and to look for alternatives.

### Ongoing Projects:

Environmental Education. This project is directed to people from primary schools and high schools (as support to the education programs of the Ministry of Education) and groups from the community. These activities have two parts: 1. Talks and seminars on conservation issues 2. Visits to different areas of conservation, including

the Corcovado's National Park, Santa Rosa and Los Chorros. Very often schools ask for this kind of activities.

Advice and inspection in different activities of the County of Grecia. The County of Grecia monthly requires FUNBOSPRI services in this area. Since 1992 FUNBOSPRI integrates the inspection service of the County. In these activities are also involved the Ministry of Health and the Ministry of Government and Police.

Talks on environmental legislation. This project is directed to people from primary schools and high schools (as support to the education programs of the Ministry of Education) and groups from the community.

International Conference on Ecology and Environment. FUNBOSPRI is organising this Conference for June 20 - 24th 1994, in Peninsula de Osa, Drake Bay. Among the objectives of the conference are, to contact individuals and international institutions related to the environment with the aim of planning joint activities, of sharing experiences and to discuss environmental strategies, planning and related topics.

### Forthcoming Projects:

#### 1. Burning Sugarcane Project.

One of the main productive activities in some regions of Costa Rica is sugarcane. In order to reduce expenses, the farm owners, burn great extensions of land each year. The effects on human health and environment are not yet quantificated. It is the interest of

FUNBOSPRI to quantify these effects, to educate people about these and to join farmers and the governmental institutions involved to look for alternatives.

### 2. Grecia Waste Disposal project.

The problem of waste was considered a national emergency by decree in 1991. According to the National Plan of Waste Disposals, Costa Rica produces about 3.500.000 tons of waste per year. The big problem is not this production, but the lack of an adequate waste disposal. The need of this plan becomes urgent day by day. To contribute to the solution of this problem the implementation of a plan for waste disposals in Grecia, a little city of about 50.000 inhabitants is planned. It is hoped to get insights from the results and to apply them to other places in the country.

### 3. Center for Environmental Information.

There is a great deal of information about environmental issues in Costa Rica. The problem is that this information is not centralized, which leads to wasting time and effort when trying to find it. The center proposed will consist of a library, maps, and information about national and international institutions related to environment. The center will be completed by additional Geographic Information Systems, databases and connections with international databases and networks.

### 4. Training Seminars on environment and related issues for the inhabitants of Costa Rica.

Costa Rican traditional culture is very negative, excluding indian native cultures. Education is one of the key mechanisms to transform this situation. FUNBOSPRI is interested in continuing education within a participative methodology. To achieve appropriate tools for the community, planning and structuring activities must be provided to create awareness of the problems and to propose solutions. It is also of interest to promote the formation and education of community groups for those productive activities that will reduce the present negative environmental impact.

### 5. Museum of Ecology, in San Ramón de Alajuela.

Eventhough ecology is a term that is very common in everyday life, Costa Rican have little education on the principles and theory of ecology, and therefore to understand the need to protect environment and natural resources. FUNBOSPRI is interested to create a museum of ecology in order to illustrate the principles of this discipline and to contribute to awareness about these important issues.

### 6. Environmental Education Laboratory

That laboratories are areas that will be used as tools for teaching and learning.

This conveys, at least, the following aspects: conditioning for breeding animals in captivity, signalisation, path opening, tagging and descriptions of trees, descriptions of the natural history of the zone, maps, information places, exhibitions of natural resources and camping zones.

### 7. Re-introduction of animal species in Los Chorros.

Some native species are in process of becoming extinct. FUNBOSPRI is specially interested in rescuing these species by re-introducing them in some conditioned places appropriate for them. Los Chorros is a region of primary forest recently bought by the County of Grecia and other national institutions.

FUNBOSPRI is interested in the introduction of *congo* in los Chorros. *Congo* was very common in this area, but disappeared due to the accelerated process of deforestation that has undergone the country.

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### **SILVOLAB - An Interest Group for Forestry Research in French Guyana**

SILVOLAB Guyana is an interest group founded at the end of 1992 by CIRAD, ENGREF, INRA, ONF, and ORSTOM to carry out research work on the topic "Study of Physical and Biological Bases for the Functioning and Cultivation of Forestry Ecosystems of the Humid Tropics". All of these five French research institutions operate a permanent branch office in Guyana (Kourou and Cayenne). Institutions already performing important forestry research in Guyana - such as the CNRS, the National Museum for Natural History, and the University of the Antilles-Guyana - are planning to increase their activities in this area and to join the interest group in the near future.

### **The fields of study**

The field work is concentrated in several research and experiment stations. The Nouragues Station is situated in a dense forest 100 km south of Cayenne; here studies are conducted on an intact forest that has not been exploited and not been exposed to any human influence. The site of BAFOG gives reference to the development of forests that had been exploited some decades ago; it consists of four sites where the vegetative evolution following an intensive exploitation of the forest has been under study for more than 40 years. The site of the Saint-Elie Track comprises a number of parcels of land each situated on the slope of a basin: There one can study



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the effects of diverse changes in a forestry ecosystem on the condition of water and soil (erosion, mineral and organic elements); on top of these basin slopes small connecting areas of natural forest can be found. The Paracou Station comprises several parcels of land designated towards the study of the mechanisms working in a natural forest and its reaction to forestal interventions (cleanings, and commercial lumbering). Finally, the experimental forests of Risquetout and Organabo represent two forests in which large scale experiments with forestal systems are performed.

### **The reasons for SILVOLAB: Structuring a research network, emphasizing the possibilities of Guyana**

It is intended to develop the French research facilities in Guyana, to improve the management organization of joint research stations, to better coordinate researchers stationed in Guyana and their contacts with scientists from their home countries performing missions in Guyana, to make the scientific approaches more easily comprehensible for regional, national, and international authorities by establishing a steering instrument for the various research programmes and for recruitment policies. Furthermore, compared to the institutional and political conditions under which research cooperations with numerous tropical countries are conducted, Guyana emerges more and more clearly as a privileged location for conducting long-term scientific work in the humid tropics, deriving benefit from the collaboration of an administration in charge of forest management with an institution for academic forestry education. Provided that the international partners are

presented with a clear picture of this, the research on ecosystems of the humid tropical forests in Guyana should be able to gain support in the form of contributions from European laboratories and to get involved in a collaboration network with research institutions of the Amazon region.

### **The objectives of the interest group and its organization**

SILVOLAB has been created to coordinate the research programmes of its members as well as for managing funds, research stations and infrastructure. The research topic is the forest in its entirety of components at sites of different quality (mountain ranges, forestal exploitations, parcels of land) and with varying population levels (population, species). The research aims at gaining knowledge about the mechanisms within the ecosystem to provide a reliable basis for decisions concerning a sustainable management, particularly regarding timber production.

SILVOLAB shall facilitate the understanding of the Guyanan research institutions for local authorities, the supervisors, the donors, towards whom it acts as the sole representative of its members concerning common scientific and administrative questions. It shall develop regional and international cooperations by encouraging Europeans in particular to work in Guyana and by cooperating with research institutions of the Amazon region.

The interest group is headed by a council of Guyanan representatives of its member organizations; they meet once per month and constitute the operational basis. A scientific committee decides on the long-term orientation and evaluates the con-

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ducted work; it is formed by scientists representing the member organizations and three external personalities chosen for their competence.

In order to further promote local scientific activities, groups of scientists, divided into multidisciplinary and interinstitutional teams, have been established to work on the following subjects: Population dynamics, mechanisms and biodiversity, mechanisms and nutrition, forestry technology, agroforestry. It is desired to share a network with the laboratories of the home country, allowing the teams of the interest group to benefit from intellectual support or special knowledge and on the other hand allowing a better integration of work performed by these laboratories in Guyana into the scientific working field of SILVOLAB.

### **A well-advanced implementation**

Concerted recruitings, improved communication amongst researchers in Guyana, increased sharing of funds, the development of a joint scientific programme as well as a concerted policy concerning PhD scholarships: SILVOLAB is making rapid progress in its implementation. At present, the interest group consists of a scientific community of about 15 researchers situated in Guyana and an equal number of scientists in the home country who regularly come over to work in Guyana.

Funds donated by the Interministerial Fund for the Cooperation Caribbean-Guyana, destined for the establishment of a research network in this region, have allowed SILVOLAB to make itself known in the neighbouring countries and to lay the foundations for a cooperation with the Amazon partners in areas such as the ecophysiology

of forestry systems, forestry in natural forests, and application of remote sensing in the study of mangroves.

Through funds and equipment, the establishment of SILVOLAB has facilitated the completion of a project "Documentation Centre for Research on the Amazon Forestry System", financed by the European Union, the state, and the Guyanan region, which permitted the construction of additional offices, the development of a new herbarium, the establishment of a documentation centre, and the provision of significant data processing equipment.

Provided with a strong identity and new funds, SILVOLAB will be able to engage in a phase of development, allowing an opening towards European laboratories and the launching of new research projects in collaboration with the Amazon partners.

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### ***The Center for Tropical Forest Science (CTFS)***

The Center for Tropical Forest Science (CTFS) is an administrative unit of the Smithsonian Tropical Research Institute (STRI) in Panama. In 1933 a regional office (CTFS-Asia) opened at Nanyang Technological Institute in Singapore. CTFS was established by a group of concerned researchers dedicated to address the need for

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more information on tropical forests - for sustainable use of their resources, for effective management, for the conservation of their multitude of species. The following principles are to be realized in the program of the Center:

### An interdisciplinary approach.

The group members are researchers from an extraordinary diversity of disciplines who recognize the need to work together if the problem of tropical deforestation is to be solved. Any solution must incorporate biological, sociological, and economic concerns, or it is bound to fail. The first successful steps in the difficult task of bridging the different approaches of these various traditions of research are done.

### Regional and global comparability of results.

The methodologies employed at various cooperating research sites throughout the tropics should yield comparable results, whether in biology or in socio-economics. This comparability is aimed at permitting generalization, at first regionally and eventually globally.

### International partnerships.

The program of CTFS is "bottom-up", in the sense that it grows out of solid teamwork between individual scientists from both the developing and the developed world. The researchers are convinced that this is the only way that works in science. "Top-down" solutions, reflecting only the perspective of international agencies or of the developed world, have often been ineffective if not disastrous.

A major priority of the Center is research relevant for developing more effective sustainable management of tropical forests. On the biological side, the research approach has been demographic. In tropical forests, where most species occur at low densities, it is necessary to monitor very large areas to acquire large enough samples of individuals for demographic analysis.

The first attempt at a demographic study on the requisite scale was initiated by STRI in Panama. The value of this approach was soon recognized, and other such projects were initiated, in 1986 at the Pasoh Forest Reserve by the Forestry Research Institute, Malaysia (FRIM), and in 1987 at Mudumalai, India, by the Indian Institute of Science.

A major step was taken in 1989, when some 30 forest researchers, silviculturists, and social scientists from tropical Asia and the United States met in Bangkok to hammer out an agreed list of priorities for research towards more effective sustainable management of tropical forests in Asia. The group also selected a set of biologically and socioeconomically representative sites in tropical Asia at which interdisciplinary research should profitably be fostered.

In 1990, in order to strengthen what up to then had been an informal collaboration, the Center for Tropical Forest Science was established.

The CTFS links various tropical forest research sites, eg. Barro Colorado Island, Panama; Pasoh Forest Reserve and Lambir National Park, Malaysia; Mudumalai Game Reserve, India; Huai Kha Khaeng Wildlife Sanctuary, Thailand; Sinharaja National Park, Sri Lanka; Bukit Timah Forest Re-

serve, Singapore; and Luquillo Experimental Forest, Puerto Rico. A Grant from US-AID will help initiate research work at a Long-Term Research Site in the Philippines. Based on the example of the 1989 Bangkok meetings for Asia, the CTFS plans to hold various meetings in order to identify research priorities. In March 1994 STRI hosted an organizational meeting of potential Long-Term-Research Sites for the Neotropics in Panama. Plans for several additional sites in Asia, Latin America, and Africa are well advanced.

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### Research Cooperations

*Under this heading the ETFRN Newsletter offers its readers the possibility to write a short article for future issues of the Newsletter offering research cooperation opportunities.*

*Should you be interested in making your cooperation efforts known to the Newsletter readers, please feel free to send us your summaries.*

### *The Budongo Forest Project in Uganda*

In June 1991 the Institute of Biological Anthropology of the Oxford University received funding under the ODA's forestry Research Programme to initiate a study of the effects of selective logging on the structure and biodiversity of the Budongo forest, Uganda. The main focus on the forestry side was the long and well documented history of the forest and the silvi-cultural and logging operations there. Logging records go back to the 1930s, when the forest was exploited in a systematic way, compartment by compartment, following a felling cycle aimed at ensuring regeneration of the mahoganies and other valuable timber trees. The ecology of the forest was studied in the 1940s by W.J. Eggeling. This study has today become a classic text in forestry.

With such good background information the focus in the last 3 years laid on censusing biodiversity in areas logged at different times in the past, and documenting the effects of logging on the structure of the forest. The main findings to date have been ecological. In particular it could be demonstrated that primate densities for the three forest monkey species found in Budongo (*Cercopithecus mitis.*, *C. ascanius.* and *Colobus guereza*) are higher in logged areas than in never-logged areas.

In the case of chimpanzees and forest baboons there is no difference in density. The main change in the forest's structure, which has been discovered from an analysis of aerial photographs, has been a decrease in the amount of *Cynometra* Forest. This was primarily the result of poisoning the *Cynometra* trees, and an increase of Mixed Forest. The latter contains a large number of fruit tree species providing food for the primates, whereas the former does not.

### The local population

In 1991, the local population living around the forest started a study of the uses of minor forest products. Most of these people turned out to be recent immigrants. In 1992 a second study was started, this time on the crop-raiding of farmers' fields by forest animals, and farmers' food security. This study is ongoing at the present time. Further studies of the local population, its (very mixed) ethnic composition, its health status, rate of growth etc. will require separate funding. The Institute of Biological Anthropology is now looking for European partners who might be interested in this kind of work.

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### Hot-Arid Agroforestry in India

The hot arid zone covers about 12% of India's total area and is characterized by hostile environmental conditions such as low and erratic rainfall (100 - 300 mm/year), intense solar radiation and high wind velocity. During most parts of the year, the evaporation by far exceeds precipitation. Besides, the productivity potential of the land is also usually low because of a very coarse texture with low water holding capacity and poor nutrient status. Under such conditions crop production is highly risky and hence, animal based farming systems are pursued in this region. Moreover, growing agricultural crops under tree crops like *Prosopis cineraria* and *Zizyphus spp.*, is an age old traditional practise in this region. The Central Arid Zone Research Institute in Jodhpur/India is doing research for the improvement of traditional agroforestry systems and inclusion of new Multi Purpose Tree Species (MPTS).

Agroforestry systems have been developed on the basis of rainfall and soil type. In the areas where rainfall is below 200 mm/year, grasses like *Cenchrus ciliaris* and *Lasiurus sindicus* are used under trees like *Acacia tortilis* and *Zizyphus numularia*; where rainfall ranges from 200 to 300 mm, pearl-millet and pulse crops during rainy season are used with trees like *Prosopis cineraria* (best MPT for this area) and *Zizyphus mauritiana* (a fruit tree).

The peculiarities of agroforestry in this area are:

- Trees in this area improve micro environment for annual component by reducing wind speed and solar radiation and trapping more rain water. This shows a positive interaction between components.
- Agroforestry is being followed traditionally, although the systems' productivity is very low.
- Due to scarcity of water and nutrient, there are clearcut observations available for resource sharing between the components of the systems.

Now, research is going on in the Institute, considering the above aspects and trying to manage the fragile resources to achieve a higher productivity and sustainability.

The Division of Resource Management of the Central Arid Zone Research Institute is now looking for research partners for the cooperation in the field of resource sharing between annual and perennial components, micro-environmental changes, water conservation and root study to develop models of agroforestry for different rainfall and soil.

For further information, please contact:

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India

### *The Guyana Rainforest Sustainability Programme*

The Guyana Rainforest Sustainability Programme (GRSP) is part of the Guyana Government-Commonwealth Secretariat Iwokrama Rainforest Programme undertaking detailed biological diversity projects in Guyana. Having obtained substantial background data for the region the Programme is now interested in developing these research avenues, specifically in relation to the use of GIS and database systems for the management and conservation of forests. As well as the applications of such technology in ethnobotanical studies and intellectual property rights. Therefore GRSP is looking for cooperation partners in different fields of research. GRSP is especially interested in establishing links with other European research units for collaborative studies on ethno-botanical research, and in developing research projects outside of Guyana.

#### **GIS and Database System**

The central development of the Guyana Rainforest Sustainability Programme (GRSP) is the establishment of a Geographical Information System (GIS) and biological/ethnobotanical database system, which would then be used in all research activities of the GRSP. The GIS would be used to manage remote sensing imagery information, obtained from the European Space Agency.



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### International Agenda: Conferences

Date	Title	Contact
<b>May 94</b>		
15. - 20.	The Role of Networks, Geraldton, Australia	Dr. Denis Saunders, CSIRO Division of Wildlife and Ecology, LMB No. 4, PO Midland, Western Australia 6056; Tel.: +61-9-252 01 34, Fax: +61-9-252 01 11
16. - 20.	International Symposium on the Spatial Accuracy of Natural Resource Database: "Unlocking the Puzzle", Williamsburg/USA	Dr. James L. Smith, Dept. of Forestry, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061-0324, USA
23. - 27.	Global Change Conference, Woods Hole/USA	Global Change and Terrestrial Ecosystems Core Project Office, CSIRO, Division of Wildlife and Ecology, P.O. Box 84, Lyneham ACT 2602, Australia; Fax: +61-6-241 23 62
30. - 02.06.	International Symposium on Agroforestry, Berlin/Germany	Dr. H.-P. Ende, Institute of Forest Ecology, Center for Agricultural Landscape and Landuse Research (ZALF), 16225 Eberswalde, Germany; Tel: +49-33 34-543 14, Fax: +49-22 24-543 00
<b>June 94</b>		
06. - 09.	SIT '94 - Inventories for Ecosystem Management, Oregon/USA	G. Lynd, USDA Forest Service, FIE-RR, P.O. Box 96090, Washington, DC 20090-6090, USA; Fax: +1-202-205 10 87
07. - 10.	5th International Symposium on Society and Resource Management, Fort Collins/USA	Michael J. Manfredi, Human Dimensions in Natural Resources Unit, Colorado State University, Fort Collins, Colorado 80523, USA; Tel: +1-303-491-65 91, Fax: +1-303-491-22 55
20. - 24.	International Conference on Ecology and Environment, Drake Bay/Peninsula de Osa/Costa Rica	Celso Vargas, Dept. of Computer Science, Costa Rica Institute of Technology, P.O. Box 159, Cartago, Costa Rica; Fax: +506-51 53 48, E-mail: VARGASE@UCRVM2.UCR.AC.CR
20. - 24.	Mapping and Geographic Information Systems, Athens/Georgia/USA	ISPRC Commission IV, 173 Ave. de Lautrec, 1100 Castres, France; Tel: +33-63-72 31 00, Fax: +33-63-72 30 32

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| 27. - 02.      | FAO/Austria Seminar on Economics and Mangement of Forest Operations for Countries in Transition to Market Economies, Gmünden/Austria       | Rudolf Heinrich, Chief, Forest Harvesting & Transport Branch, Forest Products Division, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy; Tel: +39-6-52 25-47 27<br>Fax: +39-6-52 25-51 37 or -31 52 |
| 29. - 05.      | 5th International Congress for Computer Technology in Agriculture, Cambridge/UK  | Katherine Fort, RASE, National Agricultural Centre, Stoneleigh Park, Warwickshire CV8 2LZ, UK;<br>Tel: +44-203-69 69 69,<br>Fax: +44-203-69 69 00  |
| <b>July 94</b> |  |  |
| 04. - 06.      | Origin and Evolution of the Flora of the Monsoon Tropics, Tinaroo/Australia  | ASBS Symposium, c/o Mr. J. Clarks-on, P.O. Box 1054, Mareeba Qld 4880, Australia   |
| 05. - 10.      | Interforst '94, 7th International Trade Fair for Forestry and Log Timber Technology, Munich/Germany  | Munich Trade Fair Corporation, Messegelände, P.O. Box 12 10 09, 80034 Munich, Germany;<br>Fax: +49-89-510 75 06  |
| 24. - 27.      | International IUFRO/NEFU/FAO Seminar on Forest Operations under Mountainous Conditions, Harbin/China                                       | Prof. Li Guangda, Dept. of Forest Operations, Northeast Forestry University, 8 Hexing Road, 150040 Harbin, P.R. of China;<br>Fax: +86-451-240146   |
| 24. - 29.      | COFE/IUFRO International Meeting on Advanced Technology in Forest Operations: Applied Ecology in Action, Portland and Corvallis/Oregon/USA | Dr. Loren Kellogg, Forest Engineering, Oregon State University, Corvallis, OR 97331-5706, USA<br>Tel: +1-503-737 28 36,<br>Fax: +1-503-737 43 16   |
| <b>Aug. 94</b> |  |  |
| 13. - 22.      | Symposium on Mountain Geoeology and Sustainable Development, Germany, Austria and the Czech Republic                                       | Prof. Dr. J. Stadelbauer, Institute of Human Geography, University of Freiburg, Werderring 4, 79098 Freiburg, Germany;<br>Tel: +49-761-203 35 77,<br>Fax: +49-761-203 35 75                                |
| 20. - 26.      | VI International Congress of Ecology, Manchester/UK  | The Secretary, VI International Congress of Ecology, Dept. of Environmental Biology, The University, Manchester M13 9PL, United Kingdom  |
| 28. - 08.09.   | Measuring and Monitoring Biodiversity in Tropical and Temperate Forests, Chiang Mai/Thailand   | Secretariat, Forest Biodiversity Symposium, c/o Royal Forest Dept., Silvicultural Research Sub-Division, 61 Paholyothin Road, Chatuchak, Bangkok, Thailand 10900;<br>Fax: +66-2-579 47 30                  |

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Sep. 94

05. - 07.            Management of Forest Research: Emerging Trends, Cape Town/South Africa  
A. Tapson, c/o Forestek, CSIR, P.O. Box 395, Pretoria 0001, South Africa; Fax: +27-12-841 26 89, E-mail: ATAPSON@FORESTEK.CSIR.CO.ZA
05. - 13.            International Conference on Population and Development, Cairo/Egypt  
Population 94, ICPD Secretariat, c/o UN Population Fund, 220 E 42nd St, New York, NY 10017, USA; Tel: +1-212-297 522 22, Fax: +1-212-297 49 15
06. - 09.            Management Systems for a Global Forest Economy with Global Resource Concerns, Pacific Grove/USA  
D. Brodie, Dept. of Forest Resources, Oregon State University, Peavy Hall A 108, Corvallis OR 97331-5703, USA; Fax: +1-503-737 30
07. - 09.            Air Pollution, Multiple Stress and Predisposition to Tree Decline, Fredericton/New Brunswick/Canada  
Dr. Kevin Percy, Forestry Canada, Maritimes Region, P.O. Box 4000, Fredericton, NB, Canada E3B 5PJ; Tel: +1-506-452-35 24 Fax: +1-506-454-35 25
11. - 15.            1st Airborne Remote Sensing Conference and Exhibition, Strasbourg/France  
ERIM/Airborne Conference, P.O. Box 134001, Ann Arbor, MI 48113-4001, USA; Tel: +1-313-994 12 00, Fax: +1-313-994 51 23, E-mail: wallman@vaxb.erim.org.
12. - 16.            Scenario Studies for the Rural Environment, Wageningen/The Netherlands  
DLO Winand Staring Centre, International Agricultural Centre, P.O. Box 88, 6700 AB Wageningen, The Netherlands; Tel.: +30-83 70-901 11, Fax: +30-83 70-185 51
18. - 21.            Inventory and Management of the Boreal Forests: Meeting World Needs, Anchorage/Alaska/USA  
Mr. Vernon J. LaBau, USDA Forest Service, Forestry Sciences Lab., 201 E. 9th Ave., Suite 303, Anchorage, AK 99501, USA; Tel: +1-9 07-2 71 25 85
26. - 30.            International Symposium on Resource and Environmental Monitoring, Rio de Janeiro/Brazil  
INPE, c/o CRI, Av. dos Astronautas 1758, 12227-010 Sao Jose dos Campos, SP-Brazil; Fax: +55-123-21 85 43
27. - 01.10.        IUFRO International Symposium on Growth and Yield of Tropical Forests, Tokyo/Japan  
Dr. Yukichi Konohira, Deputy Coordinator Division 4, Tokyo University of Agriculture and Technology, 3-5-8 Saiwaicho Fuchu, Tokyo 183, Japan; Fax: +81-423-64-78 12



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### Dec. 94

09. - 12. International Seminar on Development Issues in Marginal Regions: Disasters, Environment and Development, Delhi/India  
Dr. R. B. Singh, Dept. of Geography, University of Delhi, Delhi 110 007, India
12. - 16. International Symposium on High Salinity Tolerant Plants, Karachi/Pakistan  
Dr. M. Ajmal Khan, Convenor, Int. Symp. on High Salinity-Tolerant Plants, Dept. of Botany, University of Karachi, Karachi-75270, Pakistan
14. - 15. International Symposium on Urbanisation and Forests, Chiang Mai/Thailand  
Dr. Pantawee Mapairoje, Dept. of biology, Faculty of Science, Chiang Mai University, Chian Mai 50200, Thailand; Fax: +66-53-222 268

### Feb. 95

19. - 24. Eucalypt Plantations: Improving Fibre Yield and Quantity, Hobart/Australia  
The Organising Committee, Co-operative Research Centre for Temperate Hardwood Forestry, Locked Bag No. 2 Post Office, Sandy Bay 7005, Tasmania, Australia;  
Fax: +61-02-20 79 42,  
E-mail: NEIL@TAS.FOR.CSIRO.AU

### March 95

06. - 12. The United Nations World Summit for Social Development, Copenhagen/Denmark  
Secretariat of the World Summit for Social Development, DPCSD, Room S-3060 A, New York, NY 10017, USA; Fax: +1-212-963 1010
20. - 24. Stand Establishment and Inter-Rotation Management: 2nd International Conference on Forest Vegetation Management, Rotorua/New Zealand  
IFVM #2, NZ FRI, Private Bag 3020, Rotorua, New Zealand;  
Fax: +64-7-347 93 80

### June 95

12. - 14. Recent Advances in Tropical Tree Seed Technology and Planting Stock Production, Haad-Yai/Songkhla/Thailand  
Symposium Secretariat, AFTSC, Muak-Lek, Saraburi 18180, Thailand;  
Tel: +66-36-341-305,  
Fax: +66-36-341-859

### Aug. 95

03. - 06. Research on Environmentally Sound Forest Practices to Sustain Tropical High Forests, a meeting associated with the IUFRO World Congress, Kotka/Finland  
Rudolf Heinrich, Chief, Forest Harvesting & Transport Branch, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy;  
Tel: +39-6-57 97 47 27,  
Fax: +39-6-57 97 51 37





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### July 94

03. - 08. International Expert Workshop on Nitrogen-Fixing Trees for Acid Soils, Turrialba/Costa Rica  
Mark H. Powell, Nitrogen Fixing Tree Association, 1010 Holomua Road, Paia, Hawaii 96779-9744, USA;  
Tel: +1-808-579 95 68,  
Fax: +1-808-579 85 16

04. - 09. Interactive Seminar and Workshop on Soil, Tree, Machine Interactions in Forest Operations, Feldafing/Germany  
Dr. Dietmar Matthies, Lehrstuhl für Forstliche Arbeitswissenschaft und Angewandte Informatik, Hohenbachernstr. 22, 85354 Freising, Germany

### Nov. 94

07. - 09.12. Women and environmental management course, Canberra/Australia  
George Collett, Forestry and Environment Division, ANUTECH Pty Ltd, Canberra ACT 0200, Australia;  
Tel: +61-6-249 56 71,  
Fax: +61-6-249 58 75

### Oct. 1994

17. - 21. IUFRO International Workshop on Sustainable Forest Management, Furano/Japan  
Dr. Hidejiro Nagumo, Research Division, University Forests, University of Tokyo, 1-1-1 Yayoi, Bunkyo-ku, Tokyo 113, Japan;  
Tel: +81-3-38 12 21 11,  
Fax: +81-3-38 12 47 45

### Nov. 94

13. - 19. International Workshop on *Albizia* and *Paraserianthes*, Mindanao, Philippines  
Mark H. Powell, Nitrogen Fixing Tree Association, 1010 Holomua Road, Paia, Hawaii 96779-9744, USA;  
Tel: +1-808-579 95 68,  
Fax: +1-808-579 85 16

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## International Agenda: Training Courses

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### June 94

07. - 08.10. Certificate Course in Community Forestry, Bangkok/Thailand  
Dr. Somsak Sukwong, Director, Regional Community Forestry Training Center, c/o Faculty of Forestry, Kasetsart University, Bangkok 10900, Thailand

06. - 15.07. The Planning of Projects for Biodiversity Conservation, Bradford/UK  
The Course Director, The Planning of Projects for Biodiversity Conservation, University of Bradford, Bradford, England BD7 1DP, UK;  
Fax: +44-274-38 52 80

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|--------------|---|---|
| 13. - 24.    | GIS and Environmental Modelling Course, Canberra/Australia                                | George Collet, Forestry & Environment Division, ANUTECH Pty Ltd., Australian National University, Canberra ACT 0200, Australia;<br>Fax: +61-6-249 58 75   |
| 20. - 15.07. | Resource and Environmental Management Course, Canberra/Australia                          | George Collet, Forestry & Environment Division, ANUTECH Pty Ltd., Australian National University, Canberra ACT 0200, Australia;<br>Fax: +61-6-249 58 75   |
| 26. - 09.07. | 9th International Training Course on Environmental Assessment and Management, Aberdeen/UK | Conference Administrators, Ms. Barbara Rae or Ms. Jane Butler, Centre for Environmental Management and Planning, AURIS Environmental Division, 23 St. Machar Drive, Old Aberdeen, AB2 1RY, Scotland UK; Fax: +44-224-48 76 58 |
| July 94      |   |   |
| 04. - 05.08. | International Training Course on Agroforestry Extension for Development, Nairobi/Kenya    | Managing Director, Technical & Study Tours Ltd., P.O. Box 50982, Nairobi, Kenya;<br>Tel: +254-2-22 21 92,<br>Fax: +254-2-78 04 61   |
| 06. - 22.09. | Research Methods in Forestry, Reading and Oxford/UK                                       | Mrs Helen Stutley, Statistical Services Centre, University of Reading, P.O. Box 238, Whiteknights Road, Reading, Berkshire RG6 2AL, UK;<br>Tel: +44-734-31 80 25,<br>Fax: +44-734-75 31 69                                    |
| Oct. 94      |   |   |
| 04. - 15.    | Sampling Strategies for Marine Ecological Research, Bremen/Germany                        | Dr. Matthias Wolff, Center for Tropical, Marine Ecology (ZMT), Klagenfurter Str., Gebäude GEO, 28359 Bremen, Germany;<br>Tel.: +49-421-218 51 54,<br>Fax: +49-421-218 51 70   |
| 24. - 11.11. | Agroforestry Research for Development, Nairobi/Kenya                                      | Training Coordinator, October 1994 Training Course, ICRAF Training Programme, P.O. Box 30677, Nairobi, Kenya; Fax: +254-2-52 10 01  |
| 31. - 02.12. | International Training Course on Agroforestry Extension for Development, Nairobi/Kenya    | Managing Director, Technical & Study Tours Ltd., P.O. Box 50982, Nairobi, Kenya;<br>Tel: +254-2-22 21 92,<br>Fax: +254-2-78 04 61   |

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A comprehensive faunistic and floristic database would then be incorporated into the GIS, enabling instant availability of information required for research and management of the tropical forests.

### **Training and Teaching Opportunities**

All research projects of the GRSP will be developed in collaboration with Guyanese counterparts, notably the University of Guyana, in offering research training and teaching opportunities.

Particular attention would be generated in training and job opportunities for Amerindians, especially in relation to their knowledge of natural systems.

### **Ecological Studies and Sustainable Timber Extraction**

A project to investigate the impact of logging regimes on tree populations, within 24 4-ha study plots in which different levels of timber extraction are implemented and the impact monitored over a five year post-harvest study period, using both field and remote sensing technologies.

### **Biological Diversity and Monitoring**

Continuous compilation of faunistic and floristic data which will then be incorporated into the central GIS/database system, with emphasis on the continuous monitoring of species populations within contrasting habitats.

### **Ethno-botanical Database**

Establishment of a detailed ethno-botanical and economic botany database. The database will be developed through biomedical studies into the techniques used for plant

screening and identification of potentially useful compounds originating from Amerindian knowledge.

Studies on the structure of ethno-botanical knowledge within Amerindian communities, the dissemination of such information and the social-economic importance of ethno-botanical information.

### **Non-Timber Extraction**

Research into the utilization and extraction of non-timber forest products, with specific interests regarding investigations into the sustainable management of potential non-timber extraction reserves.

### **Distance Teaching and Intellectual Property Rights**

Through the establishment of a field network and database, a distance teaching programme for Amerindians may then be established providing an important opportunity for formal training and teaching using their knowledge collated into the database and distributed through a field network of Amerindians (this is being considered with the Foundation of Ethnobiology, Oxford).

The GIS/database system could also be developed for cataloging the knowledge of individual Amerindians, providing a 'labelling system' for indigenous peoples knowledge and therefore a system to assist in intellectual property rights of Amerindians.

The following research projects are being considered for development resulting from the formation of a central database/GIS project:

### News

#### *The Weilburg Declaration*

#### **Ecological:**

impact of logging on tree populations, with remote sensing applications impact and ecological viability of non-timber extraction reserves, with remote sensing tree population dynamics in low and high diversity forest types

#### **Ethnobotanical:**

community knowledge structure  
surveys of plant uses  
cassava uses and varieties

#### **Biomedical/Biochemical:**

comparative techniques for screening of plant compounds  
chemical analysis and tissue culture potentials of Cassava varieties

#### **Information rights and training:**

training and teaching field network  
'labelling knowledge' for intellectual property rights using GIS.

For further information please contact:

Dr. Mark Johnston  
Faculty of Applied Sciences  
University of the West of England  
Coldharbour Lane  
Bristol BS16  
United Kingdom  
Tel: +44-272-65 62 61  
Fax +44-272-76 38 71

The German organization "Initiative Tropenwald" (ITW) was founded in 1992. In July same year ITW established a working group to elaborate a catalogue of criteria apted to evaluate the sustainability of tropical forest management. This catalogue is to be understood as a German contribution to the international efforts towards sustainable management of tropical forests and for further decisions on an internationally accepted certification system for timber production. The basic framework of the catalogue is the "ITTO Guidelines for sustainable management of natural tropical forests".

A preliminar catalogue was presented to ITW in December 1993. It was decided that an independent forest research institute should test the practicability of this catalogue before the final version will be published. On behalf of the Federal Ministry for Economic Cooperation (BMZ) the German Agency for Technical Cooperation (GTZ) addressed the Institute for World Forestry, Hamburg, to carry out the field test. The organization of this field test was discussed at an informal meeting, held from 24 - 25 February 1994 at Weilburg, Germany. Forestry experts from Great Britain, France, The Netherlands, USA, Germany as well as from Technical Cooperation Projects in Malaysia and the Ivory Coast were invited.

The meeting at Weilburg can be regarded as an important step forward in the development of a method for the assessment of a sustainable forest management as a basis for a certification system for timber production. The following Declaration defines the intent and further steps to be taken. One of the most important decisions was to carry out the field test as a comparison of criteria, principles and standards produced by different international organizations concerned with the evaluation of forest management or certification systems.

### The Declaration

1. There is increasing global recognition of the need for tropical forest management which is aimed at sustained yield. This recognition is exemplified by Target 2000 agreed by the International Tropical Timber Organization in 1990, the Global Forest Principles which were agreed on at the UNCED meeting in Rio de Janeiro in 1992, and the foundation of the Forest Stewardship Council in 1993.
2. The general public perceives a credibility gap between the principles of management for sustained yield and much of the current practice of forest management.
3. The credibility gap can be reduced or closed by the establishment and operation of reliable systems of independent certification which verify the quality of field operations in individual forest management units. The policy, legislative and administrative context of the field operations should also be taken

into account.

4. There are several certification systems for tropical forests in various states of elaboration and levels of detail. A harmonized or unified certification system would be more easily accepted by both producers and consumers of tropical forest products.
5. The participants resolved to associate themselves in a working group (the Weilburg Group) with three functions:
  - a. assist in comparative field tests of the most developed certification systems currently available for tropical forests. The tests will concentrate on standards (principles, criteria, and levels of verifiable indicators) of forest management and the administrative, socio-legal and policy framework within which the forest management operates. The tests will not examine chains of custody of forest products, certification of origins or eco-labelling.
  - b. review the results of the comparative field tests and the associated recommendations of the evaluation teams, together with the synthesis report.
  - c. if justified by the results of the tests, disseminate and promote the use of a single set of standards of tropical forest management. This set might be prepared by synthesis of the best features of the tested standards. The dissemination and promotion would be carried out through the organizations with which the individual members of the Weilburg Group are associated.

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6. The Weilburg Group decided that the field tests should include the following standards, if the original developers agree to their inclusion:

- Initiative Tropenwald-Kriterien zur Beurteilung der Bewirtschaftung tropischer Wälder
- Rainforest Alliance - Smart Wood scheme
- Soil Association - Responsible Forestry Standards

The tests will include evaluation of the field applicability of the "ITTO Guidelines for sustainable management of natural tropical forests" (1990) and the associated "Criteria for sustainable forest management" (1992), and the "Forest Stewardship Council's Principles and Criteria" (1993), together with relevant national initiatives if they are available.

7. The Forest Stewardship Council, the International Tropical Timber Organization, the Rainforest Alliance and the Soil Association's Responsible Forestry Programme will be invited to nominate representatives to join the Weilburg Group.

8. The field tests will be phased. Initial tests will be conducted in Germany (forest districts in Lübeck and Lower Saxony) and possibly in the Netherlands. These pre-tests will refine the mechanisms and logistic needs for the main tests. The Weilburg Group recognized that the criteria and verifiable indicators in the standards are for tropical forests and are not necessarily suitable for temperate forests. However, the pre-tests are intended only to refine test procedures, not the standards themselves. The main phase will cover at

least one country in each of the three continents with tropical forests. In each chosen country the standards will be tested in a major industrial forest management unit and in a small-scale community forest management unit. The tests will not certify the quality of forest management in the host units. Operators of the forest management units which host the tests will acknowledge that the tests are solely to compare and improve the standards.

9. The chosen countries should already host one or more projects related to the management of tropical forests, so that the accumulated knowledge and logistic support of that or those projects(s) can be used by the evaluation teams. The agreement of the relevant national authorities and the operators of the host forest management units are of course prerequisites. (The Weilburg Group anticipates that direct offers to host the comparative tests will be received from appropriate countries and operators.)

For further information please contact Prof. Dr. J Heuvel Dop (elected by the Weilburg Group as its coordinator) under the following address:

Bundesforschungsanstalt für  
Forst- und Holzwirtschaft  
Prof. Dr. J. Heuvel Dop  
Institut für Weltforstwirtschaft  
Leuschnerstr. 91  
D - 21031 Hamburg  
Tel. +49-40 739 62-100  
Fax. +49-40 739 62-480



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### ***Progress in the establishment of the Forest Stewardship Council***

In our Newsletter Nr. 7, November 1993, we have reported about the Founding Assembly of the Forest Stewardship Council (FCS), an international non-profit, non-governmental organization which plans to evaluate, accredit and monitor certifiers of forest products.

Recently, the Board of Directors held their first Board meeting in Brazil. The following is a summary of the major decisions reached at this meeting:

#### **Board of Directors:**

The Board of Directors will serve in an individual capacity, not organizational. No substitutions are allowed on the Board, and there will be a process developed for destituting Board members. Board members will serve a three-year term. All Board members must file a disclosure of any conflicts of interest they may have. The Chair of the Board is Chris Elliott.

#### **Secretariat:**

The Board expressed a preference for Mexico as the site of the International Headquarters. A Feasibility study is currently under way. The search for an Executive director remains open.

#### **Strategy for operation:**

The Board has set up the following Task Forces and Working Groups:

- Membership Criteria
- Advisory Bodies
- Accreditaion Process
- Charter

- FSC Operational Structure
- FSC Headquarters and Executive Director
- External Communication
- Fundraising
- Principles and Criteria

The Board expects to submit proposals on the above mentioned topics to the participants of the Founding Assembly by April 1994 for final ratification.

The Board also met briefly with delegates from a Brazilian initiative, which is setting up a working group in Brazil, with the aim of establishing an FSC initiative in Brazil.

For further information please contact:

Jamison Ervin  
P.O. Box 8 49  
Richmond, VT 05477  
USA  
Fax: +1 802 434 3171

### ***BIOCLIM and PLANTGRO: Two Computer Programs to Predict Where and How Well Tropical Trees will Grow***

Australian scientists and colleagues in other countries are using new methods of environmental analysis to assist studies of tropical forest areas. This short article describes work being carried out mainly at the Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia, Division of Forestry to answer the questions "where will it grow?" and "how well will it grow?" for any tropical forest tree species.

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Recent interest in bioclimatic work has been stimulated by the development of interpolation techniques which allow mean climatic conditions to be estimated reliably for any location on Earth. Programs developed by the Centre for Resource and Environmental Studies, Australian National University, Canberra, have been used to develop detailed interpolation relationships for many countries. For example, work by the Environmental Resources Information Network, Canberra, produced relationships for Australia which could estimate mean monthly precipitation for any location with an error generally less than 10%. Errors for estimates mean monthly maximum temperature and minimum temperature were generally less than 0.5°C.

These Australian interpolation relationships were used to implement the BIOCLIM bioclimatic analysis program. BIOCLIM takes in geocoded data (i.e. latitude, longitude and elevation) and estimates mean climatic conditions for each location for a number of climatic factors which are important in determining species distributions. For example, one of the first applications of BIOCLIM was to analyse the natural distribution of the sub-tropical species *Eucalyptus citriodora*. The BIOCLIM program was used to estimate the range of 12 important climatic factors at 84 natural sites and found that the range of mean annual temperature was 18 - 24°C, whilst the range of mean annual precipitation was 350-1900 mm. The assessment of which 508 locations in Africa had similar climatic conditions followed. This type of analysis can assist in identifying areas which are climatically suitable for the introduction of particular species. Conditions at trial sites, as well as at locations within species' natural distribu-

tions, can be used to improve the knowledge of the requirements of a particular taxa. BIOCLIM has also been used successfully to predict the natural distribution of lesser-known plants and animals. Their climatic requirements can be estimated from even small numbers of observed locations. The range of climatic conditions they require can then be compared with conditions estimated for a regular grid and likely complete distributions can be mapped.

The need to map climatically suitable areas led to the development of climatic mapping programs which can be used on IBM-compatible personal computers. The first of these programs was developed for Africa. Climatic data from about 1100 meteorological stations were analysed and interpolation relationships were produced for monthly mean values of maximum temperature, minimum temperature and precipitation. These values were estimated for over 10,000 locations in a half-degree grid across Africa. Six climatic factors important for tree species were estimated for each of the 10,000 locations. These factors (mean annual precipitation, rainfall seasonality, dry season length, mean maximum temperature of the hottest month, mean minimum temperature of the coldest month and mean annual temperature) were originally selected by Derek Webb, Peter Wood and Julie Smith who devised "A Guide to Species Selection for Tropical and Sub-tropical Plantations" published by the Commonwealth (now Oxford) Forestry Institute in 1980. The second edition of this compendium contains descriptions of the climatic requirements of 173 species and provenances. Any of these descriptions can be entered into the African climatic mapping program and the program

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can quickly generate a map showing the locations which satisfy the description of climatic requirements.

Climatic mapping programs have proved to be a very effective means for checking and improving descriptions of species' requirements. Interpolation relationships and climatic mapping programs have been developed for particular countries including Australia (45.000 locations), China (100.000 locations), Thailand (50.000 locations), Indonesia (26.000 locations), Vietnam (16.000 locations) and Zimbabwe (5.000 locations). A program has been developed for Central and South America using interpolated data kindly supplied by CIAT, Cali, Colombia. A half-degree grid climatic mapping program for the whole world has also been developed which makes use of some interpolated relationships (e.g. Africa and Australia), as well as data from numerous individual meteorological stations.

The climatic mapping programs help to answer the question "Where will it grow?", but they do not answer the question "How well will it grow?". To answer this question soil as well as climatic limitations have to be considered. Agricultural scientists have developed complex simulation models to predict the effects of environmental limitations on the growth of the dozen or so crops which dominate world food production. It will be many years before such detailed models are available for the hundreds of species and provenances of trees used in the tropics and sub-tropics. There was a great need for a simpler form of model which could be used to provide a coarse prediction of plant growth. This need has been met by development of the PLANTGRO model developed by Plantsoft Services, Canberra.

PLANTGRO uses information on 12 important soil factors including pH, nitrogen and phosphorus levels, as well as monthly, weekly or ten-daily data for maximum temperature, minimum temperature, precipitation, evaporation and solar radiation. The model includes a simple water balance sub-model, as well as light and temperature sub-models. "Fuzzy-logic"-type relationships are used to rate soil and climatic limitations on a 0-9 scale, where 0 indicates ideal conditions and 9 indicates highly unsuitable conditions. The effects of individual factors are combined using Liebig's Law of the Minimum, where the most limiting factor determines the level of plant performance. PLANTGRO was originally developed at CSIRO's Division of Water and Land Resources, but is now marketed commercially. Over 400 copies of the program have already been sold, which indicates its wide acceptance. It is presently being used by consultants to assist the development of a National Masterplan for Forest Plantations in Indonesia. The Dutch-funded Plant Resources of Southeast Asia (PROSEA) project also plans to develop PLANTGRO files for many tropical forest tree species.

Work at CSIRO Division of Forestry is developing simulation mapping programs to complement PLANTGRO. These enable a simplified version of PLANTGRO to be run for thousands of sites using soil information derived from maps and interpolated climatic data. Providing predictions for thousands of sites helps to check if a description of a particular plant's requirements is credible when applied over a wide range. The first simulation mapping program included soil and monthly mean climatic data for the same 10.000 locations used in the African climatic mapping

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model. Another simulation mapping program has subsequently been developed for Australia and programs for Thailand and China are under development.

More information about the methods described here can be obtained from:

Dr. Trevor H. Booth  
CSIRO Division of Forestry  
P.O. Box 4008  
Queen Victoria Terrace  
Canberra ACT 2600  
Australia

Tel: +616 281 8259

Fax: +616 281 8312

E-mail: [trevorb@cbr.for.csiro.acc](mailto:trevorb@cbr.for.csiro.acc)

***The Tropical Forest Budget Line  
B7-5041 of the CEC 1994: Note  
for the Information of Applicants***

In the last issue of our Newsletter we gave you some information on budget lines and funds managed by the European Commission for projects in the field of tropical forestry in 1993. Now we have got some additional information about the budget line B7-5041 for 1994.

Under budget line B7-5041 - Tropical Forest medium or small scale projects - may be funded provided they have a significant positive impact both on the forest biodiversity conservation and the indigenous peoples' sustainable development.

### **Small Scale Projects**

are local projects encompassing both protected tropical forest (National Park, Biosphere Reserve, Nature Reserve, possibly indigenous land) and buffer zone with human settlement.

Such a project is designed for developing sustainable activities in the buffer zone (agriculture, non-timber forest products, handcraft, ecotourism) in order to prevent deforestation and to maintain the fringe of the protected area(s). It may also help to manage the protected areas when necessary (demarcation, control, research ecotourism, education).

A small scale project must include awareness, education and training as specific topics.

### **Medium Scale Projects**

are regional or national projects having as main objective i) a better understanding of a specific problem (e.g. research of non-timber marketable products) or ii) to enhance environmental information (e.g. Geographical Information Systems) or iii) to set up or improve a management body (e.g. nature park network, management body for a forest, etc.).

### **Environmental Impact Assessment (EIA)**

In a pilot phase, the funding of EIA may be possible for development projects having a negative potential impact on the tropical forest.

### **Duration**

Normally medium or small scale projects last 2 to 5 years; when the project is expected to last longer, it must be divided into two (or more) phases.

### Proposition

Proposals can be submitted for funding either by NGO's, government bodies, local associations or consultancies.

Proposals must i) include a detailed project description (with precise mapping), and ii) be sent to the European Commission with two copies.

The volume of the detailed project description is left to the appreciation of the tender, but it must be precise enough for the reader to have a good understanding of the project, considering altogether objectives (immediate and wider), actions to undertake, inputs (personnel and equipment) and outputs (as much quantified as possible).

If the proposal is written in a European language other than English, French or Spanish, a summary in one of these would be advisable.

For further information contact:

Jean-Claude Jacques

European Commission

DG I

Rue de la Loi 200

B-1049 Brussels

Tel: +32-2-299 11 11

Fax: +32-2-299 09 14

## Publications

### *ACCESS-A Directory on Biosphere Reserves*

ACCESS is a Directory of Contacts, Environmental Data Bases, and Scientific Infrastructure on 175 Biosphere Reserves in 32 Countries, edited by the International Cooperation of the Man and the Biosphere Programs of Europe and North America (Euro MAB).

Its purpose is to direct the reader to sources of data and other information on the scientific activities currently ongoing in these biosphere reserves. It is the intent of the creators of this directory to encourage and facilitate communication and cooperation involving biosphere reserves in order to address environmental problems and to demonstrate the role of biosphere reserves in conservation and the sustainable use of ecosystems.

This directory provides a common information base for use by policy makers, planners, scientists, and resource managers in government agencies and non-governmental organizations, as well as for private individuals interested in biosphere reserves. It will provide a basic reference for use in developing the scientific and educational functions of the EuroMAB biosphere reserve network.

## European Tropical Forest Research Network

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The text of the directory is organized alphabetically by country and within each country, alphabetically according to the name of the biosphere reserve. A large tabular summary follows the directory text. The tabular summary provides information on the scientific databases, research topics, and available site support for research in EuroMAB biosphere reserves.

The information contained in the ACCESS directory is also available on personal computer diskettes at modest cost of reproduction and can be ordered from:

Man and the Biosphere Program Secretariat  
UNESCO/MAB

1, rue Miollis

75015 Paris

France

Tel: +33-1-45 68-40 68

Fax: +33-1-40 65-98 97

### *Seed Procurement and Legal Regulations*

H. Wolf. 1992. Seed Procurement and Legal Regulations for forest Reproductive Material in Tropical and Subtropical Countries. Proceedings of an International Symposium held from 4 - 10 October 1992 in Nairobi, Kenya. GTZ-Forestry Seed Centre Muguga, Nairobi, Kenya. 555 pp. ISBN 9966-9897-0-6.

These proceedings are the outcome of the first International Symposium on Seed Procurement and Legal Regulations for Forest Reproductive Material which took place from 4 - 10 October 1992 in Nairobi, Kenya. It was organized by the GTZ-Forestry Seed Centre Muguga.

The publication contains all the papers presented at the symposium, dealing with the following topics:

- The production and quality of forest reproductive material
- The role of tree improvement for the production of forest reproductive material
- Trade and Movement of forest reproductive material
- The role of Tree Seed Centres

The recommendations and keynotes which have been translated into French and Spanish are also included.

### *Forest Genetics - A New Journal"*

"Forest Genetics" is a new journal, edited by the Faculty of Forestry, Technical University in Zvolen, Slovakia. The first issue will be published in Spring 1994.

The international scientific journal is aimed for the publication of recent advances in the fast developing field of forestry research. The journal has an international editorial board to help maintain the quality and relevance of the papers published. Forest Genetics will be an international medium in all fields of forest genetics and breeding of forest plants and will be a link between the "Western" and the "Eastern" forest genetics research.

For subscription please contact:

Arbora Publishers spol. s r. o.

P. O. Box 22

SK - 960 06 Zvolen 6

Slovakia

### ***Bulletin "Mejoramiento Genético y Semillas Forestales"***

The Forest Seed Project (PROSEFOR), founded by Danida and implemented through the Tropical Agricultural Research and Education Center (CATIE) in the six Central American countries and the Dominican Republic, is publishing in Spanish the new bulletin "Mejoramiento Genético y Semillas Forestales."

The bulletin intends to keep informed people involved in forest seed improvement, seed production and seed use in the country members. It is planned to be published every six months containing information on research achievement, seed marketing, seed production, relevant events and new information available.

To receive the bulletin please contact:

CATIE

Rodolfo Salazar

PROSEFOR LEADER

Turrialba

Costa Rica

Tel: +506-56-64-31 / 56-01-69

Fax: +506-56-1533

### ***Directorio de Centros de Capacitación y de Investigación de la Pan-Amazônia***

Bernard Pirson, 1993. Directorio de Centros de Capacitación y de Investigación de la pan-amazônia, serie información amazônica 3, Asociación de Universidade Amazônicas, Belém, UNAMAZ, UFPA. 523 pp. No ISBN.

This directory, written in Spanish and Portuguese, was compiled from 9 Pan-Amazonian countries. It covers about 70 educational and research institutions and contains a short geographical and political introduction for every country. It is complemented by a description of the situation in education and research, in the respective country. Furthermore it is followed by a detailed and comprehensive description of the institutions providing information on addresses, number of research staff, area, number of students, facilities and existing research programmes.

### ***Global Forest Resources Assessment***

Aarne Nyysönen, 1993. Proceedings of FAO/ECE Meeting of Experts on Global Forest Resources Assessment in cooperation with UNEP and with the support of FINNIDA (Kotka II). The Finnish Forest Research Institute. Helsinki, Finland. 469 pp. ISBN 951-40-1316-6, ISSN 0358-4283

The FAO/ECE meeting of experts on Global Forest Resources Assessment in cooperation with UNEP was held at the Kotka College of Forestry and Wood Industry from 3 to 7 May 1993. This was the second meeting on the same topic in Kotka; the first meeting there had taken place in October 1987.

The meeting was attended by 53 participants from 30 countries, including the experts of the satellite meeting on a "Remote Sensing Processing and Archiving System" (RESPAS).

The main content of these proceedings is formed by the report of the meeting with its annexes, the background papers for various agenda items, and the summaries of 9 voluntary papers.

The proceedings are intended to inform the decision-makers and inventory specialists about the views of the experts attending the meeting.

### *Allelopathy in Agroecosystems*

P. Tauro and S.S. Narwal. 1992. Proceedings of the First National Symposium "Allelopathy in Agroecosystems (Agriculture and Forestry)". International Allelopathy Foundation, E-2, Married Flats, CCS, Haryana Agricultural University, Hisar-125 004, India. 215 pp. ISBN: 81-900315-0-3.

Allelopathy is a new and potential field of research. Studies have shown that allelopathy could be utilized (a) to increase production of foodgrains, vegetables, fruits and forestry, (b) to decrease harmful effects of modern agricultural practices on soil health and productivity and (c) to maintain the soil productivity and pollution free environment for our future generations. The Indian Society of Allelopathy formed in 1990 hold the First National Symposium "Allelopathy in Agroecosystems" from 12 - 14 February 1992 in Hisar, India. The proceedings contain the invited lectures and extended abstracts, dealing mainly with Crop Production, Forestry Grasslands and Allelochemicals. They give a good overview of aspects of current allelopathic research in various countries.

## Vacancy Announcements

**BFH Hamburg:**  
**Ph.D. Candidate in the Field of  
Forestry for a Research Project in  
Indonesia**

The Institute for World Forestry in Hamburg/Germany is looking for a young scientist with a degree in forestry, ecology or a related discipline who is interested in doing a Ph.D.. His/her main task will be to work in a research project dealing with aspects of forestry, ecology, morphology and physiology in Samarinda/Indonesia.

Duration: 36 months, of which 24 months will be spent in Samarinda and 12 months at the Institute for World Forestry in the Federal Research Center for Forestry and Timber Industry/Hamburg.

Start: As soon as possible

Salary: according to BAT IIa/2

Qualification: Appropriate Primary Degree in Forestry or a related discipline

If interested, please send your application and the necessary papers to the following address:

Prof. Dr. J. Heuveland

Institut für Weltforstwirtschaft

Bundesforschungsanstalt für Forst- und Holz-  
wirtschaft

Leuschnerstr. 91

D-21031 Hamburg

Tel: +49-40-739 62-100

Fax: +49-40-739 62-480



## European Tropical Forest Research Network

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The following organisations act as National Nodes to the European Tropical Forest Research Network:

**Austria:**

- \* Institut für Waldökologie, Universität für Bodenkultur Wien, Peter-Jordan-Str. 82, A-1190 Vienna. Tel: +43-1-47 85 4-41 00, Fax: +43-1-479 78 96, contact: G. Glatzel

**Belgium:**

- \* CJS/BIO, p.a. Science Policy Office, Wetenschapsstraat 8, B-1040 Brussels. Tel: +32-2-238 34 11, Fax: +32-2-230 59 12, contact: M. Desmeth

**Denmark:**

- \* Danish Centre for Tropical Agriculture & Environment, Royal Veterinary University, Rolighedsvej 23, DK-1958 Frederiksberg C. Tel: +45-35 28 34 29, Fax: +45-35 28 34 28, contact: K. Bruhn

**Finland:**

- \* University of Helsinki, Dept. of Forest Ecology, Tropical Silviculture, Viikin koetila 20, SF-00014 University of Helsinki. Tel: +3 58-0-708 56 43, Fax: +3 58-0-708 56 48, contact: M. Kanninen

**France:**

- \* CIRAD-Forêt, 45 bis, Avenue de la Belle Gabrielle, F-94736 Nogent/Seine cedex. Tel: +33-1-43 94 43 62, Fax: +33-1-43 94 43 29, contact: F. Grison

**Germany:**

- \* Bundesforschungsanstalt für Forst- und Holzwirtschaft, Leuschnerstr. 91, D-21031 Hamburg. Tel: +49-40-739 62-100, Fax: +49-40-739 62-480, contact: J. Heuveldop

**Greece:**

- \* Directorate of Forest Resource Development, Section of Forest Research, Ippokratou St. 3, GR-10164 Athens. Tel: +30-1-362 12 90, Fax: +30-1-360 71 38, contact: N. Efsthathiadis

**Ireland:**

- \* Council for Forest Research and Development, Agriculture Building, University College Dublin, Belfield, IRL-Dublin 4. Tel: +353-1-708 77 00, Fax: +353-1-708 11 80, contact: F. Mulloy

**Italy:**

- \* Laboratorio di Botanica, Agraria e Forestale, Dipartimento di Biologia Vegetale, Università di Firenze, Piazzale delle Cascine 28, I-50144 Firenze. Tel: +39-55-36 57 98, Fax: +39-55-36 01 37, contact: C. Lenzi-Grillini

**Netherlands:**

- \* Tropenbos, P.O. Box 2 32, NL-6700 AE Wageningen. Tel: +31-83 70-282 62, Fax: +31-83 70-230 24, contact: E. Lammerts van Bueren

**Norway:**

- \* Norwegian Centre for International Agricultural Development, Agricultural University of Norway, P.O. Box 50 02, N-1432 Aas. Tel: +47-64-94 98 24, Fax: +47-64-94 07 60, contact: E. Stijfhoom

**Portugal:**

- \* Tropical Forestry Centre, Tapada da Ajuda, P-1300 Lisbon. Tel: +351-13 97 32 06, Fax: +351-13 97 31 63, contact: R.M. de A. Sardinha

**Spain:**

- \* CICYT, Calle Rosario Pino 14-16, E-28020 Madrid. Tel: +34-1-577 00 98, Fax: +34-1-571 57 81, contact: J. A. Muñoz Delgado

**Sweden:**

- \* Natural Resources Management Institute, Stockholm University, S-10691 Stockholm. Tel: +46-8-16 12 90, Fax: +46-8-15 59 87, contact: M. Kegl

**United Kingdom:**

- \* UK Tropical Forest Forum, c/o Royal Botanic Gardens, Kew, Richmond, UK-Surrey TW9 3AE. Tel: +44-81-332 62 99, Fax: +44-81-332 62 94, contact: J. Thornback
- \* Natural Resources Institute, Central Avenue, Chatham Maritime, UK-Kent ME4 4TB. Tel: +44-634-88 00 88, Fax: +44-634-88 00 66, contact: I. Hunter

**European Union:**

- \* Commission of the European Union, DG XII/B-4, Rue de la Loi 200, B-1049 Brussel. Tel: +32-2-295 44 84, Fax: +32-2-296 62 52, contact: K. Beese