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# Report of the MPTS Research Network Steering and Research Committee Meetings

held April 5-9, 1988 in Kuching, Malaysia  
in association with the  
Forest Research Institute Malaysia and the  
Sarawak Forest Department

Compiled by  
David A. Taylor and Woon W. Chuen

**Forestry/Fuelwood Research and Development (F/FRED) Project**



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**Report of the MPTS Research Network Steering and Research Committees** documents the results of the joint committee meeting held April 5-9, 1989 in Kuching, Malaysia. It was co-sponsored by the Forestry/Fuelwood Research and Development (F/FRED) Project, the Forest Research Institute Malaysia, and the Sarawak Forest Department. The F/FRED Project is administered by the Winrock International Institute for Agricultural Development, with financial assistance provided by the U.S. Agency for International Development.

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## Foreword

The Forestry/Fuelwood Research and Development (F/FRED) Project developed out of the IUFRO conference held at Kandy, Sri Lanka in July 1984. The project provides a network through which scientists exchange research plans, methods, and results on the production and use of trees to meet the needs of small-scale farmers in Asia. These fast-growing, high-yielding trees are appropriately termed multipurpose tree species (MPTS).

The first meeting of the permanent Steering and Research Committees took place April 5 - 9, 1988 at Kuching, Malaysia. Previously, *ad interim* governing committees met in July, September, and December of 1986.

Appreciation is expressed to the Sarawak Forest Department under the Ministry of Resource Planning, Sarawak for graciously hosting and supporting the meetings and to the project's sponsors in the U.S. Agency for International Development's Offices of Rural and Institutional Development and Forestry, Environment, and Natural Resources within the Bureau for Science and Technology and the Bureau for Asia and the Near East. Thanks go to Rita Manurung of the Agricultural Research Centre in Semengoh for conducting a tour of the centre's activities; and to Lee Hua Seng and Bernard M.H. Lee for making arrangements for other visits.

The meetings in Kuching clarified short-term plans and longer-term objectives for the MPTS Research Network in Asia. Scientists reinforced their commitment to collaboration and information exchange as sure steps toward more successful research and extension.

## Executive Summary

The Steering and Research Committees of the Forestry/Fuelwood Research and Development (F/FRED) Project met jointly April 4-9, 1988 in Kuching, Malaysia. The meeting was hosted by the Sarawak Forest Department of the state's Ministry of Resource Planning, and organized by the Forest Research Institute of Malaysia (FRIM). Participants included representatives from eight Asian countries in the MPTS Research Network, as well as the Regional Forestry Officer for Asia of the Food and Agriculture Organization (FAO), the Vice President of the International Union of Forestry Research Organizations (IUFRO), and the Dean of the Faculty of Forestry at Kasetsart University in Bangkok, Thailand. In addition to these voting members of the committees, six members of the F/FRED project staff attended.

The meeting had three objectives:

- 1) review the progress of network activities
- 2) present and discuss national MPTS research priorities
- 3) prepare plans for future network activities

Presentations by project staff on the project's progress outlined network research and training activities in the humid and sub-humid environmental zone. Cooperating scientists have established network field trials to study the growth and yield of three priority species selected for that environmental zone. Ten cooperating scientists in six countries began these experiments on 15 trial sites in 1987.

Activity in a second environmental zone began in November 1987 with a workshop on MPTS Research in the Arid and Semi-arid Tropics held in Karachi, Pakistan. At a follow-up meeting in Kathmandu, Nepal, in March 1988, network scientists developed designs for network experiments in the arid and semi-arid environmental sub-zones. Eighteen institutions from four countries expressed interest in starting the experiments on 29 sites in the coming year.

Other presentations outlined the project's training and research support activities: the development of a regional plan for control of the *Leucaena* psyllid, the implementation of a short-term training plan, the funding of social science case studies in conjunction with the network trials, the commission of studies on the feasibility of biotechnology, research and training associated with the development of the project's MPTS database management system, doctoral fellowships, and network theme meetings.

Country representatives reported the results of the first series of national MPTS organizing meetings. The meeting discussed the research priorities determined by each country meeting. Commonly cited topics included silvicultural technologies, species selection, research on indigenous species, and research on marketing and demand for MPTS.

The Chairman of the Steering Committee, Dr. Salleh Mohd. Nor, informed the meeting of IUFRO activities and reported on the Bellagio Strategy Meeting on Tropical Forests held in Italy in July 1987. The Bellagio meeting created a task force to prepare specific recommendations for policy responses, funding strategies, and institutional mechanisms for activating forestry research. The meeting agreed that enhancing research would spur action to conserve tropical forests. A second conference to be held next year will review the task force's recommendations. Dr. Salleh invited the participants at Kuching to contribute to this process. Mechanisms discussed for enhancing forestry research included increased networking among institutions and the creation of one or more forestry research centers modeled after the system of international agricultural research centers.

Outputs of the Research Committee's two working groups were:

- 1) a plan for administering a series of small research grants designed as "seed money" for MPTS research

- 2) a schedule for a traveling seminar of network field trial sites
- 3) guidelines on the sharing of collaborative research data
- 4) a plan for initiating a system of twinning arrangements among member institutions of the Asian MPTS Research Network

The Steering Committee endorsed revisions to the framework of the project's research network and committee structure. The committee also discussed the project workplan for 1988-89, which includes plans to investigate the expansion of MPTS Research Network activities into a third environmental zone. This third zone would consist primarily of the mountainous regions of Nepal, Pakistan and India.

The term *multipurpose tree species* has been the subject of much definition and redefinition. The meeting participants agreed that, for collaborative purposes, the meaning and scope of the term should be flexible, and that the selection of species included under the definition should be left to each country to determine, according to its needs.

The Steering Committee endorsed the approach represented by the national MPTS organizing meetings held in each country, where national research priorities were established as the basis for a regional agenda. With scientists in national forestry and agricultural institutions contributing to the development of a research agenda, the result is more likely to address actual needs of the region.

In the second phase of the F/FRED project, scheduled for 1990 to 1995, the MPTS Research Network will address additional areas of MPTS research. Such areas could include wood technology and utilization, extension, and cost-benefit analysis. As the research network approach gains broader acceptance, it can provide the basis for a much broader range of activities. Strengthening national institutions, however, will remain a central focus on which the international system depends. With this focus, the participants agreed on the importance of the following measures:

- o Increased investments by national governments and international agencies to strengthen national research institutions
- o Promotion, by national institutes, of a research environment that recognizes and supports the attitude and work ethic of professional excellence among research scientists
- o Sustained, long-term programs by international agencies supporting forestry research in developing countries
- o Establishment of international research institutes in forest science, following the model of those in the agricultural sector, dealing with priority subject areas and appropriately located in the different regions of the world
- o Encouragement of sponsored research following a "user pays" principle, to make forestry research more purposeful and effective

Future meetings of the Steering and Research Committees will take place in Indonesia in 1989, and in North America the following year. The committees will schedule their 1990 meetings in coordination with the centenary meeting of IUFRO in Canada, at which Dr. Salleh will arrange for a presentation of the MPTS Research Network under the F/FRED project.

The meeting in Kuching reinforced participating scientists in their efforts to exchange research findings and cement international and interdisciplinary links. It resulted in plans and a timetable for upcoming network activities in training and research support, and clarification of long-term network aims. With this progress, the MPTS Research Network approaches its goal of increasing and promoting knowledge about multipurpose trees for the benefit of small farmers in Asia.

## I. Country Reports on Priority MPTS Research Topics

The following reports summarize presentations by the members of the Research Committee on the discussions of research priorities that took place in the first series of national MPTS organizing meetings. These represent the MPTS research issues and topic areas considered important by researchers in the region. While the order of topic listings does not necessarily indicate a priority ranking, the lists provide the basis for developing a regional plan for MPTS research.

**INDIA<sup>1</sup>**

*N.G. Hegde*

### **Marketing Research**

In India, about 85% of the rural population depends on biomass fuel for cooking their daily food. However, about 64% of this biomass is collected by the people free of cost. The remaining demand is met by home-grown material and local purchase. Most who collect biomass free of cost come from small, resource-poor farm families for whom labor and opportunity costs are very low. Small farmers may not choose to grow trees for fuelwood, as they presently collect it free of cost and have no assurance of buyers for their surplus.

Fuelwood marketing should be carefully studied before efforts are made to promote the plantation of fuelwood trees in rural areas. Studies should focus on value-added products obtained from various tree parts, with fuelwood as a secondary product. Marketing infrastructure is needed for collecting wood from areas with surplus for distribution in areas where shortages exist.

### **Selection of MPTS for Different Zones**

With limited information about growth performance and profitability of MPTS, farmers have confined planting efforts to a few species. Available research addresses only certain aspects of different species, many of which do not figure in farmers' decisions. Further research is needed to identify suitable MPTS for different agroclimatic regions. Studies should facilitate the calculation of cost-benefit ratios for promising species.

### **Germplasm Collection, Evaluation and Multiplication**

Outstanding provenances of useful MPTS should be collected from natural stands in different agroclimatic regions. Research should include field trials to compare these provenances for important economic characteristics. Further work is needed to establish facilities for seed testing and certification for field use. Research also should encourage development of seed orchards and seed banks to ensure a supply of superior quality germplasm.

### **Standardization of Silvicultural Practices**

While promoting tree planting, technology transfer methods should promote the adoption of silvicultural and soil management practices -- such as watershed treatments, soil working, mulching, fertilizer application, and watering -- which would directly enhance tree growth and conservation of soil and moisture. These techniques need to be standardized for each agroclimatic zone.

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<sup>1</sup>The first National MPTS Organizing Meeting for India will be held July 4, 1988. This list will be discussed at that time.

## Agroforestry

Agroforestry is the principal land-use system under which most small farmers can adopt tree planting in their fields. Research should ensure that the introduction of trees in no way reduces the yield of the companion agricultural crop. Studies should yield results on suitable tree species which do not adversely affect agricultural crops while they contribute added income. Studies also are needed to identify spacing and management of the trees under different cropping systems.

## INDONESIA

K. Soemarna

### Tree Products

Participants at the National Organizing Meeting felt that trees for rural communities should meet the needs of farmer families. Most farmers in densely populated areas such as Java manage a small area of land. In areas of such highly intensive land use, tree products should be marketable in the form of fruits, fodder, vegetables, medicinal purposes, timber or fuelwood. Generally, the species studied should yield 3-4 such products, in addition to its environmental benefits.

### Species Selection

Among the three F/FRED priority species for the humid and sub-humid tropics, the *Leucaena* species are the only ones accepted in Indonesia as priority species for small farmers' use. Although farmers in certain areas plant *Acacia mangium* and *A. auriculiformis*, the distribution of these species is limited. More than 30 species have been listed as MPTS based on their various products. These include *Leucaena leucocephala*, *Vamanea vaman*, *Verbania grandifolia*, *Tamarindus indicus*, Bamboos, *Albizia falcataria*, *Gliricidia sepium*, *Azadirachta indica*, *Calliandra calothyrsis*, and fruit trees such as *Artocarpus indica*, *Parkin* spp. and *Arenga* spp.

### Further Information Exchange

The Indonesian meeting considered that a network among MPTS research and development institutions is beneficial, both within Indonesia and internationally. A continued exchange of information and further arrangements for improved linkages should follow the first National MPTS Organizing Meeting.

## MALAYSIA

K. Awang

### Fuelwood Production

In rural areas of Malaysia, many industries use wood biomass as a principal source of energy. In the production of ceramics, rubber sheets, charcoal, dried seafood and other food products, as well as in the kiln drying of timber and the curing of tobacco, fuelwood figures as the most important energy source, with such industries accounting for almost 95% of the nation's total fuelwood consumption. With reduced availability of the species commonly used for this purpose, research should study the growth of alternative fuel species by small farmers. In addition to the three F/FRED priority species, scientists could look at *Casuarina equisetifolia*, *Eucalyptus deglupta*, *Gmelina arborea*, and *Paraserianthes falcataria*, which previous research has examined only for their potential for timber production.

### Land Reclamation

Tin mining practices have left large tracts of land barren, amounting to up to 2% of the land area of Peninsular Malaysia. A number of scattered efforts have attempted to rehabilitate the resulting degraded land, including settlement, recreational uses, and agricultural plantation. Reclamation for agricultural

production requires costly inputs of organic matter and fertilizer. Studies should explore the potential of MPTS production as an economic alternative for this purpose.

### **Fruit Production**

Based on increasing local demands, fruit cultivation has good prospects as an income-generating activity. Malaysia possesses over 100 indigenous and introduced fruit species, of which 15 have shown potential for large-scale production. Over 60 species are considered minor fruit trees for their lesser economic potential. Many of these species also yield other products -- such as fuelwood, furniture material, medicines, and dyes -- that add to their economic potential for a small farmer.

Areas worthy of consideration in fruit research are species selection and breeding, agronomic trials, pest and disease control, and orchard management systems. Because a limited amount of land is suitable for fruit cultivation, orchard management research should be aimed towards integration with other land uses such as grazing, aquaculture, and beekeeping.

### **Trees for Vegetables and Fodder**

Many vegetables in Malaysia are obtained from trees, in the form of young shoots, young fruits, or inflorescences. Some of these species are grown primarily for fruit production (*Garcinia atroviridis*, *Gnetum gnemon*) or as ornamentals (*Polyscias*), yielding vegetables as a by-product. These species also could serve as a source for fodder production. Despite advantages of tree vegetable farming over herbaceous vegetable farming, production of these trees has received little scientific attention to date.

### **Other Tree Products**

Studies should explore the potential of trees to yield products such as medicines, starches, natural dyes, resins, gums, fats and oils. In Malaysia, most of these natural products have come from the forest. Studies should determine their agronomic, silvicultural, and horticultural needs for cultivation.

## **NEPAL**

*E.R. Sharma, K. Pyakuryal*

### **Fodder**

In Nepal, demand for fodder production outranks fuelwood production in importance. Research should examine additional species and their potential for fodder production.

### **Socioeconomic Studies**

Scientists should assess methods of forest management, rural social organization, and farm-use patterns and their effects on watershed management. Socioeconomic benchmark studies should be undertaken for the various ethnic and geographic populations.

Because over 80% of Nepal's land area lies in the mountainous environmental zone, MPTS research for that country should examine species appropriate for that environmental range. The participants at the National MPTS Organizing Meeting considered further interdisciplinary and international exchanges to be important in research development, and looked forward to the establishment of an MPTS Research Network for the Mountain Zone.

## PAKISTAN

K.M. Siddiqui, S. Khan

### Silvicultural Techniques

Because there is a lack of information on silvicultural management practices appropriate for MPTS, studies should focus on improved nursery and tree production techniques. More information also is needed on the genetic characteristics of these species.

### Marketing Research

Studies should investigate the demand for tree products such as fodder, fuelwood, and construction timber in different regions.

### Species Research

While the National MPTS Organizing Meeting for Pakistan recognized that network activities concentrate on a few priority species as a basis for future broader network topics, participants suggested that other MPTS already planted by farmers, such as *Ailanthus*, *Robinia*, and *Zizyphus*, also receive attention.

## PHILIPPINES

C.A. Cruz, R.V. Dalmacio

The participants of the National MPTS Organizing Meeting for the Philippines drafted a five-year research and development program on MPTS, based on a determination of the following priority areas of study.

### Benchmark Studies

Studies over the next five years should be carried out to generate information on the status of MPTS in terms of biophysical and socioeconomic site factors.

### Crop Production and Management

Future research should generate improved technologies for nursery techniques and mass planting stock production, MPTS cropping systems, and site improvement technology. Scientists should study the nutrient requirements of MPTS and the processes of nutrient cycling and recycling. Further species and provenance trials need to be conducted to determine other suitable species and varieties.

### Gene Conservation and Improvement

Genetic characteristics of MPTS and methods of tree and varietal improvement require further investigation. Present limited germplasm availability points up the need for the establishment and improved production of seed orchards, and for the development of a reliable system of germplasm distribution.

### Protection of MPTS

The *Leucaena* psyllid has caused massive damage to stands of *Leucaena leucocephala* throughout the Philippines. Information is needed to generate biological, chemical, and genetic technologies for the control of the pest, and to investigate other potential pests and diseases and their control. Weed and fire control measures also merit attention.

### Harvesting, Utilization and Marketing

In Phase 2 of the F/FRED project, socioeconomic studies should develop economically sound and acceptable methods of MPTS harvesting in different cropping systems (e.g., with coffee, cocoa). Post-harvest and other utilization considerations also must be addressed then to minimize post-harvest yield losses and

promote more efficient utilization. Marketing studies should establish the cost-benefit ratio for different species and products.

The five-year research plan noted the importance of training, extension, and technology transfer in addition to research, and included a schedule for activities in these areas to ensure the relevance, transfer, and application of research results.

## TAIWAN (REPUBLIC OF CHINA)

T.W. Hu

While no final decisions for an agenda of research priorities resulted from the National Organizing Meeting in Taiwan, a review of existing research reflects national MPTS priority topics.

### Psyllid Control

Present research for the control of the psyllid insect pest include:

- a) breeding and genetic improvement programs involving the testing of introduced genotypes to determine psyllid tolerance, hybridization to couple tolerance with such characteristics as fast growth.
- b) studies of natural enemies, focusing on 3 species of Ladybird beetles and several kinds of spiders.
- c) biological control programs exploring the potential of psyllid control through parasitic fungi.

### Research and Planting of Eucalyptus spp.

Species and provenance trials are underway, as well as studies of mixed plantations of Eucalypts and nitrogen-fixing species, and spacing trials of *E. grandis*.

Pulp and paper companies have carried out commercial plantings of Eucalyptus species.

### Research on Acacia spp.

Scientists are studying various Acacia species for adaptability, optimal spacing, and end uses. Intercropping studies of small diameter logs (15-20 cm) with Shitakee mushrooms show promise for adoption by small farmers.

## THAILAND

S. Bhumibhamon, Y. Chalamwong

### Species Selection

The National Seminar on the Research and Development of MPTS in Thailand was organized by the National Subcommittee on the Research and Development of MPTS of the National Research Council. Participants at the meeting agreed that fast growth should be an important consideration in the selection of MPTS. Eight species groups of MPTS were recognized for future research:

Eucalyptus

Acacia

Melia - Azadirachta

Leucaena

Mangrove

Bamboos

Rattan

Cassia

## **On-Farm Research**

Research should study the soil improvement effects of nitrogen-fixing trees in on-farm environments on degraded soils in Thailand.

## **Socioeconomic Studies**

Adoption of MPTS by small farmers depends on their perceptions of the information available to them. Socioeconomic studies should determine what incentives and/or information affect the adoption of MPTS, including the provision of free seedlings to farmers and wider information distribution on controversial species such as Eucalyptus.

## **Fodder**

At present, due to limited research results, farmers grow only *Leucaena* for the production of fodder in agroforestry systems. Studies should explore the potential of MPTS for fodder production, as Thailand has great potential for livestock raising.

## **Information Systems**

The Thailand meeting recommended urgent work on information-gathering in MPTS-related subjects (e.g., site conditions, soil types, biomass production, marketing, planting systems, wood utilization), and advised the establishment of a small information center.

## II. Report of the MPTS Research Committee

1. Thirteen members of the MPTS Research Committee representing India, Indonesia, Nepal, Pakistan, Thailand, Philippines, Malaysia, and Taiwan attended the meeting. Dr. Suree Bhumibhamon was elected Chairman of the Committee, and Dr. Cerenilla A. Cruz as Secretary.
2. The members were divided into two working groups. Working Group 1 was assigned to:
  - a) Determine the organization and management of the small research grants procedure,
  - b) Prepare the guidelines for twinning arrangements between participating institutions.

Group 2 was tasked to:

- a) Prepare the arrangements for a field tour to experimental sites of participants in the 1987 MPTS network trials,
  - b) Determine protocol for the use of F/FRED-funded research data.
3. The report of Working Group 1 was presented by Dr. Kamis Awang (sections 3 and 4). The following points were made.

### A. On the administration of small research grants:

- a) High priority will be given to the F/FRED-identified species. Consideration will also be given to species already used by farmers which have potential for multiple uses and wider distribution through the region.
- b) The priority list for research grants in the biological group will be the same as that presented in 1986.
- c) The second priority heading, "social", was expanded to "social and economic."
- d) The ceiling for the small research grants was increased from \$5,000 to \$6,000 per project. If a research project requires more than the maximum amount, the proponent must obtain additional funds from other sources. Other funding sources for the project should be identified in the project proposal.
- e) The review process of the research proposal should be:

First -- Send proposal directly to F/FRED Coordinating Unit

Second -- Coordinating Unit sends the research proposal to 2-4 experts for review

Third -- Coordinating Unit makes the final decision

### B. On twinning arrangements between institutions:

- a) An inventory of institutional strengths and needs should be undertaken for discussion of potential exchanges by institution heads at a meeting. This will provide an important basis for which the twinning arrangement can benefit the parties involved.
- b) Collaborative research, training and research exchanges and joint meetings take place among institutions with Memoranda of Understanding (MOUs), Letters of Understanding (LOAs), or which have entered into other suitable arrangements for cooperation.

- c) Logistics of twinning may depend on the participating institutions, and should be kept flexible to allow for creative and innovative mechanisms.
  - d) Follow-up on preparing the inventory will be the responsibility of the F/FRED Training Officer, guided by Dr. Suree. The inventory form should be distributed by the end of May 1988, to be returned to the Coordinating Unit by July 1. A meeting should tentatively be scheduled for September 1988.
4. The output of Working Group 2 was presented by Dr. Ta-Wei Hu (sections 5 and 6). The main points follow.
- A. On the network field trials tour:
    - a) The tour is aimed to review the progress and problems with the network experiments in five of the participating countries, and to conduct a travelling seminar.
    - b) Nineteen participants, including 4 members of the F/FRED project staff, will go on the tour.
    - c) Of the two options presented for the schedule of the tour, the schedule in appendix 5 was approved for implementation, with a reduction of sites visited. The final scheduling for time in each country will be the responsibility of the coordinator for the participating country in conjunction with the F/FRED Coordinating Unit.
    - d) Those sites not visited on the tour should be presented as slide or video presentations during the travelling seminar.
  - B. On the guidelines for collaborative research and a protocol for use of F/FRED-funded research data:
 

Guidelines for collaborative research and a proposed protocol for use of F/FRED-funded research data were presented and discussed. In view of the forthcoming meeting in Kathmandu, Nepal, to decide on collaborative socioeconomic research, recommended revisions to the guidelines may be submitted for consideration by the Research Committee to accommodate the output of the Kathmandu meeting.

### III. F/FRED Small Research Grants Program

The F/FRED project will provide matching or "seed money" research grants of up to \$US 6,000 to institutions or individuals participating in the MPTS Research Network. Proposed research must be consistent with and enhance the goals and objectives of the F/FRED Project, and of the Research Committee. The following topic areas will receive priority consideration.

#### Biological Topics

##### A. First Priority

- o Increase biomass yield through improved silviculture and management (spacing, thinning, coppicing, watering, pollarding) for small farm use.
- o Improve and standardize methods for nursery stock production (including vegetative propagation) and planting stock establishment techniques for low-input small farm use.
- o MPTS improvement for multiple uses.
- o Research on broader use of MPTS
- o Agroforestry techniques of MPTS grown in association with food and fiber crops (including diagnosis of land-use and farmer problems).

##### B. Second Priority

- o Pest and disease control of MPTS
- o Nitrogen-fixing organisms for inoculation
- o Effect of MPTS on soil conditions and water availability

#### Social and Economic Topics

- o Use of MPTS within indigenous forest and land management systems
- o Local institutions, beliefs, and customs affecting production and use of MPTS by small-scale farmers
- o Opportunity costs for small farm use of MPTS
- o Comparison of social forestry programs
- o Potential demand for MPTS products produced by small farmers
- o Financial analysis of MPTS cultivation
- o Adoptability of MPTS by small-scale farmers
- o Infrastructure and organization required for promotion of MPTS use

Applications for research on species other than those studied in the network trials also will be considered, provided that they are native species already used by farmers with potential for multiple uses and wider cultivation in the region.

A proposal in the biological sciences from a second priority category will compete favorably against one from the first priority area when the topic presents a serious ecological or economic problem in the region.

### **Proposal Preparation**

Proposals must be submitted in English. The institution or individual submitting the proposal is responsible for securing any necessary authorizations, for compliance with local and national laws, and for recordkeeping and reporting of grant money expenditures. The proposal should not exceed five pages of A4 size paper or the equivalent. Applications will be available from the F/FRED Coordinating Unit, or for the 1988 grants program, from members of the Research Committee.

### **Renewals**

At the end of the grant period, a proposal for renewal may be submitted. However, each proposal of renewal will be treated as a separate project and must have its own verifiable objectives. Decisions on grant renewal also will depend upon the achievement of objectives in the first grant and the availability of funds.

### **Proposal Submission**

Proposals must be submitted with a postmark of no later than July 1, and addressed to:

F/FRED Coordinating Unit  
P.O. Box 1038  
Kasetsart Post Office  
Bangkok 10903  
THAILAND

### **Solicitation**

In general, the process for solicitation shall include two means:

- 1) announcement for proposals in *Farm Forestry News* and other newsletters, and
- 2) announcement by members of the Research Committee to the institutions of their countries participating in the national organizing meeting.

The group agreed that for the first year, the solicitation and review process would be abbreviated. Thus, the first solicitation for proposals will be made by members of the Research Committee, who will receive from the Coordinating Unit application materials early in May 1988 for distribution to 20 or 30 institutions in each representative's country.

### **Reviews**

All proposals will be screened by the F/FRED Coordinating Unit for their appropriateness to the network's research activities. Appropriate proposals will then be technically reviewed by up to four scientists with expertise in the proposal's field of study. To the extent possible, Research Committee members will serve as reviewers. A group of Research Committee members, in conjunction with the Coordinating Unit, will decide on those proposals that reviewers recommend to receive funding at a meeting in September 1988.

### **General Guidelines for Grant Selection**

1. It is desirable that the greatest number of countries over the three environmental zones be covered by the grant process.
2. There should be a balance between biological and social recipients such that each discipline area shall comprise at least 25% of the successful proposals.
3. Interdisciplinary cooperation in this research is encouraged.
4. Larger projects may be considered for small grant funds, provided that funds required above \$6,000 can be obtained from another donor. Plans for obtaining other funds must be included in the grant application.

#### IV. A Proposal For Twinning Arrangements Between Institutions in the MPTS Research Network

To encourage the development of a network of researchers working on multipurpose tree species and their use on small farms, the F/FRED project can sponsor short-term exchanges of junior scientists between research institutions in Asia. These scientists would spend from one to six months at the "twinned" institution to work on collaborative research. If, for example, researchers from the Faculty of Forestry at Kasetsart University, Thailand and from the Institute of Forestry in Nepal have similar interests and agree to collaborate on a research program within the scope of the F/FRED project, a researcher from Kasetsart University could go to Nepal for one to six months to conduct collaborative research with counterparts at the Institute of Forestry. One of the researchers from the Institute of Forestry would later go to Thailand for a similar length of time to continue the collaborative research with counterparts at Kasetsart University, including the researcher who earlier went to Nepal.

It is expected that these twinning arrangements will strengthen the links between researchers in the region. This will help to develop a stronger core of individuals who comprise the MPTS Research Network. The twinning arrangements would also strengthen institutional commitments to work on MPTS for small farm use, through the institutions' provision of personnel, facilities and other resources for the collaborative research conducted under the exchange. This contributes to long-term network building among institutions, as well as among individuals.

Junior scientists are recommended for the exchanges so that they may obtain practical, on-the-job training that will help in their future careers. The program would introduce them to different research facilities and methods. It is likely that the institution that they visit would have a different system of research management than at their home institution. Different working conditions would broaden their perspective on their own potential and capabilities and those of their home institutions. Senior scientists are expected to be involved in the research at each of the twinned institutions, overseeing the work of the exchange scientists. Working with senior scientists of another country would further enrich the experience of the junior exchange scientists. Finally, it is expected that the exchanges would provide a basis for future collaborative research among participating scientists and institutions.

F/FRED could support 15 twinning arrangements through 1990. Each arrangement would consist of two institutions in the MPTS Research Network, with a junior scientist from each working for one to six months at the other institution. The F/FRED project would provide travel and a living allowance for adequate lodging and food for the visiting researcher. Some reasonable funds for research also may be made available. The research carried out under these exchanges could be on biological or social science topics concerning MPTS and their use on small farms.

General criteria for approval of twinning arrangements would include:

- o The research done under the exchange relates directly to current network research activities.
- o The researchers from the twinned institutions submit workplans and budgets for their proposed exchange for approval by the MPTS Research Committee and the F/FRED Coordinating Unit.
- o The twinned institutions have formal commitment to the MPTS Research Network through Memoranda of Understanding (MOUs) or Letters of Agreement (LOAs), or through other arrangements mutually agreed to by the institutions and Winrock International-F/FRED.
- o Each of the participants completes a report on their activities during the exchange, apart from the reports of their collaborative research results. These reports will be provided to Winrock International-F/FRED and the twinned institutions. A summary of the results may appear in the project newsletter, *Farm Forestry News*.

- o The participants submit published reports of their collaborative research results to Winrock International-F/FRED for dissemination among other MPTS Research Network participants.

An inventory of institutional strengths and weaknesses should be undertaken as a basis for discussion of potential exchanges by institution heads at a meeting, tentatively scheduled for September 1988. In the meantime, a few twinning arrangements may be made directly between interested institutions, with proposals for funding to be submitted to the F/FRED Coordinating Unit.

## V. A Plan for a Tour of Network Experiment Sites in the Humid and Sub-humid Zone

First proposed in 1987, the idea of a field tour of representative network experiment sites has received endorsement from cooperating scientists.

### Purposes of the tour:

1. To review progress and problems with the network experiments in five of the participating countries.
2. To conduct a travelling seminar which will include discussions of the following topics:
  - o guidelines of nursery techniques
  - o development of standardized MPTS research measurements
  - o modification of the minimum data set for the 1987 network trials
  - o a data analysis and management for the experiments
  - o designs for future network experiments in the humid and sub-humid zone
  - o possibility of future field tours
  - o means of making research more responsive and accessible to small farmer needs
  - o extend duration of network field trials

**Participants:** To keep the tour to a manageable size and make it relevant to network trial participants, participation will be limited to one representative from each institution which has established an experiment and that the representative must be the principal investigator of the experiment or his designated substitute. In addition, the four lead social scientists working on case studies of MPTS production and use will also be invited to participate in the field tour. Not more than four representatives from the F/FRED project staff also will accompany the tour.

**Dates and venues:** Tentative dates have been set for October 16-29, based on responses from participants. The tour will begin in Bangkok and start with a briefing on the background of all the network trials in the five countries to be visited. The field tour itinerary is listed in Table 1. In determining the itinerary, the following were considered:

- 1) the tour will visit as many countries as possible,
- 2) the location of the trial sites and climate types,
- 3) the tour will include sites where social science case studies are being carried out,
- 4) government restrictions on official visits to any particular country,
- 5) the duration set for the tour.

The following persons will be responsible for all logistical arrangements in their respective countries.

<u>Person-in-charge</u>	<u>Country</u>
Suree Bhumibhamon	Thailand
Enrique Crizaldo	Philippines
Romeo S. Raros	Philippines
Komar Soemarna	Indonesia
Kamis Awang	Malaysia
K.M. Siddiqui	Pakistan
Ta-Wei Hu	Taiwan

The following persons or their representatives will participate on the field tour:

1. Boonchoob Boontawee	Thailand
2. Fun Juinn Pan	Taiwan
3. Ta-Wei Hu	Taiwan
4. Komar Soemarna	Indonesia
5. K.M. Siddiqui	Pakistan
6. Kamis Awang	Malaysia
7. Kovith Yantasath	Thailand
8. Mohd. Lokmal Hj Ngah	Malaysia
9. Romeo S. Raros	Philippines
10. Enrique Crizaldo	Philippines
11. Yongyuth Chalamwong	Thailand
12. Chairil Anwar Siregar	Indonesia
13. Bahari Yatim	Malaysia
14. Lucylen Ponce	Philippines
15. Suree Bhumibhamon	Thailand
16. Ken MacDicken	F/FRED
17. Charles Mehl	F/FRED
18. Foster Cady	F/FRED
19. C.B. Briscoe	F/FRED

**Table 1.** Schedule for Network Field Trials tour, October 16 - 29, 1988.

Day	Destination	Remarks
1	Chiang Mai	Briefing
2	Chiang Mai/Lad Krating	
3	Ratchburi	
4	BKK/KL	
5	UPM Serdang	
6	KL/Jakarta/Bogor	
7	Bogor/Cikampek/Dramaga	
8	Jakarta/Manila	
9	Carranglan/UPLB	
10	Tacloban/VISCA	
11	VISCA	
12	Manila/home	For those with difficulty obtaining clearance for Taiwan
13	Manila/Taipei	
14	Taipei	
15	Taipei	
16	Home	

## VI. Guidelines on Collaborative Research and Use of F/FRED-Funded Research Data

### Rationale

The F/FRED project subscribes to the general tenets of science and scholarship and is guided by ethical and professional principles that govern such activities. Committed to a free and open access to knowledge and to self-regulation through peer review and appraisal, F/FRED shares a commitment to the pursuit of accurate and precise knowledge and to public disclosure of research findings.

### General Guidelines

#### I. Regional Research Collaboration

Research conducted in collaboration with F/FRED raises special issues between the project and cooperating investigators/ researchers. For the interest and protection of network participants, the following conditions should be adhered to by all research collaborators.

- A. There should be mutually accepted explicit professional service agreements between F/FRED and cooperating researchers at the outset with respect to division of work, compensation of personnel involved, access to data, rights of authorship, and other rights and responsibilities. Such agreements must be observed and must not be unilaterally changed by any of the participants.
- B. All research reports should be made available in English to the F/FRED project for dissemination through the MPTS Research Network.
- C. Data from F/FRED-funded studies will be made available by all participants in the network experiments for use in combined statistical analyses. A combined analysis summary of the network trials will be published in the F/FRED newsletter. Data from each researcher's own site will not be published by other network members in any form without explicit consent of the participant in the network trials, for a period of three years after date of data collection.
- D. After data from F/FRED-funded studies is published by network trial participants, this data may be made available to other network participants and participating institutions upon request.

#### II. Report of Research Findings/Results

- A. Researchers participating in the network trials or other cooperative experiments are obligated to report findings to F/FRED-Maui without omission of significant data. Biomass data must be reported within 1 month of each 6-month measurement. They also must report details of methods and research designs that might bear upon interpretation of research findings.
- B. When it is likely that research findings will influence local or national policy, researchers should take particular care to state all significant qualifications on the findings and interpretations of their research.
- C. Published papers, especially network-based papers which are not widely circulated, should be provided to F/FRED for distribution and/or inclusion in the abstracts database.
- D. Selection of important related papers for translation to English should be done by all cooperators. The Coordinating Unit in Bangkok should be advised of the subject, approximate number of pages, and the cost. If appropriate and possible, such translations shall be funded by the project, for distribution to all cooperators.

### III. Publications and Review Process

#### A. Authorship and Acknowledgement

1. Researchers must acknowledge all persons who contributed significantly to the research and publication process.
2. Claims and ordering of authorship must accurately reflect contributions of MPTS Research Network participants in the research and writing process.
3. Materials taken verbatim from the MPTS Research Network's published and unpublished work must be explicitly identified and referenced to its author.

#### B. Participation in the Review Process

Prior to publication, external researchers/research collaborators should provide manuscripts and research proposals to the F/FRED Coordinating Unit for review and evaluation.

1. Materials for publication should be reviewed by network participants and the Coordinating Unit to encourage evaluations from a diversity of perspectives.
2. In the submission of manuscripts for publication, the principal author and the F/FRED Coordinating Unit staff may share and coordinate responsibilities.

## **VII. Minutes of the Steering Committee Meeting**

### **1. Selection of Steering Committee Chairman and Secretary**

Dr. Salleh Mohd. Nor and Dr. K.M. Siddiqui were elected as Chairman and Secretary, respectively, of the Steering Committee.

Members present were: Salleh Mohd. Nor, Y.S. Rao, Sathit Wacharakitti, K.M. Siddiqui, Suree Bhumibhamon, Cerenilla Cruz, and Kailash Pyakuryal. Non-voting members present were Thomas C. Niblock and Kenneth G. MacDicken.

### **2. Review of committee structure and purposes**

- A. The working paper on revisions to the framework of the F/FRED Research Network was discussed and the following decisions were taken (section 8).
  - (1) In view of the possible expansion and future participation of other agencies in the present F/FRED Research Network, it was unanimously agreed to refer to the network in the future as the MPTS Research Network under the management of the F/FRED Project.
  - (2) Subpara 4.5 of the working paper was revised to read as shown in section 8.
  - (3) Some of the functions of the Steering and Research Committees were found to be identical. Drs. Rao and Suree agreed to review the functions of the two committees.

### **3. Minutes of Past Meetings**

The minutes of the meetings of the Steering Committee held in June 1986 and September 1986 were approved (appendix II.1).

### **4. Progress Report**

The progress report of the MPTS Research Network for 1987 was considered and endorsed. It was noted that the report was prepared for U.S.A.I.D. and is contract-oriented and targeted to the donor. It was decided that for future meetings the Coordinating Unit would prepare a concise report for consideration of the Steering Committee.

### **5. MPTS - Meaning and Scope**

The Committee agreed that the meaning and the scope of MPTS be flexible and actual species selection be left to each country to determine according to its needs.

### **6. Information Base**

The meeting decided to include economic analysis in the software package for ANOVA and the regression analysis currently being developed by the Global Research Unit in Hawaii.

### **7. Manpower Development and Training**

The Committee recognized the importance of training in the program, and was informed that adequate funding exists within the project for this purpose. The following were discussed and agreed upon.

- a) F/FRED should link up with relevant training courses held by different institutions/agencies in the region, as there were many such courses being held.

- b) F/FRED could initiate its own training courses in specific fields useful to the MPTS Research Network, such as vegetative propagation.
- c) F/FRED is planning a workshop for librarians and other information resource people for Asia in early 1989.
- d) The issue of extension is very important and should be given due attention in Phase II of the project.

#### 8. *Farm Forestry News*

The committee appreciated the efforts of F/FRED in bringing out the informative project newsletter in a timely way.

#### 9. Third Environmental Zone

It was decided that the Coordinating Unit would start planning for initiating work on a third zone for research in mountain environments, preferably before commencement of the mid-term evaluation of the project in September 1988.

#### 10. Workplan for 1988 and 1989

The meeting was informed that 20 MOUs and LOAs have been signed so far by the countries/institutions in the region, and that Papua-New Guinea might join the network. The many activities to be undertaken include the following:

- (a) 1988
  - National Psyllid Control Coordinators Meeting in Thailand, April 26-28
  - Psyllid control meeting in Bogor
  - Two theme meetings in Nepal
- (b) 1989
  - A number of meetings planned, including one on protection and wood quality. Emphasis will be given to small farmer activities.

It was agreed that the Coordinating Unit would prepare annual workplans for the current and subsequent years for presentation and approval of every Steering Committee.

#### 11. National MPTS Organizing Meetings

The meeting was informed of the usefulness of the national MPTS organizing meetings, and it was decided to continue the same. It was suggested that the organizers of these meetings should encourage participation of agriculturalists and NGOs.

#### 12. Future Steering Committee and Research Committee Meetings

The following dates and venues were decided for the meeting of the Steering Committee for 1989 and 1990:

<u>Dates</u>	<u>Venue</u>
October 23-25, 1989	Indonesia
August, 1990 (after IUFRO Congress)	Arlington or Arkansas, U.S.A.

The meetings of the Research Committee would be held at least three months before the meetings of the Steering Committee, as follows:

<u>Dates</u>	<u>Venue</u>
July, 1989	Los Banos, Philippines
May, 1990	Peshawar, Pakistan

### 13. Links with IUFRO

The Steering Committee endorsed the views of Dr. Salleh Mohd. Nor regarding the presentation of MPTS Research Network activities at the IUFRO Congress in 1990 by special programs and research papers. It also was agreed that F/FRED would consider becoming a member of IUFRO.

The meeting also was informed of the progress of establishing INCOFORE by IUFRO, and endorsed a proposal that if and when the IUFRO Asian Coordinator position becomes a reality, that person would be welcome to be based at the F/FRED Coordinating Unit in Bangkok, and that both programs be closely coordinated and linked.

### 14. Preparation of Compendiums

The meeting was informed of two publications, one on organizations in forestry and another a compendium on forestry research in Nepal. It was proposed that the Coordinating Unit review these publications for possible preparation of similar documents in other countries.

### 15. Donor Evaluation

The meeting was informed that the project mid-term evaluation of F/FRED would be carried out in September-October 1988. The terms of reference for the evaluation team are being prepared presently by the U.S.A.I.D. The evaluation mission would evaluate the performance of Winrock International, F/FRED, and the MPTS Research Network, and make recommendations on improvement and future programs. Plans are being made for Dr. Salleh to meet with the team during his planned visit to Washington this year.

Visits by the team to participating institutions and countries are encouraged. Country representatives are requested to prepare for the visit of the evaluation team to their countries, and to propose relevant persons for the team to meet. It is hoped that discussions would be frank, open and honest for the purpose of improving the project.

### 16. Phase II of F/FRED

The first phase of the project extends through 1990, to be followed by Phase II. However, the agenda for Phase II has not yet been written. Additional agenda items could be considered for special emphasis in the second phase. These include: wood technology and utilization, extension, cost-benefit analysis from MPTS field research data, increased training, linking F/FRED with other programs, the role of NGO's, etc. The usefulness of the "bottom-up" approach was stressed and some inputs from the Research Committee and Steering Committee, as well as from the participating countries, were proposed. Dr. Suree agreed to initiate input by the Research Committee in the form of a questionnaire. The Steering Committee and some members of the Research Committee would meet in Bangkok, March 20-24, 1989 to prepare the draft of the Phase II agenda.

### 17. Long-term Future of the MPTS Research Network

Presently, the work of this research network is proceeding successfully on a year-to-year basis. The situation at the end of the project period can only be speculated. However, it is expected that the network would at that time have demonstrated its usefulness. Many things could be built on it. It also may lead to building-up a permanent structure, with the assistance of international organizations. However,

it was recognized that strengthening national institutions, being the core activity, would continue to provide the basis for the international system. For the development of national and international institutions, Dr. Rao suggested the following priorities, which were endorsed by the meeting:

- o Increased investments by national governments and international agencies to strengthen national research institutions
- o Promotion, by national institutes, of a research environment which recognizes and supports the attitude and work ethic of professional excellence among research scientists
- o Sustained, long-term programs by international agencies supporting forestry research in developing countries
- o Establishment of international research institutes in forest science, following the model of those in the agricultural sector, dealing with priority subject areas, and appropriately located in the different regions of the world
- o Encouragement of sponsored research following a "user pays" principle, to make forestry research more purposeful and effective

#### **18. Bellagio II Task Force**

Dr. Salleh explained the function of the task force and discussed with members the possible inputs from F/FRED in the preparation of his report to the Bellagio task force. Discussions, as in Para 17, would provide useful input to the task force.

#### **19. Consultants**

It was agreed that the appointments of consultants should be planned in line with the project activities and that members in the countries be informed well in advance of visits with a clear explanation of the terms of reference, in order to enable government clearance if necessary. Members of the Steering Committee should receive consultants' reports.

The meeting congratulated F/FRED on appointing an increasing number of consultants from the region.

#### **20. International Journal of Tropical Forest Sciences**

The planned publication of the *Journal of Tropical Forest Sciences* by FRIM, Kepong, was welcomed by the meeting. Articles from the F/FRED family of research institutions and scientists working in them were invited. An announcement for this purpose would be made in the next issue of *Farm Forestry News*. The first issue of the journal is expected in September 1988.

The members also were informed that F/FRED would provide up to \$US 400 worth of books and journals per year to each of its participating institutions.

#### **21. F/FRED Coordinating Unit**

The work of the Coordinating Unit was commended. The meeting was informed of the appointment of a Training Officer in the Unit for the purpose of implementing training activities to begin in May 1988. In view of the increasing network activity and the prospect of establishing the third environmental zone network, additional staff could be considered.

## **22. MPTS Scientific Award**

It was suggested by Dr. Salleh and approved by the Committee that a MPTS scientific award be established and announced as an incentive for scientists in the region. The Coordinating Unit has been requested to investigate the appropriate form and mechanism for such an award.

## **23. Financial Position of the F/FRED Project**

The financial position of the Project was reviewed and was found to be satisfactory. However, an increased rate of utilization of the available resources was stressed.

The meeting concluded at 3 p.m. on April 6, 1988.

## VIII. Revised Framework of the MPTS Research Network under the F/FRED Project

### Para 1: Membership/Participation

1.1 Membership in the MPTS Research Network (hereafter referred to as the Network) shall be open to Asian research organizations that have signed, or have expressed the intention of signing, a Memorandum of Understanding (MOU) or a Letter of Agreement (LOA) with Winrock International Institute for Agricultural Development.

1.2 Participation in the Network is open to any and all Asian institutions that are invited to attend meetings of the Network or exchange information with Network members.

### Para 2: Organization

2.1 The governing body of the Network is the Steering Committee. The Steering Committee shall oversee the activities of the Network through the Research Committee.

2.2 The Network was formally established in 1987 when six (6) institutions had signed an MOU or LOA.

### Para 3: Membership of the Steering Committee

The Steering Committee is composed of:

<u>No.</u>	<u>Member</u>	<u>Term</u>
1	Asian scientist with senior ranking in the International Union of Forestry Research Organizations	indefinite
1	Regional Forest Officer for Asia of the U.N. Food and Agriculture Organization	indefinite
1	Dean of the Faculty of Forestry, Kasetsart University	indefinite
2	F/FRED Network Specialists	one year, without vote
1	USAID-designated F/FRED Monitor for the country in which the Steering Committee meeting is held	one year, without vote
4	Representatives from the Research Committee, to include a biological and a social scientist from both the Humid and Sub-humid Zone and the Arid and Semi-arid Zone (one of these will be the Chairman of the Research Committee)	one year

### Para 4: Rules and Terms of Reference for the Steering Committee

4.1 The Steering Committee shall meet annually or as needed. Meetings of the Steering Committee shall be called by its Chairman or by the Network specialists at the F/FRED Coordinating Unit in Bangkok, Thailand.

4.2 The Steering Committee shall select a Chairman from among its members. The Chairman shall serve a one-year term.

4.3 Decisions of the Steering Committee shall be made by a majority of at least two-thirds of the voting members present at any meeting.

4.4 The Steering Committee could invite specialists to advise them as and when considered necessary.

4.5 The Steering Committee shall provide guidance and advice to the MPTS Research Network by:

- a) establishing policies and strategies
- b) planning Network activities
- c) guiding and assisting the Network Specialists
- d) promoting Network programs and activities
- e) approving annual Network progress reports
- f) encouraging the global sharing of information
- g) carrying out other functions as deemed necessary to implement the MPTS research program

**Para 5: Membership of the Research Committee**

5.1 The Research Committee is composed of Asian scientists from participating institutions. Each Asian country with participating institutions will be allowed representation on the Research Committee.

5.2 On alternate years, half of the countries with participating institutions will select two representatives to the Research Committee. In order to integrate the biological and social science disciplines on the Committee, one of these representatives must be a biological scientist and one must be a social scientist.

5.3 Ideally, the selection process would be done in conjunction with National MPTS Organizing Meetings held in each country with participating institutions. Where this is not possible, selection will be done by the Chairman of the Research Committee with consideration of the policies and procedures adopted by the participating institutions.

5.4 Non-voting members of the Research Committee include the two Network Specialists from the Coordinating Unit and the USAID-designated F/FRED Monitor in the country where the Research Committee is meeting.

**Para 6: Rules and Terms of Reference of the Research Committee**

6.1 The Research Committee shall report and be responsible to the Steering Committee.

6.2 The Research Committee shall select a Chairman from among its Asian members. The Chairman shall serve a one-year term.

6.3 The Chairman of the Research Committee shall serve a one-year term on the Steering Committee.

6.4 The Research Committee shall meet regularly as and when needed. Meetings of the Research Committee may be called by the Chairman of the Steering Committee or by the Network Specialists at the F/FRED Coordinating Unit.

6.5 Decisions of the Research Committee shall be made by a majority of at least two-thirds of the voting members present at any meeting.

6.6 The Research Committee shall:

- a) plan research activities
- b) review and approve research activities
- c) coordinate research and other related activities
- d) ensure that standard methodologies are used in research and other related activities
- e) carry out any other functions as deemed necessary to ensure the success of Network activities

**Para 7: National Policies**

The implementation of the MPTS Research Network shall take cognizance of national policies.

**Para 8: Changes to the Network**

The Steering Committee may make changes in the Network as and when considered necessary.

# Appendices

## Participants

### Research Committee

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## **Appendix II**

# **HISTORICAL DOCUMENTATION**

## Minutes of Ad Interim Steering and Research Committee Meetings

### *Ad Interim* Steering Committee, June 24-26, 1986, Bangkok, Thailand

Participants: Salleh M. Nor, K. Siddiqui, S. Bhumibhamon, S. Sukwong, Y.S. Rao, T. Niblock, W. Hyde, R. Dixon, W. Knowland, C. Mackie

The F/FRED *ad interim* Steering Committee meeting was welcomed by Dean Somsak and Rector Sutharm of Kasetsart University. The dean and the rector gave participants and observers at the conference an overview of the university's commitment to cooperative forestry research. The F/FRED project staff presented introductory presentations on the global research, Multipurpose Tree Species (MPTS) network, and Land and Forest Management (LFM) network components of the project.

Steering Committee members presented summaries of current MPTS- and LFM-related research in their countries. Dr. Siddiqui outlined the USAID-sponsored Pakistan Forestry Planning and Development Project, emphasizing the need to establish MPTS field trials to accelerate establishment of farm forestry programs. Dr. Salleh put forth his views on MPTS research networking from three perspectives: IUFRO Executive Council, Director-General of the Forest Research Institute Malaysia (FRIM), and researcher. He presented the F/FRED network specialists with a database of information on current MPTS research by country and tree species. Dr. Suree briefed the committee on current research initiatives in germplasm preservation, forest preservation, and MPTS planting programs. The NRCT (?) has established a board to guide MPTS research and development. Dr. Suree also reported that he is nearing completion of a country-wide survey of perceived MPTS research priorities. Dr. Knowland gave a presentation on U.S.A.I.D. efforts to help improve natural resource management in Asia.

The committee reviewed a draft Memorandum of Understanding (MOU) and made adjustments. Despite differences among members regarding approach and timetable, all agreed that institutional MOU's could be signed in the near future. A government-to-government agreement would be needed in Pakistan. Dr. Rao indicated that formal steps toward research network formation were surely needed.

The topics of network governance was discussed at length. Issues such as expansion of networks and steering committee function (size, length of term, obligations, and responsibilities) were examined. It was suggested that the *ad interim* committee continue to study various options and report to network participants at the September 1986 workshop.

Regarding committee composition and function, Dr. Suree suggested that the Steering Committee expand to nine members: three network specialists, three institution administrators, and three scientists representing MPTS and LFM interests. Dr. Salleh cautioned that participation in the networks may be poor if each institution is not represented.

The committee addressed F/FRED research priorities. It was noted that results of the field survey of research needs by the MacDicken team were not widely available. The committee strongly urged that the team's research recommendations be distributed quickly. Committee members briefed the group on steps within their respective countries for guiding and managing MPTS research. Dr. Suree expanded on his efforts to develop country-wide recommendations for MPTS research in Thailand. Drs. Siddiqui and Salleh indicated that their institutions followed the guidelines developed at the IUFRO workshop held in Kandy, Sri Lanka. All members agreed that F/FRED and IUFRO networks were consistent and complementary.

The committee traveled to the Royal Forest Department Central Forest Research Laboratory, and were the guests of Mr. Swat and Mr. Boonchoob. The committee reviewed the modern laboratories and support facilities. The committee also visited the National Genebank of Thailand. The Kasetsart University Faculty of Forestry hosted a garden luncheon for the committee.

The final session of the meeting focused on planning for future network activities, and the development of an agenda for the September workshop. The committee strongly urged that the workshop focus on the use of microcomputers in research networking. It was suggested that a workshop proceedings be published as an introductory information guide on the F/FRED Project.

A farewell banquet hosted by Winrock International honored the committee.

### ***Ad Interim* Research Committee, September 27, 1986, Bangkok, Thailand**

Participants: K. Awang, R. Barba, S. Bhumibhamon, F. Cady, M. Dalmacio, R.E. dela Cruz, T.W. Hu, K. MacDicken, C. Matang, E.R. Sharma, K. Vivekenandan

1. Dr. Suree Bhumibhamon presided as Chairman and Dr. R.E. dela Cruz acted as Secretary.

#### 2. Decisions on Species to be included as MPTS

A list prepared by the F/FRED staff proposed species for each of three environmental zone networks:

Network 1: MPTS for the Humid and Sub-humid Tropics

- a) *Acacia auriculiformis*
- b) *Acacia mangium*
- c) *Leucaena leucocephala*

Network 2: MPTS for the Arid and Semiarid Tropics

- a) *Acacia nilotica*
- b) *Dalbergia sissoo*
- c) *Eucalyptus camaldulensis*

Network 3: MPTS for the Tropical Highlands and Mountain Zone

- a) *Alnus nepalensis*
- b) *Leucaena diversifolia*
- c) *Robinia pseudoacacia*

These species were earlier identified as priority species at the 1984 IUFRO workshop.

Dr. Dalmacio observed that the listed species are limited, and that other species have more uses as MPTS. Dr. Suree agreed, and proposed that alternative species be included. Mr. MacDicken informed the group that for initial F/FRED research, the species listed had already been confirmed. Following a lengthy discussion on this issue, the committee decided to propose to the Steering Committee the nine proposed species as priority species, with the additions of other species.

#### 3. Grant Application

The Chairman addressed the issue of guidelines to be followed by research proponents regarding a small grants program.

#### 4. Electronic Networking

The committee addressed the issue of how the network will function in light of the fact that some cooperators may not have computer facilities available. Dr. Cady suggested that a questionnaire be drafted to obtain information on:

- o each institution's hardware and software capabilities
- o the relative capability of institutions
- o each institution's financial and manpower requirements

(This issue has not been resolved at the Research Committee level.)

#### 5. Prototype Minimum Data Set, Standardization of Methodologies

Dr. Cady informed the group that a prototype minimum data set will be prepared and will be sent to members of the Research Committee before the December meeting in Malaysia.

Dr. Cady also mentioned the option of hiring a consultant for a month. The terms of reference for the consultant would be to develop recommendations for standardization of methodologies. Preferably, a standardized manual for research trials would be prepared which will include methodologies, data gathering, and statistical analysis.

Mr. MacDicken suggested that a draft of the standardized methodology could be prepared by the F/FRED Coordinating Unit for discussion at the Malaysia committee meeting.

6. The meeting adjourned at 5:15 p.m.

### **Network Trials Planning Meeting, *Ad Interim* Research Committee, December 14-18, 1986, Kuala Lumpur, Malaysia**

Participants: K. Awang, D. Boland, S. Bhumibhamon, F. Cady, R.E. de la Cruz, M. Dalmacio, P. Gavinletrvatana, C. Lantican, K. MacDicken, F. Ng, K. Siddiqui, K. Soemarna

1. The meeting was convened at the Forest Research Institute Malaysia and Plaza Hotel. Dr. Suree acted as Chairman and Dr. R.E. de la Cruz as Secretary.
2. Dr. Salleh M. Nor, FRIM Director-General and Chairman of the F/FRED *ad interim* Steering Committee, inaugurated the meeting. The committee attended as witnesses to the signing ceremony of the memorandum of understanding (MOU) between FRIM and Winrock International. The committee expressed their appreciation to FRIM for the paper on IUFRO Multipurpose Tree Species Research Network Program for Asia (prepared by FRIM), and Sub-activities and Code Numbers of MPTS Research Network Program for Asia (prepared by Hong, I.T., and P. Thilainathan).
3. Dr. Lantican briefed the meeting on the draft manual for standardized MPTS research methods for 1987 trials. Dr. Boland briefed the group on Working with ACIAR and CSIRO MPTS programs. Dr. Raros outlined Social Considerations in MPTS Research, and Dr. Cady spoke about a Prototype Minimum Data Set and Experimental Designs for MPT Network Trial Experiments.
4. The Committee adopted the minutes of the first meeting of the *ad interim* Research Committee held in Bangkok on September 27, 1986.

## APPENDIX II.1

5. The Committee discussed the guidelines and format of research grant proposals as prepared by Dr. Kamis Awang. The F/FRED Coordinating Unit shall submit additional information to outline the scope of work undertaken by F/FRED.
6. Regarding the procedures for review of grant proposals, the committee recommended the following plan for adoption. Research proposals would be submitted to the F/FRED Coordinating Unit for screening and distribution to four experts for technical review and to determine funding. The reviewers would make recommendations to the Research Committee for final action.
7. For the 1987 program, the Research Committee will conduct the final review of all selected proposals and subsequently approve them for funding. Deadline for 1987 proposals is the end of May. The next meeting of the Research Committee is tentatively scheduled for July in Pakistan.
8. Details of data exchange and information dissemination are shown in Appendix II.3. (See Section VI in the body of this report for an updated version.)
9. The committee discussed the database generation at length, and subsequently recommended the following.
  - 9.1 The Research Committee members from each country prepare a state-of-the-art paper for all priority species, to be presented at the next committee meeting. The guideline for these will be prepared and distributed by the F/FRED Coordinating Unit. Compensation for the preparation of these papers should be provided.
  - 9.2 F/FRED should consider the need to support data-gathering activities in member countries during the timeframe of the project.
  - 9.3 Guidelines for information dissemination

Information should be shared withing the F/FRED network.

Exchange of information with other networks or individual institutions should be allowed on request.

Linkages with existing networks should be encouraged.
10. The committee was informed that Dr. Cady had already drawn up the questionnaire for surveying the computer facilities. The form was distributed to the members of the Steering Committee for comment. Based on the recommendations, the questionnaire was revised and will be sent to members of the Steering Committee. The F/FRED Coordinating Unit will summarize the hardware and software capabilities.
11. The committee discussed the terms of reference and status of the Research Committee. The amended TOR will be submitted to the Steering Committee for consideration.
12. Dr. Boland prepared a set of guidelines for germplasm collection (appendix II.4). The committee reviewed and approved the guidelines, with the addition of environmental factors under the item of documentation of collections.

13. By using the matrix system, the committee recommended the following research priorities for network species:

a) First Priority

Increase biomass yield through improved silviculture and management (spacing, thinning, coppicing, pollarding) for small farms.

Improve and standardize methods for nursery stock production (including vegetative propagation) and establishment techniques for low-input small-farm use.

Tree Improvement

Utilization and research on other uses of MPTS

Agroforestry (including diagnosis of land use and farmer problems)

b) Second Priority

Pest and disease control

Study of effects of using suitable nitrogen-fixing organisms for inoculation

Effect of species on soil and water

14. Training

The committee stressed the need to conduct immediately the training course on a minimum data set and standardized methodology, with priority given to organization participating in the 1987 network trials.

The committee recommended that F/FRED sponsor and organize a training course on biomass productivity through improved silviculture and management for junior scientists representing network institutions.

The committee suggested that F/FRED sponsor junior scientists to attend training courses organized by other institutions (e.g., BIOTROP, IFS, IDRC).

Following the research priorities previously discussed, F/FRED should consider the need for an additional training program.

The committee suggested the exchange for on-the-job training of junior scientists within the member countries, in specific key areas of MPTS research.

The committee encouraged F/FRED to sponsor graduate and post-graduate scholarships, with emphasis on MPTS.

Research management training for senior researchers should also be encouraged.

15. The committee suggested that F/FRED distribute available publications and other information on MPTS to network members.

Published information entering the database should be available to anybody upon request. Raw and unpublished data should not be available to those outside the network.

## Research Proposal Format

December 1986

1. **Title:** Should be short and descriptive
2. **Researcher and Institution:** .....
3. **Background:** A brief technical description of the subject that includes discussion of the scientific and technological background. The specific problem to be addressed should be stated clearly, with an explanation of how the proposed research will lead to a solution of the problem. It should also highlight the importance of the topic to the national or regional development problems.
4. **Objective:** General, related to the problem defined in the background discussion. Specific objectives should be expressed in variable terms.
5. **Scientific Antecedents:** Provide a description of present status of scientific knowledge of relevance to the proposed research, with explicit references to earlier or ongoing work. A description of earlier work by the applicant related to the problem would be helpful.
6. **Plan of Work:** The following information should be provided.
  - a) Hypothesis to be tested -- provide a clear statement of the purpose of the work and what question(s) will be investigated.
  - b) Methodologies to be used -- experimental procedures, including designs of field plots or trials, sites should be fully described.
  - c) Activities to be carried out -- the number and purpose of trips to the field, samples to be collected, provenances to be tested, apparatus to be used, parameters to be measured and analyzed, etc., should be indicated.
  - d) Time table and duration of project -- dates should be given if possible. A chart of activities over the proposed time period may be useful.
7. **Anticipated Output of Project:** Outline the output from the project and suggest how achievement of expected objectives will affect the socioeconomic, technical and scientific situations. Identify potential beneficiaries.
8. **Budget:** Show special needs for material and equipment; travel; sample or data collection, analysis and computation; and report preparation.
9. **Approval of the Institution**

## Data Exchange and Information Dissemination

December 1986

1. In order to develop database management information systems for future use, there is a potential to develop, exchange, and transfer of MPTS information in the Asia region through the F/FRED network.
2. **The Database**
  - 2.1 In developing a scientific research network, F/FRED shall develop the information database of priority species.
  - 2.2 The Research Committee shall review past experience and on-going activities on priority species in their countries and report them in the next meeting. Details of the report will consist of:
    - o Constraints in wood supply, with special emphasis on fuelwood and social problems
    - o Outline of experiences on species and provenance trials studying the F/FRED priority species
    - o Report of the scientific development of priority species (biology, silvicultural treatments, agroforestry, yield, utilization, etc.)
    - o Identification of research gaps
    - o Report of the role of foreign aid programs on the priority species
    - o List of references for MPTS priority species
  - 2.3 Information on benchmark trials and multi-site trials of priority species shall be developed as an experiment database.
3. **Information Dissemination**
  - 3.1 Sharing of information within the F/FRED network
  - 3.2 The cooperation with CATIE, ICRAF, NFTA, and other existing networks in the region
4. **Output**
  - 4.1 Identify information gaps and research needs.
  - 4.2 Improvement of quality of seeds used, techniques in raising seedlings, silvicultural treatments, plantation managements, yield, etc.

## Guidelines for Germplasm Collection for F/FRED Network Trials

December 1986

### 1. Introduction

I have been invited to prepare some guidelines on germplasm collection. These notes should be considered as relating to the germplasm material to be included in the F/FRED network species trials. The main factors to consider are:

- a) Type of material to be used
- b) Proper documentation of collections
- c) Need for additional beneficial microbes (rhizobia, mycorrhizae)

### 2. Type of Material to be Used in Trials

The three types of germplasm sources are listed below. The advantages and disadvantages of each source should be understood by all participants. I would support the notion that for *A. mangium* and *A. auriculiformis*, seed of two provenances for each species be used from wild stands (one each from Australia and Papua-New Guinea). The *Leucaena leucocephala* varieties to be used are from cultivated materials of known origin.

- 1) Wild trees (undomesticated)
- 2) Cultivated trees:
  - Plantation-grown ) open or
  - Seed stands ) controlled
  - Seed orchards ) pollination
- 3) Vegetative materials (cuttings, grafts, tissue culture)

### 3. Documentation of Collections

Good source data is essential and should include the following.

- o name of species, variety, etc.
- o name of collection site
- o latitude, longitude and altitude of collection site
- o environmental factors such as rainfall, temperature, etc.
- o soil type (if known)
- o number of trees from which seed was collected (to sample local gene pool and avoid in-breeding depression). In wild stands, seed from at least 10 well spaced trees should be bulked for use in trials

- o viability of seed (as a percentage or number of viable seed per 10 grams)
- o correct methods to achieve rapid and even germination (hot water at 90 degrees C should be used.
- o parent tree details

#### 4. Correct Microbe/Tree Genotype Combination

It is reasonable to assume that there is an optimal combination of rhizobia/mycorrhizae and tree genotype. Such information is not known for acacias, and it is not recommended that microbes be added. The situation for leucaena is different and can be specified.

#### 5. Conclusion

There seems to be material available for the 1987 network trials. I would urge that members constantly review and monitor the situation for the 1988 and subsequent species trials. It is also wise to ensure that back-up material is available, or if more seed of a proven superior seedlot is required.

The Forestry/Fuelwood Research and Development (F/FRED) Project is designed to help scientists address the needs of small-scale farmers in the developing world for fuelwood and other tree products. It provides a network through which scientists exchange research plans, methods, and results on the production and use of trees that meet the household needs of small farmers. These trees, in project terms, are multipurpose tree species (MPTS).

F/FRED is being carried out by the Winrock International Institute for Agricultural Development. Winrock was established in 1985 through the merging of the Agricultural Development Council (A/D/C), the International Agricultural Development Services (IADS), and the Winrock International Livestock Research and Training Center. Winrock's mission is to improve agriculture for the benefit of people—to help increase the productivity, improve the nutrition, and advance the well-being of men, women, and children throughout the world. Winrock's main areas of emphasis are human resources, renewable resources, food policy, animal agriculture and farming systems, and agricultural research and extension.

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