

DEPARTMENT OF FOREST SCIENCES

CATIE //

Turrialba, Costa Rica



Background:

The Department of Forest Sciences was founded in 1948 with the title "Renewable Resources Service" as part of the Inter-American Institute of Agricultural Sciences (IICA). Its general objective was to assist in the development of forestry in its broadest acceptance in Latin America. The first experimental plots, notably the arboretum were installed in 1950. In 1973, a large part of the Turrialba section of IICA became the Tropical Agriculture Center for Research and Training (CATIE), a civil non-profit association of international projections with emphasis on Central America and the Caribbean. A special symbiotic relationship exists between CATIE and IICA of which it was formerly a part. The present emphasis of the Department is on tropical forestry in areas of high rainfall both in the plains as well as in mountainous regions. Its main objectives are:

- a) To develop a concentrated programme of research carried out by highly qualified specialists combined with graduate training at Turrialba where the degree of master of sciences is offered in tropical forestry.

The research as well as the theses of successful graduate students constitute the basis of a large publication programme.

To this date 207 graduate students from 27 countries have gone through the forestry curricula. Many of them have later continued towards their Ph.D. being awarded full credit for studies undertaken in Turrialba.

- b) To assist Latin American institutions and in particular the member states of the Inter American Institute of Agricultural Sciences (IICA) in developing their own research training and action programmes through consultancy, short intensive courses and other missions.

Areas available for research within the CATIE farm

Within the nearly 1000 hectares of the farm in the valley of Turrialba, Forestry has the responsibility over:

- a) 60 ha of experimental plots involving the introduction of 200 different native and exotic species grown in small or larger plots.
- b) 60 ha of natural forest with over 300 species of trees: 30 ha of these are typically old secondary forests, of which 10 ha have been managed during the last 25 years through improvement cuttings and

some harvesting leaving the most valuable 17 species out of an initial 85. The other 20 ha of secondary forests are being enriched with valuable species. The remaining 30 ha located along the steep slopes that lead to the large Reventazón river and are used for watershed protection, wildlife refuges, as a scientific reserve, for training and ecological research and for well controlled limited recreation purposes (one nature trail in operation).

- c) Some work on agro-silvicultural systems is also in progress using native laurel trees (Cordia alliodora) and fast growing Eucalyptus deglupta trees, jointly with food crops, such as maize and beans.
- d) Other plots mainly of plantations of fast growing species (some of them established by the Department in various other ecological zones in Costa Rica are being supervised and periodically assessed.)
- e) A well equipped laboratory of wood technology, operating since 1964 at the University of Costa Rica and jointly operated between CATIE, the University of Costa Rica and the Costa Rican Ministry of Agriculture.

CATIE possesses one of the finest libraries of Latin America in the broad field of agriculture (including forestry) as well as an excellent documentation service. A certain number of publications are issued periodically.

Main Lines of Research and thesis work in Forestry

- a) Silviculture: plantations of fast growing species and manipulation of the natural forest in particular the secondary forests. Particular emphasis is placed on tree improvement through trial plantations of selected superior trees for wood production, vegetative propagation and collection and distribution of certified seeds.
- b) Watershed Management with emphasis on tropical mountain areas.
- c) Wildland Management with emphasis on the economy of resources and analysis of alternatives and including national parks, scientific (biosphere) reserves, wildlife management, and conservation of endangered plant and animal species.
- d) Wood Technology through the testing of tropical woods for physical mechanical and chemical properties.
- e) Forest Protection with emphasis on fire and on the shoot borer of the Meliaceae Hypsipyla grandella.
- f) Stable agro-silvo-pastoral systems combining tree crops with annual foods crops or animals.

Gerardo Budowski (Venezuela) Ph.D., Head of Department. Ecology, Silviculture, Conservation.

Arne Dalfelt (Norway) M.S., Wildland Management.

John Hudson (.K.) B.S, Forest Fires.

Frank Zadroga (.U.S.) M.S., Consultant Watershed Management.

Pablo Rosero (Ecuador) M.A., Forest Management.

Donald Zeaser (U.S.) M.S., Consultant Silviculture and Genetics.

Manuel San Román (Costa Rica) Chemical Engineer, Wood Technology*

Luis Ramírez (Costa Rica), Botanist, Wood Technology*

* In cooperation with the Ministry of Agriculture and the University of Costa Rica.

CATIE counts a large number of additional scientists in related fields within the other departments (crops and soils, and animal husbandry) notably in the fields of soils, plant physiology, plant pathology, entomology, statistics, field crops and various tree crops (coffee, cacao, palms, etc.) Close cooperation is also maintained with other institutions dealing with tropical forestry in Costa Rica (notably) the Costa Rica Forest and Park Service, the Tropical Science Center, the Organization for Tropical Studies, the FAO Forestry Mission) and various institutions in Central America and the Caribbean. An agreement exists between CATIE and the School of Forestry, Mérida, Venezuela. Close contacts with the UN system, notably FAO, UNEP, UNESCO, as well as with non governmental international organizations such as IUCN, WWF is also maintained and there are several joint operation.

For any further information, please write to Head, Department of Forest Sciences, CATIE, Turrialba, Costa Rica.

